Exploring nature as representation and young adults’ conceptualisations of nature in the user-generated online world:

Nature 2.0

Gillian Elliot

A thesis submitted for the degree of Doctor of Philosophy at the University of Otago, Dunedin, New Zealand

June 2016
Dedication

This study is dedicated to Dürer's Rhinoceros, a nature representation which was printed and shared 500 years ago (1515) by German painter and printmaker, Albrecht Dürer.
ABSTRACT

Urban living is now the norm around the world, nature spaces and species are declining and, it is argued, many now have little or no direct contact with nature. At the same time, people everywhere are increasingly dependent on technology and digitally-mediated experiences of the world, including experiences of the natural world. Much has been written on the benefits of direct nature contact—for both people and nature—and also the (frequently negative) implications of mediated contact, in particular nature experienced via mass media. There is a growing body of research into the social, political and economic implications of the interactive web (Web 2.0) although studies which attend to nature in this online space are still limited. In short, those with an interest in the natural world generally say little about digital or new media technologies, while new media commentators are generally more interested in culture than nature. This study attempts to bridge this disciplinary gap, towards more informed dialogue about nature in the modern, digitally-enabled, increasingly media-centric world.

This cross-disciplinary study addresses both cultural representations of nature (e.g. as Arcadia or wilderness) and young adults’ conceptualisations of nature as realised on Web 2.0; what is described here as Nature 2.0. And significantly, the web is used here as research tool and research environment. An online questionnaire was used to gather quantitative and qualitative responses about Web 2.0 and nature from 504 New Zealand university students and each student was asked to select and share a nature website which is indicative of nature for them. Follow-up focus group comments (from 16 volunteers who had completed the questionnaire) add breadth and depth to the information which was shared by the students online.

The findings from this study indicate that mass-mediated representations of nature that now appear online continue to reflect and inform how people think about the natural world. Furthermore, the interactive web is significant in terms of actualising peoples’ ideas about nature and also enabling (and potentially promoting) certain nature concepts over others, most notably reimagining nature as the more entangled and politicised
These findings challenge established frameworks which are used to understand peoples’ visions or concepts of nature, most notably those which fail to accommodate the potential for different ideas in a changed human-nature landscape (both online and offline). The findings also challenge the methodological boundaries and the language which is used within the nature space. Finally, these findings shine an unexpected light on the role of the user in the interactive space, when nature rather than culture is centre-stage.

Notably, just as this exploratory study has been informed by research from a variety of disciplines, ranging from art history to conservation and new media studies, so too are the findings from this study relevant to human-nature research more broadly. This is the case regardless of whether interest is in contact in the offline physical world, the online digital world or, as here, both worlds now entangled.
ACKNOWLEDGEMENTS

Doing a PhD is challenging. Doing a PhD part-time in a very conservative university, when you already have a full-time job and a family to support, is even more challenging. Fortunately, I’ve been lucky to have the help of some wonderful individuals on my research journey. I’d like to thank my two supervisors, Claire Freeman and Erika Pearson. Claire, your extensive knowledge, patience and steady guidance have been invaluable to me throughout my entire thesis and Erika, your sharp intellect and quirky sense of humour have supported me through my study and also helped keep me sane along the way! Sincere thanks to you both. Secondly, I’d like to thank all those who responded to my survey activities; Lyall Hanton, Ben Varkalis, Chris Haig, Sandra Soeder, Terry Kerr and Steffen Lippert and–most of all–to the many generous students who took the time to do the online questionnaire and participate in the focus groups; thanks guys, there would have been no Nature 2.0 study without your input. I’d also like to thank my colleague and good friend Donald Kerr, who has been endlessly supportive and encouraging over the last five years. And last but certainly not least, I’d like to say a huge thank-you to my family: to Karen Elliot, my wonderful sister-in-law for her fantastic support with the focus groups (we all loved the friands!) and to my two amazing daughters, Mhairi and Jess, who set me on this path and who make me feel this is all worthwhile. And most of all thank you to my husband and lifelong partner, David. You’ve helped me through all my frustrations and difficulties, as well as shared the more interesting and happier times on this long journey of discovery. In the end it was only with your encouragement and support that I have been able to complete this thesis. So to you, David, a very, very big thank you indeed.
# TABLE OF CONTENTS

Abstract............................................................................................................. (iii)
Acknowledgements............................................................................................. (v)
Permissions and rights......................................................................................... (x)
List of tables......................................................................................................... (xi)
List of figures........................................................................................................ (xii)
Glossary of terms and acronyms.......................................................................... (xiv)

## PART I: STUDY INTEREST AND APPROACH

### CHAPTER 1: RESEARCH CONTEXT AND NATURE 2.0 STUDY

1.1 Research context........................................................................................... 1
   1.1.1 Human-nature contact: the problem....................................................... 1
   1.1.2 Human-nature contact: research interests.............................................. 2
1.2 Nature 2.0 study............................................................................................ 8
   1.2.1 Current study interest ............................................................................. 8
   1.2.2 Concept genesis and other interests....................................................... 9
   1.2.2 Research framework and cross-disciplinary approach........................... 12
1.3 Study outline................................................................................................. 18

### CHAPTER 2: RESEARCH STRATEGY

2.1 Mixed methodological approach ................................................................. 23
2.2 Study context, considerations and cohorts.................................................. 26
   2.2.1 Study context ....................................................................................... 26
   2.2.2 Study groups ....................................................................................... 30
   2.2.3 Ethics and the researcher in the research.............................................. 33
2.3 Data collection............................................................................................... 36
   2.3.1 Online questionnaire and web searching activity................................. 36
   2.3.2 Focus group interviews ....................................................................... 42
2.4 Data analysis................................................................................................. 44
   2.4.1 Questionnaire responses ...................................................................... 44
   2.4.2 Online nature selections ..................................................................... 46
   2.4.3 Focus group comments ...................................................................... 51
   2.4.4 Interpretation and value of study findings .......................................... 53

## PART II: STUDY COMPONENTS, THE LITERATURE

### CHAPTER 3: NATURE AS REPRESENTATION

3.1 Introduction................................................................................................... 56
3.2 Arcadian pastoral and the picturesque......................................................... 58
   3.2.1 From the Arcadian pastoral to the English picturesque....................... 58
3.2.2 Challenging the Arcadian pastoral and the Age of Sensibility .......... 63
3.3 Romantic nature and the wilderness ideal ........................................... 65
  3.3.1 Nature as darkness: the romantic sublime and the wilderness ideal ... 67
  3.3.2 Nature as light: the picturesque and nature ideals entangled .......... 69
3.4 Nature as functional resource .............................................................. 71
  3.4.1 Religion, science and economic development ................................. 72
  3.4.2 Colonial expansionism and cultural identity .................................... 73
3.5 Mass media ......................................................................................... 75
  3.5.1 Mass media and the Age of Television .......................................... 77
  3.5.2 Media effects research and on-screen nature interests .................... 80
3.6 Nature as resource on-screen ............................................................... 84
  3.6.1 Advertising: nature sells and is for sale ....................................... 85
  3.6.2 Documentary: hunting nature ..................................................... 87
3.7 Nature as classical on-screen ............................................................... 88
  3.7.1 Advertising: nostalgic nature for sale ....................................... 89
  3.7.2 Drama: nature sets the scene .................................................... 92
3.8 Nature as real on-screen .................................................................... 94
  3.8.1 The photographic image: combining science, nature and truth ....... 94
  3.8.2 Nature documentaries and wildlife films ...................................... 96
  3.8.3 Reimagining real nature on-screen ............................................ 100
3.9 Nature as risk on-screen ................................................................... 103
  3.9.1 Globalisation, modernisation and risk society .............................. 104
  3.9.2 News media: what and how to think about nature ....................... 106
  3.9.3 Boundary-breaching threat and endangered environment ............ 108

CHAPTER 4: CONCEPTUALISATIONS OF NATURE

4.1 Introduction ....................................................................................... 117
4.2 Conceptual considerations ............................................................... 118
  4.2.1 Terminology and language ......................................................... 118
  4.2.2 Epistemology, discipline and methodology .................................. 123
  4.2.3 Stability of nature visions ......................................................... 126
  4.2.4 Why conceptualisations of nature even matter ............................ 129
4.3 Visions of nature research traditions, interests and themes .................. 133
  4.3.1 Dutch research tradition and interests ....................................... 133
  4.3.2 Visions of nature research ....................................................... 135
  4.3.3 Recurring visions of nature as Arcadia, wilderness and resource ... 136
4.4 Visions of nature and related research on young adults & media .......... 151
  4.4.1 Nature research drivers: nature and young adults ....................... 151
  4.4.2 Media research drivers: nature and young adults ....................... 153
  4.4.3 Combining interests in nature, young people and media ............. 159

CHAPTER 5: WEB 2.0, NATURE AND YOUNG ADULTS ONLINE

5.1 Introduction ....................................................................................... 162
5.2 The Internet and World Wide Web .................................................. 163
  5.2.1 The new media environment ..................................................... 165
  5.2.2 Web 2.0 and social media ....................................................... 167
5.3 The user in the new media environment ............................................ 175
  5.3.1 The user and user-generated content ....................................... 175
PERMISSIONS AND RIGHTS

Permissions were granted to use the following images in this study:

Fig. 4  ‘New Zealand (orthographic projection)’ by Connormah (Own work) [CC BY SA 3.0 (http://creativecommons.org/licenses/by-sa/3.0) or GFDL (http://www.gnu.org/copyleft/fdl.html)], via Wikimedia Commons; Retrieved 24 Feb 2016 from https://commons.wikimedia.org/wiki/File%3ANew_Zealand_(orthographic_projection).svg

Fig. 14  ‘I remember when there was no damn environment’ by David Sipress; image licenced (Educational Use) from The Cartoon Bank, The New Yorker Collection: TCB-52410. Rights purchase: 12/18/2012; L11749.

Fig. 17  ‘Elevation map of the Netherlands’ (created and kindly redone in English) by Hans van der Maarel, Red Geographics. Originally appearing in Dutch and retrieved 15 June from http://www.cartotalk.com/uploads/monthly_09_2010/post-14-1284123802.png

Fig. 57  ‘Red onion cross section’ by Amada44 (Own work) [CC BY-SA (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons; Retrieved 18 Jan 2016 from https://commons.wikimedia.org/wiki/File%3ARed_onion_cross_section_01.jpg

Fig. 67  ‘A View in Dusky Bay, New Zealand’ by William Hodges (1773), Auckland Art Gallery Toi o Tāmaki, purchased 1961; Accession no. 1961/33 and ‘Taranaki’ by Christopher Perkins (1931), Auckland Art Gallery Toi o Tāmaki, purchased 1968; Accession no. 1968/3

Images in the Public Domain which were used in this study:

[fig.4] New Zealand showing North and South Islands; [fig.7] Landscape with Shepherd by Lorrain (1644); [fig.8] Claude glass; [fig. 9] Romantic entanglements; [fig.10] American bison skulls to be ground up for fertilizer (1870); [fig.11] Roosevelt in Africa (1910); [fig.15] Earthrise (1968).
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Origin of University of Otago students (2013)</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>Ethnicity of OU students and wider NZ population (2013)</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>Data collection: online questionnaire with web activity</td>
<td>46</td>
</tr>
<tr>
<td>4</td>
<td>Nature valuation arrangements and perspectives</td>
<td>145</td>
</tr>
<tr>
<td>5</td>
<td>University student versus student respondent ethnicity</td>
<td>214</td>
</tr>
<tr>
<td>6</td>
<td>Family interest in nature: selected comments</td>
<td>219</td>
</tr>
<tr>
<td>7</td>
<td>Nature on social media: student response themes</td>
<td>234</td>
</tr>
<tr>
<td>8</td>
<td>Nature themes with and without lazy three</td>
<td>286</td>
</tr>
<tr>
<td>9</td>
<td>Geo-zones associated with websites</td>
<td>289</td>
</tr>
<tr>
<td>10</td>
<td>Nature website selections by geo-zone</td>
<td>290</td>
</tr>
<tr>
<td>11</td>
<td>Web 2.0 Typology elements</td>
<td>300</td>
</tr>
<tr>
<td>12</td>
<td>Web 2.0 Typology</td>
<td>300</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1 Five key research questions ................................................................. 9
Figure 2 Nature 2.0 (Bant, 2011) and Beetle with GPS receiver (Stinson, 2014) ... 10
Figure 3 Study design model ........................................................................... 22
Figure 4 New Zealand showing North and South Islands ................................. 26
Figure 5 Urban Dunedin which includes the University .................................... 27
Figure 6 Online survey question 17 .................................................................. 39
Figure 7 Landscape with Shepherd by Lorrain (1644) ...................................... 61
Figure 8 Claude glass ...................................................................................... 62
Figure 9 Romantic entanglements .................................................................... 65
Figure 10 American bison skulls to be ground up for fertilizer (1870) ............. 74
Figure 11 Roosevelt in Africa (1910) ............................................................... 87
Figure 12 Honda The Impossible Dream [YouTube screenshot] ......................... 91
Figure 13 Shark baiting news controversy [ABC News screenshot] .................. 109
Figure 14 I remember when there was no damn environment (Sipress, 2002) ... 112
Figure 15 Earthrise (1968) ............................................................................ 113
Figure 16 Buijs' (2005) Historical views of nature .......................................... 130
Figure 17 The Netherlands showing sea level ............................................... 133
Figure 18 Nature changes along with us - Next Nature ................................. 135
Figure 19 Images of nature (highlighted) within Visions of Nature framework... 141
Figure 20 Buijs' (2009) Image of Nature conceptual framework .................... 149
Figure 21 Study focus: circulating nature content (green circle) ................. 174
Figure 22 Wild dogs kill kudu - on YouTube ................................................. 188
Figure 23 Funny, cute, talking animals - on YouTube .................................. 189
Figure 24 Four datasets and three study components ...................................... 204
Figure 25 Three study phases ....................................................................... 209
Figure 26 Students by gender & age (bar) and study domain (pie) ............... 212
Figure 27 Family home ............................................................................... 213
Figure 28 Family home and ethnicity ............................................................ 213
Figure 29 Family home and ethnicity excluding NZ European .................... 214
Figure 30 Preferred access to social media ................................................... 215
Figure 31 Time spent on social media ........................................................... 216
Figure 32 Activities on social media ............................................................ 217
Figure 33 Family interest in nature ............................................................... 218
Figure 34 Urban versus rural family interest in nature ................................ 220
Figure 35 Family interest in nature by ethnicity exc. NZ European ............ 221
Figure 36 Family interest in nature by group (%) exc. NZ European .......... 222
Figure 37 Engagement with nature-related activities .................................. 223
Figure 38 Preferred nature contact ............................................................... 225
Figure 39 Preferred nature contact experience and gender .......................... 225
Figure 40 Nature awareness, interests and activities on social media ........... 226
Figure 41 Next Advisor poster (2013) ........................................................... 232
Figure 42 Website: first impression as content .............................................. 240
Figure 43 Website: benchmarking and boundary-breaching ......................... 242
Figure 44 Theme 1: Culture over Nature ..................................................... 246
Figure 45 Theme 2: Entertaining and Stunning Nature ................................. 248
Figure 46 Theme 3: Beautiful and Relaxing Nature .................................... 255
Figure 47 Theme 4: Pleasure in Nature .......................................................... 261
Figure 48 CARES website spectrum: head to heart ..................................................... 267
Figure 49 Theme 5: CARES ..................................................................................... 268
Figure 50 Theme 6: Nature Information ................................................................. 276
Figure 51 Theme 7: Gateway to Nature ................................................................. 282
Figure 52 Seven nature themes from 504 student-selected websites .................... 285
Figure 53 Nature preference by gender (%) ......................................................... 293
Figure 54 NZ European nature choices contrasted with other .............................. 294
Figure 55 Nature content by ethnicity (%) exc. NZ European and New Zealander.... 294
Figure 56 Urban and rural students and content nature preferences .................... 296
Figure 57 Red onion cross-section ....................................................................... 297
Figure 58 Nature sites chosen: Web 1.0 (orange), Web 2.0 (blue) ......................... 302
Figure 59 Content by theme: Web 1.0 (orange), Web 2.0 (blue) ......................... 303
Figure 60 Professional nature content on Facebook .............................................. 305
Figure 61 Nature content on UG and PG sites (purple searches beyond schema) .... 306
Figure 62 UG content (green), social media (blue), all content (grey) ....................... 307
Figure 63 Nature content on all 504 websites: UG (blue), PG (orange) ............... 308
Figure 64 Double-sided nature as risk .................................................................. 314
Figure 65 Buijs (2009) Historical views now with Modern representations of nature 322
Figure 66 Screen technologies: TV to mobile devices ........................................... 341
Figure 67 A View in Dusky Bay by Hodges (1773) and Taranaki by Perkins (1931). 344
GLOSSARY OF TERMS AND ACRONYMS

Terms used in this study

Global North  Economically developed societies including those in Western Europe, North America and Australasia
Biophilia  Innate human affinity for life and life-like processes
New Biophilia  Appreciation of intrinsic value of nature and nature experiences
Web 2.0  Service infrastructure that sits ‘on top’ of the internet
Social media  Applications and tools built on Web 2.0 e.g. Facebook, YouTube
Nature 2.0  Representations and conceptualisations of nature on Web 2.0
Aotearoa  New Zealand
Māori  Indigenous New Zealander
Pākehā  New Zealander of European descent
Arcadia, pastoral and idyllic  Idealised, classical nature often contrasted with city life; concepts are used interchangeably

Acronyms of nature themes emerging in this study

CoN  Culture over Nature
EaSN  Entertaining and Stunning Nature
PiN  Pleasure in Nature
BaRN  Beautiful and Relaxing Nature
CARES  Conservation, Action, Responsibility, Education, Science
NI  Nature Information
GtN  Gateway to Nature
CHAPTER 1

RESEARCH CONTEXT AND NATURE 2.0 STUDY

1.1 Research context

1.1.1 Human-nature contact: the problem

A rapidly expanding human population and growing urbanisation world-wide (Royan & Metherell, 2013; C. J. Tanner et al., 2014) have made first-hand or direct contact with wild nature increasingly unlikely for many in the Global North (Kahn, 2002; Soga & Gaston, 2016; W. R. Turner, Nakamura, & Dinetti, 2004). At the same time, increasing demand for natural resources including land, forests and fossil fuels has resulted in the degradation of those remaining natural places (W. M. Adams, 2010; Kals, Becker, & Ittner, 2006) and is pushing an unprecedented number of species towards extinction (Barnett, 2010; Bishop et al., 2012). As paleontologist, Rolf Hauff argues, “Humanity is presently perpetrating a mass extinction event surpassing any such catastrophe since the death of the last dinosaurs” (in Quammen, 2001, pp. 41-42). As a result, there is growing interest in and concern for the future of the natural world. This is evident in major policy developments (such as the carbon emissions tax), widespread ‘bottom-up’ campaigns (e.g. 350.org) and an increasing number of international collaborative programmes, such as those funded by the NSF. This explosion of activity, aimed at conserving what remains of the natural world and also reversing the human influence on the planet, has been matched only, or even surpassed, by a growing dependence on technology:

Two world trends are powerfully reshaping human existence. One is the degradation and destruction of large parts of the natural world. A second is unprecedented technological development, in terms of its sophistication and pervasiveness… [including] technologies that in various ways mediate, augment, or simulate the natural world (Kahn, 2011, pp. xvi, pxii).

The worldwide love affair with digital technologies began with the widespread uptake of the personal computer or PC in the mid-1990s (Laughey, 2009). Ten years later, Forrester’s ‘Worldwide PC Adoption Forecast’ reported that it had taken almost 25 years
PART I: STUDY INTEREST AND APPROACH  
CHAPTER 1

for a billion PCs to appear in homes and offices around the world (Yates, 2007). Just eight years later (in 2015) this figure had risen dramatically, now doubling to more than two billion PCs worldwide. Furthermore, use of the internet—the infrastructure connecting computer users worldwide—was rapidly shifting from PC desktops to mobile devices; something Forrester would have struggled to predict less than a decade earlier. This growing dependence on the internet and *new media* technologies in particular, has inevitably led to changing nature contact experiences for many in the Global North. As Drenthen, Keulartz and Proctor (2009) suggest:

> Our relationships with nature are increasingly influenced by the artificial and the technical. Robotics, artificial reality, broadband internet connections… all influence our views of nature… (p.10).

These ongoing, increasingly global changes—increased urban living, shrinking natural places, loss of biodiversity and growing dependence on technology in general and new media technologies in particular—have informed a substantial and growing body of research into the human-nature connection.

1.1.2  Human-nature contact: research interests

Many writing on human-nature contact emphasise the advantages of direct contact with nature or conversely the problems associated with lack of direct nature contact, for both humans and the natural world. Direct contact is not the only way in which humans sense nature, however, and researchers distinguish other contact types including *indirect* and *mediated* contact or some variant of these (Duerden & Witt, 2010; Mabey, 1973; Pyle, 1993). Kellert (2002) provides useful working definitions for the three main types of contact with the natural world:

- **Direct** contact involves “actual physical contact with creatures and habitats largely independent of human input and control” [e.g. tramping in a remote area];
- **Indirect** contact again involves “actual physical contact but in a largely restricted, regulated, and constructed human context” [for example activities in gardens, visiting parks and zoos and owning pets];
• Mediated contact involves “realistic as well as symbolic and fantastic representations of nature” [typically representations in art, literature, TV and film; increasingly now includes computers and digital media] (p.xii).

Studies which address the human-nature connection routinely make use of one or more of these contact types and it is mediated contact, in particular, which is at the centre of the current study. The main aim of this Nature 2.0 study is:

… to explore nature as representation and young adults’ conceptualisations of nature in the interactive, online world; what is termed Nature 2.0.

All three contact types are implicated in this Nature 2.0 study, the details of which are outlined in section 1.2 (below). As such, there is value in highlighting the main concerns of those researching human-nature contact more broadly. Four established areas of interest which are revisited throughout this study (to a greater or lesser extent) are:

1. Human-centred: direct contact with nature is beneficial to humans
2. Nature-centred: direct contact enhances the human-nature connection
3. Nature-centred: media and other influences matter

1. Human-centred: direct contact with nature is beneficial to humans
Eminent biologist and environmental advocate, E.O. Wilson, explains the fundamental human need for nature in terms of the ‘biophilia hypothesis’. The term biophilia was originally coined by psychopathologist, Eric Fromm in the early 1960s, to describe human attraction to life, rather than death (Kahn, 2011). Wilson, however, redefined the term 20 years later, to describe the genetic affinity for life and life-like processes (1984). Biophilia, he suggests is:

… the rich, natural pleasure that comes from being surrounded by living organisms, not just other human beings but a diversity of plants and animals that live in gardens and woodlots, in zoos, around the home, and in the wilderness (E. O. Wilson, 1979, p. 43).

While Wilson’s explanation for the human need for nature reflects his interests as an evolutionary biologist others have argued the importance of direct nature contact from
psychological, physical health and educational perspectives. For example, child psychologists, health professionals and environmental educators have investigated why and how nature benefits the healthy development of the child or young person (Cobb, 1993; Hougie, 2010; Kahn, 2002). Most notable, perhaps, is Richard Louv and his ‘Leave no child inside’ initiative designed to combat what he has defined as ‘Nature Deficit Disorder in children’ (2008). Others have examined the value of direct nature contact for the overall wellbeing of the individual (Brymer, Davids, & Mallabon, 2014; Dzhambov, 2013; Kahn & Hasbach, 2013), including nature’s ability to restore mental as well as physical health (C. A. Capaldi, Passmore, Nisbet, Zelenski, & Dopko, 2015; Korpela, Stengård, & Jussila, 2016; Martens, Gutscher, & Bauer, 2011; Martyn & Brymer, 2014). This restorative property of nature—a recurrent theme in human-nature contact writing across disciplines—is eloquently (if not scientifically) articulated in this passage by renowned British author, Iris Murdoch:

I am looking out of my window in an anxious and resentful state of mind, brooding perhaps on some damage done to my prestige. Then suddenly I observe a hovering kestrel. In a moment everything is altered. The brooding self with its hurt vanity has disappeared. There is nothing but kestrel. And when I return to thinking of the other matter it seems less important (1997, p. 369).

Those researching the wellbeing of young people also examine the restorative quality of nature and natural spaces are valued, not just by the researchers, but often by the young people themselves (Abbott-Chapman & Robertson, 2001; Owens & McKinnon, 2009). Finally, those interested in the health and wellbeing of communities, such as urban geographers, planners and architects continue to explore the benefits of a natural environment within town planning and urban design (Ahuja, 2016; Capek, 2010; Jiang, Chang, & Sullivan, 2014; Owens, 1988); a concern which, as Levi (1999) points out, is not new:

The belief that nature in cities is healthful has been discussed by people for centuries (Ulrich et al., 1991). From writers in ancient Rome to the Victorian urban park planners… adding nature to the urban environment has been viewed as important for the health of urban cities (p.208).

This human-centric focus on nature’s health-giving properties, as derived from direct contact with the natural world, commands considerable attention from many who share an interest in the human-nature connection.
2. Nature-centred: direct contact enhances the human-nature connection

Ecologists and environmental psychologists, flip these human-centred, anthropocentric interests and approaches, focussing instead on how human contact with nature impacts on the natural environment (Davis, Green, & Reed, 2009; Harmon & Gleason, 2009; Kaiser, Wölfing, & Fuhrer, 1999). This is evident in the environmental education literature, where research into Significant Life Experiences (SLEs) in particular (Chawla, 1998a; T. Tanner, 1998), suggests that those who most actively care about the natural world experienced substantial direct contact with nature in their early, formative years.

Researchers with an interest in understanding the human-nature connection from a nature-centric perspective (building more nature-conscious or increasingly, more environmentally-conscious citizens) again approach this challenge from a variety of perspectives. Those working in this area also routinely employ quantitative techniques, using a multitude of measurement tests, scales and indices. Depending largely on the discipline, researchers have favoured measuring: environmental knowledge, attitudes, or behaviour (Leeming & Dwyer, 1995; Milfont & Duckitt, 2010); connectedness to nature (Arendt & Matthes, 2016; F. S. Mayer & Frantz, 2004); an affinity for the environment (Kals, Schumacher, & Montada, 1999; Kellert, 2005); environmental sensitivity (Sia, 1984); relatedness to nature (Nisbet, Zelenski, & Murphy, 2009); environmental action and environmental literacy, as a predictor of environmental behaviour (Sia, Hungerford, & Tomera, 1986). It is important to note that this list is not intended to be exhaustive, but rather it highlights both the research commitment to understanding the human-nature connection towards improving knowledge, attitudes and behaviours and also the dominance of quantitative methods in this area of research.

More pertinent to the Nature 2.0 study are two further nature-centred interests. These address influences on the human-nature connection (such as family, education and media) and ideas about the natural world, routinely as visions, images or concepts of nature. Both these interests attract considerably less research attention and they rarely coincide within the same study. Those who attend to influences in combination with human responses to nature are more likely to address knowledge, attitudes and behaviours rather than visions or images; concepts which are more closely aligned with the current study interest. Nature

---

1 “…more than half of all environmental psychological publications deal with [EA]” (Milfont, 2007, p.6).
through media and also nature ideas are foundational within this Nature 2.0 study and both themes are examined in detail in chapters three (nature as representation) and four (conceptualisations of nature). As such, these themes are only briefly addressed here, such that these interests can be situated within the wider human-nature research landscape.

3. Nature-centred: media and other influences matter

Interests in this area can be further subdivided, typically aligning with different disciplinary interests. Firstly, the idea that people’s responses to nature derive not only from personal, first-hand experiences (direct nature contact) but also other influences, is primarily of interest to educators and psychologists. Those studying in this area examine a range of socio-cultural influences and environmental education practices and programmes, typically assessing these for their effectiveness in changing the knowledge, attitudes or behaviours of young people. For example, culture, and societal factors were found to influence children’s environmental cognition (Aguirre-Bielschowsky, Freeman, & Vass, 2011) and the behaviours of young people (Müller, Kals, & Pansa, 2009), while parents inform environmental identity (Bremer, 2014) and sensitivity (Bustam, Young, & Todd, 2003) and family were found to influence nature values (Cheng & Monroe, 2012). Those attending to environmental education focus on the effectiveness of programmes (Bonnett, 2007; Takako, 2004) and also examine the use of innovative technologies, such as cameras and GPS (Chavez, 2009), remotely operated vehicles (Harmon & Gleason, 2009; Zande & Sullivan, 2003) and more recently online nature journaling (Arnold, 2011; Joseph G. Champ, Williams, & Lundy, 2013). These studies are often quantitative and media (when included) may be conflated, e.g. ‘books, magazines and movies’ (Bustam et al., 2003) and/or be largely inconsequential within the study (Bustam et al., 2003; Li & Chen, 2014). Media as ‘incidental study component’ is discussed in chapter three.

The second sub-group attends directly to the media as influence, foregrounding the role of newspapers, books, movies, occasionally the internet and, most of all television, in informing (once again) knowledge, attitudes and behaviours about or towards the natural world. Interests are now driven by those in media and communication studies rather than education or psychology and media now matter. Again, studies are routinely quantitative as research attempts to measure the effects of media and media representations of nature on adults (Good, 2014; Holbert, Kwak, & Shah, 2003) and also younger people (Kil, 2016; Lee, 2011). While there is a growing body of research on the effects of mass media
on the human-nature connection there has been much less interest in this topic from new media theorists, where attention is more often on the social than the natural world.

While the current Nature 2.0 study does not empirically assess the effects of media, this related research validates interest in media and media representations of nature. Furthermore, a number of these studies, in particular those attending to ‘wildlife media’ (Bousé, 2000; Mitman, 1999) speak more directly to the current study interest. Media as a significant research component is also revisited in chapter three.

The third and final interest sub-group here is of a somewhat different order from the other influences, as outlined above. Studies which attend to representations of nature focus on the ideas which are represented within the image or text and while influences or outcomes may be inferred, they are seldom assessed. Mass media theorists are again implicated here as are (to a much lesser extent) new media theorists, as they seek to understand nature as representation on-screen. Also significant here are other cultural theorists (including art and literary historians) who similarly aim to understand how and why particular nature ideas (or frequently ideals) have been represented through a variety of media. Nature as cultural representation—on canvas, in print and on the mass mediated screen—is central to the current study and is the subject of chapter three.

The final human-nature interest group identified here attends, not to knowledge, attitudes or behaviours (so much the preserve of educationalists and psychologists) but to visions and images of nature. Visions and images are closely related to these other human responses but they can also occur at a stage prior to any or all of these; they relate to general ideas about nature (de Groot, van den Born, & Lenders, 2006). As Dutch environmental theorists, van den Berg, de Vries and Vick (2006) suggest, images of nature can be defined as “people’s general cognition of what nature is” (p.45). Significantly, visions or images imply a visual sensing of nature and these ideas or pictures may be revealed using a combination of assessment strategies and tools. Those most actively researching visions and images of nature, in particular Dutch conservationists, often link these ideas with actions; importantly images can be used to inform conservation practice.
The Dutch research into people’s ideas about nature (as visions or images) is closely aligned to the current interest in young people’s conceptualisations of nature. Both interests are concerned with enduring cultural representations of the natural world, typically captured using quantitative or mixed methodological approaches and both assume real world implications in connection with these ideas. In other words, as Cronon (1997) suggests, ideas about nature matter:

The nature inside our heads is as important to understand as the nature that surrounds us, for the one is constantly shaping and filtering the way we perceive the other. Unless we are willing to perform the hard work of exploring and analyzing our own cultural assumptions… we run the grave risk of misunderstanding not only ourselves but the rest of nature besides (xii).

Visions and images of nature speak to the second part of the current study interest—in conceptualisations of nature, as realised online—which is the subject of chapter four.

1.2 Nature 2.0 study

1.2.1 Current study interest

The overarching aim of this study is to explore nature as representation and young adults’ conceptualisations of nature in the interactive, online world; what is termed Nature 2.0. The study aim is addressed through five key research questions, as shown in figure one (below). This study identifies and articulates known and described cultural representations of nature, as these appear within the research literature. These cultural representations are then used to contextualise young adults’ ideas about nature, as realised on Web 2.0 (gathered using an online questionnaire). The survey component of this study is significant and is only possible as a result of the interactive web: the web is used here as both research space and research tool.

The online environment which situates the user at its core—as both consumer and creator of content—makes it possible to simultaneously examine circulating representations of nature and users’ conceptualisations of the natural world as articulated in this open and unbounded digital space. It is these unexceptional, easily or readily created and rapidly circulated representations and conceptualisations of nature—now thoroughly entangled on Web 2.0—which are here described as Nature 2.0.
PART I: STUDY INTEREST AND APPROACH

CHAPTER 1

RQ1: How has nature been historically constructed and represented in the West; what are the dominant and enduring cultural frames?

RQ2: How has nature been represented in mass media; what nature themes are evident?

RQ3: How is nature conceptualised in the modern world; which cultural nature visions, ideas or concepts prevail?

RQ4: Which representations on social media typify ‘nature’ for young adults; does Web 2.0 enable particular or changing ideas about the natural world?

RQ5: What are the implications of these study findings within the wider context of human-nature research?

Figure 1 Five key research questions

In *Reading National Geographic* Lutz and Collins (1993) claim this magazine to be one of the most “potent media vehicles shaping American understandings of, and responses to, the world…” (p.xii). Similarly, it is argued here that when it comes to purveying images of nature in the twenty-first century, Nature 2.0 is one of the most available, visible and potent media vehicles shaping Western understandings of, and responses to, the natural world. This is not, however, the first study to examine Nature 2.0. So how has this concept been used by others and who is undertaking research into these circulating representations of nature online? The following section outlines when this concept first appeared, some of the ways in which this has been applied and how these uses of Nature 2.0—together with its ‘collateral concepts’ (Castree, 2013)–differ from the use of this concept in the current Nature 2.0 study.

1.2.1 Concept genesis and other interests

There are a number of contenders for the first use of Nature 2.0 beginning almost 20 years ago, when DK Multimedia produced the *Eyewitness Encyclopedia of Nature 2.0* (1997). This CD ROM claimed to present “the only comprehensive, interactive guide to the
astounding world of nature.” DK Publishers saw huge potential in packaging an interactive wonderland of connected information about the natural world for young people. In one of the reviews that appeared at the time, Tanaka (1998) writes:

The encyclopedia is part of the company's Eyewitness series, which typically shows great content through innovative interfaces. In this case, a console, covered with plants and visited by various creatures that flit or slither across the screen, serves as the entry point to the information (p.21).

Dorling Kindersley were indeed innovative and well ahead of other publishers in understanding how the digital world might help connect young readers (now as users) to the natural world in increasingly interactive ways. And despite this being the very early days of Web 2.0 their uncomplicated use of Nature 2.0—in terms of user interactivity with nature—comes close to the current use of this concept in this Nature 2.0 study.

Moving forward almost 20 years and this concept is beginning to be adopted and adapted by those with a variety of interests and concerns about the natural world. All these interests are underpinned by a shared interest in nature and technology in general and (to a lesser degree) the web in particular. Like nature before it, Nature 2.0 is rapidly becoming difficult to define—indeed this concept has never been unambiguously defined—and it is useful to provide an insight into research and other more general interests in this space. Understanding context and framing of Nature 2.0 can help to situate these differing interests and also makes it easier to dismiss those interests which are clearly beyond the scope of the current study. For example, an online search reveals Nature 2.0 to be a contemporary blend of nature, technology and art. These creative explorations include Nature 2.0: as image on Flickr (Reichard, 2014); as film collage, showing how humans have shaped nature (House of Chimp Collective, 2014); as an exploration of nature technology bionics (Bant, 2011) (figure two); as ultra-developed, GPS-enabled species (Stinson, 2014) (figure two); and as an element within a sci-fi project i.e. ‘The decadence of mimetic science: against Nature 2.0’ (Hales, 2011).
While these artistic representations of Nature 2.0 as a technology-nature hybrid can be readily set aside (having more in common with a prototype future than a prosaic present) they do not reflect the entire range of interests of those undertaking research at the nature-web intersect. Other interests include Rinner and Duren’s (2011) ‘Design with Nature 2.0,’ which explores the potentials of building a geodata infrastructure within a web mapping environment. Again, there is little ambiguity about the researchers’ interests here and it may be that the collateral concept of Geodata 2.0 serves their interests better. This would appear to be the approach taken by Smith and Kirby (2015) who use the concept of Wilderness 2.0 to situate their interest in the meaning of wilderness for millennials. Again, however, this neologism is used in a particular way, not so much describing ideas of wilderness as these may appear online, but rather to frame an exploration of young people’s understanding of wilderness through essay writing; it is the participants rather than the wilderness who are 2.0.

In their article on nature and technology in advertising Aupers et al. (2012) use Nature 2.0 to frame their interest in the changing relationship between nature and technology in car commercials. They examine the advertisers’ trick of morphing technology into nature and vice versa, where the changed thing is better than what came before. They initially call this Evolution 2.0, but later revise this restructured relationship to Nature 2.0. While the authors’ interest here again deviates from the current interest and attention is on mass, rather than new media, their study on the changed nature-technology relationship is not so readily dismissed and is potentially significant within the current study.

Finally, for Dutch conservation researcher Bram Büscher and also Jim Igoe, it is the connection between online representations of nature and offline or real world responses to the natural world which matter most. More than any other writer on the topic, Büscher’s interest in Nature 2.0 comes closest to the current study interest. That said, Büscher’s primary interest is in conservation, particularly in sub-Saharan Africa (Büscher, 2013a; Büscher & Igoe, 2013) and as a result his attention is on Western conservation interests and practices, rather than on non-specific representations and/or conceptualisations of nature circulating on Web 2.0.
Büscher’s studies and the current study utilise Nature 2.0 as a meaningful concept for these related interests in ‘online manifestations of nature.’ While no-one can claim ownership of this term these interests are overlapping, but not the same. It is suggested that the current study attends to an earlier phase of human-nature interaction, concerning online nature representations and the construction of ideas in the user-generated space, while Büscher’s research attends to a more active phase, where conservation interests and practices are foregrounded. It is suggested that rather than Nature 2.0 this conservation interest may be better served by the collateral concept of Conservation 2.0.

Despite the unprecedented reach and uptake of Web 2.0, there are still few studies which combine an interest in the online world and the natural world. Furthermore, those who are now beginning to be active in this and related areas (such as virtual reality) may use different concepts to address what are similar or even shared interests. More challenging still are the many neologisms, such as technonature (D. F. White & Wilbert, 2009), technobiophilia (S. Thomas, 2013) and animal memes (Myrick, 2015) which continually emerge as researchers attempt to navigate and articulate their interests in this new domain. This highly porous and unbounded research space can present challenges when attempting to identify research which is pertinent to the current interest in Nature 2.0. However, studies which do appear to attend (in part at least) to this online nature interest are discussed in more detail in chapter five.

1.2.2 Research framework and cross-disciplinary approach

Overarching research framework

This explorative media-centred study is made up of two distinct but entangled components: nature as representation and conceptualisations of nature, as realised on Web 2.0. The main aim of this Nature 2.0 study situates this research within an inherently constructionist framework. For constructionists, meaning is derived from the interplay between the subject and the outside world, rather than being ‘out there’ to be discovered (Gray, 2009). As Crotty (1998) eloquently describes:

There is no objective truth waiting for us to discover it. Truth, or meaning, comes into existence in and out of our engagement with the realities of the world. There is no meaning without a mind. Meaning is not discovered, but constructed (p.8-9).
This overarching paradigm implies an interpretivist approach to the object of study; an approach which, “looks for culturally derived and historically situated interpretations of the social life-world” (*ibid.* p.67). Interest is in peoples’ experiences and perspectives and this, in turn, implies particular theoretical approaches, as discussed below. First however, as this study addresses these ‘culturally derived and historically situated interpretations’ (of nature) it is worth touching briefly on what is meant by culture.

Aupers et al. (2012) argue that, “nature has no meaning in and of itself since it is always mediated by and understood through a cultural context that provides particular meanings, ethics and ideologies” (p.4). Differentiating nature from the *cultural context*—or simply from culture—is a challenge for all those writing on these complex concepts. Rather than engage in this historically-founded and enduring debate however, within the context of the current study it is helpful to briefly foreground the key characterisations of culture which have been presented in the literature. Williams (1988) suggests that from the earliest times culture was equated with ‘civilisation’ and he notes how culture has also been variously associated with ‘material production’ and ‘signifying or symbolic systems.’ Ingold (1992) similarly suggests cultures are ‘systems of symbols,’ while Park (1938) notes the significance of communication and language as these contribute to, “those understandings between individuals and peoples which are the substance—the warp and woof—of culture” (p.12). Finally, in their essay on ‘Culture/Natures,’ Sundberg and Dempsey (2009) define culture as:

The material and symbolic productions of a given social group and/or their way of life. Culture is used to draw lines between humans and nonhumans, as well as social groups as evidenced in binaries such as culture/nature and civilized/primitive. (p.458)

Importantly however, these authors also assert that, “while ontological distinctions between nature and culture are generally considered axiomatic in Western societies, this assumption is by no means universal in time or space” (p.458).

Through the constructionist lens then, there is no external reality only multiple and changing realities or as Caulley (2008) describes, “multiple constructions of an external

---

2 Nature and culture are (arguably) two of the most complex words in the English language (Williams, 1998; Eagleton, 2000).
reality” (p.444). ‘Mediatized’ representations and conceptualisations of nature in particular (on canvas, in print and in the media) cannot exist apart from the context of culture; nature is sensed and known through the mediating lens of culture and must therefore be understood with reference to culture (Eagleton, 2000; Lindahl Elliot, 2006; Macnaghten & Urry, 1998). This situation assumes a dialectical understanding of nature and culture; these concepts are not in opposition but instead viewed as inherently and dynamically interconnected. As a result, constructionist and cultural theorists argue that only through understanding the different ways humans have interpreted and represented nature through history, language, media and wider discourse, at different times and for different reasons, can there be useful dialogue about what nature meaningfully is (C. Merchant, 1989; Snyder, 1990; E. O. Wilson, 1984). As Bell (2012) describes, “nature” is an inescapably social–and political–phenomenon” (p.206).

Constructionism does not, of course, deny the existence of a material world which has material consequences. As Fine points out, “natural objects do exist; natural processes have consequences, but they must be interpreted to be made meaningful” (p.248). And importantly, it is through culture that this meaning is ascribed (Ingold, 1992). Unlike ‘nature-endorsing’ (Soper, 1995) essentialists however, who situate an ‘original, pre-human’ (Cronon, 1991) or ‘real nature’ (Argent, 2009) outside of culture, ‘nature-sceptical’ constructionists attend to nature through culture. As Crotty further (1998) suggests:

…the sunset, the mountains, a tree. Natural these object may be, but it is our culture (shorthand in most cases today for a very complex mix of many cultures and sub-cultures) that teaches us how to see them – and in some cases whether to see them (p.55).

Beyond situating the current study within this broadly defined epistemological and ontological framework, the hybrid nature of this exploratory study into media and the natural world makes adopting and adapting an established theoretical position anything but straightforward; whatever approach is applied is likely to be less than adequate for the messy task in hand. It is therefore necessary to engage with the different theories which have informed understanding about media, nature as representation and conceptualisations of nature.
Need for theoretical pluralism
As suggested in section 1.2.1, there has been limited research into Nature 2.0 as described within the current context. As a result, a number of theoretical frameworks from a variety of disciplines may inform understanding of this study interest. The situation is complex. The implications of the user-generated, interactive web within the social world of communication, politics and commerce, have been substantially researched by new media scholars. Similarly, the ambiguity that is inherent in the concept of nature—variously described as familiar, elusive, promiscuous, highly imprecise and much more besides (J. A. Passmore, 1974; Soper, 1995; Williams, 1980)—has been widely explored in the research literature, as has nature as representation, via books, photography and landscape art and also analogue media (most notably, film and television). Nature exists, but how it does so in association with the social web is not yet well understood.

This is the challenge of the current study and it is this challenge which is driving the need for a theoretically inclusive approach. Theoretical pluralism is justified by the difficulty which is inherent in understanding a relatively recent global phenomenon—namely Nature 2.0—which can be informed by earlier theorising, but which must not be constrained by existing theoretical (and also methodological) frameworks. There is a need for a different, more open and inclusive research approach to tackle the challenge presented.

Cross-disciplinary approach
In this study various enduring and more recent cultural representations of nature are presented and discussed. These are used to inform understanding of the different ‘online natures’ which are chosen as being indicative or reflective of a group of young people’s own ideas about the natural world. Social and cultural theorists, including art and literary historians, and mass media theorists help situate understanding about how the natural world has been and continues to be known at the cultural level and also represented through a variety of media. However, many of those examining nature as representation and also ideas about the natural world (including visions, images and concepts of nature) inhabit the analogue world and their theoretical signposts, assured though they may appear, can only guide research in the digital world so far. Conversely, new media theorists who seek to understand representation and ideas in the digital space are primarily
interested in the social world; consequently, they have little to say about representations or ideas about the natural world.

So while the current study is by implication constructionist—interest is first and foremost in ideas and representations of nature—it is also of necessity cross-disciplinary, as this approach is described by Golding (2011). In his essay on interdisciplinary graduate research, Golding suggests that cross-disciplinary research occurs where, “one discipline is used to ‘peer’ into another discipline (and sometimes to critique the other discipline) without [necessarily] using the methods of the discipline” (p.28-29). Cross-disciplinary research is related to but less deeply entangled as other types of interdisciplinary research which, in general terms includes, “any approach that draws on, crosses and integrates at least two established approaches in ways that go beyond the settled practices” (ibid. p.20).3 Importantly, cross-disciplinary research, like other more entangled approaches, resists the idea that, “good fences make good neighbors” (Bang, Medin, & Atran, 2007, p. 13868)4 and embraces the “freedom to explore any theory or method or phenomenon that [seems to be] appropriate to the question being asked” (Szostak, 2012, p. 4). It also, as Pardon (2009) further suggests combines, “complementary individual expertise [and] thinking outside the ‘box’” (p.149). Finally, like interdisciplinary research more generally, cross-disciplinary research responds to the plea made by Castree et al. (2014) for research dialogue:

… that engender[s] plural representations of Earth’s present and future that are reflective of divergent human values and aspirations… we make the case for a richer conception predicated on broader intellectual engagement… (p.736).

This Nature 2.0 study ‘peers into’ a variety of disciplines and research domains which employ different conceptual frameworks and theories. And as Bryman (2012) describes, each of these theories in turn, “provides a backcloth and rationale for the research that is being conducted [and] also provides the framework within which social phenomena can be understood and the research findings can be interpreted” (p.20). The following section outlines why this study, which explores the dual interests of representation and conceptualisation, uses a cross-disciplinary approach. It also discusses what this approach looks like in practice.

---

3 For more on this topic see Repko (2008) Interdisciplinary Research: Process and Theory.
4 Citing Robert Frost’s ironic line from his poem ‘Mending Wall.’
Nature 2.0: cross-disciplinary study

The current study explores the dual interests of nature as representation and online conceptualisations of nature. These nature ‘ideas’ are gathered simultaneously using an online questionnaire which was developed for this study. The questionnaire is used to gather information about the young people who participate in the survey, including their free-text and other responses to questions about social media and nature. Significantly, the questionnaire also includes a web-searching activity which requires each respondent to select an online representation of nature which approximates their own ideas of the natural world; focus group observations further enhance the data which is gathered online. This information—the online nature content, the free-text responses and the other data gathered online and via the focus groups—is then analysed with reference to studies drawn from a number of related disciplines, i.e. the Nature 2.0 study borrows from, peers into and even critiques studies from different disciplines which contribute to understanding. For example, Western representations of nature, such as the Arcadian and romantic ideals, have been extensively discussed by social and cultural theorists, including art and literary historians (this is discussed in chapter three). These cultural representations of nature are also, significantly, used to develop frameworks which aid understanding of people’s contemporary visions and images of nature, such that there is enhanced dialogue, typically about the management of nature spaces and species, between disparate groups (as outlined in chapter four). These enduring nature representations, together with more recent ideas enabled by mass media (in particular, the documentary and news genres) and the frameworks which are applied to understanding, for example, the English pastoral as ‘allegory, retreat and deception’ (Gifford, 2012), are not challenged here. Instead, the theoretical frameworks and findings which emerge from these studies which are undertaken by social theorists, art historians and mass media scholars are used to inform, but importantly not constrain understanding of the online nature representations and other nature content which is shared by the survey respondents.

Of course, examining representations of nature in the mass media is nothing new. What has received much less attention, however, are representations of nature as these appear and rapidly circulate in the new media environment; something which is central within the current study. So while select theories and conceptual frameworks which support understanding in the analogue world of mass media, such as media literacy, media
affordance and media framing, may (arguably) be transferable and inform understanding in the new media environment, other theories and concepts, most notably media convergence, participatory media culture and prosumption now become prominent. Prosumption (a portmanteau of production and consumption) is fundamental to the interactive web and it is the user’s ability to both produce and consume nature content online, which drives the current research interest; interest in Nature 2.0. As highlighted above, the new media researchers who analyse this concept typically focus on the social not the natural world. And as nature commentators say little about new media, ‘prosumption’ (together with other new media concepts and theories) has yet to impact on studies into visions, images or conceptualisations of nature.

This section on the research framework and cross-disciplinary approach has asserted the inherently constructionist approach which is applied within this study. The interpretivist lens priorities certain theoretical frameworks and conceptual approaches over others and here particular attention is on those theories which will further understanding of socially-constructed ideas about the natural world. As this study challenge combines interest in both representations and conceptualisations of nature, so too is there a need to peer into and borrow from those disciplines and theories which will further understanding in this entangled space. As a result, this overview on the need for theoretical pluralism and a cross-disciplinary approach is, of necessity, an entry point into this broad-based exploration, rather than a detailed analysis of any particular theory which will frame understanding of the object of study. Those theories which will inform, rather than frame any findings which emerge in this Nature 2.0 study, will be thoroughly explicated in Section II, which attends to the literature on nature as representation, conceptualisations of nature and also Web 2.0, nature and young adults online.

1.3 Study outline

This introductory chapter has outlined why there is interest in the human-nature connection and presented four significant areas of human-nature studies. This chapter also introduced the focus of the current study; what is described here as Nature 2.0. As this is a relatively new area of research, this overview helps situate this concept and importantly the study focus. This chapter also discussed the overarching framework and
cross-disciplinary approach that is applied to better understand the dual interest in nature as representation and ideas about the natural world as realised online.

The final section in this chapter presents an outline of the upcoming research journey. It situates the main research aim of this study and positions the five key research questions within the upcoming chapters. The nine chapters are presented in three main parts:

- PART I: Study interest and approach (two chapters)
- PART II: Study components, the literature (three chapters)
- PART III: Data presentation, analysis and study findings (four chapters)

PART I: Study interest and approach

Chapter one included an overview of the research context and the overarching framework and cross-disciplinary approach which will be applied. Chapter two then addresses the mixed methodological approach and the research methods used within this study.

PART II: Study components, the literature

‘Nature as representation’ (the subject of chapter three) revisits the enduring cultural representations of nature which have their genesis in Western history, including the classical and romantic traditions associated with art and literature. These nature ideas are then situated within the context of mass media, most notably, television and film. TV in particular is a powerful purveyor of nature imagery and additional cultural representations are identified which are largely enabled and promoted by this medium. These enduring and also more recent nature representations are then used to inform, but importantly not constrain, understanding of the online nature content which is shared. Chapter three responds to the first two of the five key research questions:

- RQ1: How has nature been historically constructed and represented in the West; what are the dominant and enduring cultural frames?
- RQ2: How has nature been represented in mass media (in particular TV and film); what nature themes are evident?

‘Conceptualisations of nature’ (the subject of chapter four) addresses the many challenges of researching within a space which is inherently ambiguous; where the related topics of
visions, images and concepts of nature are defined according to different epistemological and methodological frameworks associated with a variety of disciplinary traditions. Most active in this space have been those researching conservation interests and practices in the Netherlands and also other parts of Western Europe. This chapter highlights some of the most influential Dutch studies in this area and also identifies other interests which examine media and/or young people’s ideas about the natural world. Chapter four attends to the third key research question:

- **RQ3**: How is nature conceptualised in the modern world; which cultural nature visions, ideas or concepts prevail?

The third element of PART II (and the subject of chapter five) explores the new media environment. Web 2.0 and the social media applications that are enabled by this connected digital landscape are central to this study. It is the user-generated, interactive media space—which enables both the production and consumption of content—which makes this new media environment a place where new and changing ideas about the world, in particular the natural world, can emerge. Chapter five articulates the various web components and the different research interests which are evident in the new media space, particularly those concerning young adults as web users and also nature online. Significantly Web 2.0 is used here as both research *environment* and research *tool*.

**PART III: Data representation, analysis and study findings**

Chapter six revisits the mixed methodological approach used to gather and analyse the data and also presents the characteristics of the students who participated in the online questionnaire. The data gathered online include multi-choice and free-text comments (reflecting student demographics, use of social media and nature contact) and the nature selections. Focus group comments add depth to this information. When analysed and combined the datasets build a picture of these young adults and their ideas about nature.

Chapter seven presents, describes and analyses the seven nature themes which emerge from the 504 student-selected websites, together with the supporting comments. As this part of the study includes a highly visual component this chapter includes numerous screenshots of the nature sites which were chosen. Free-text and focus group comments appearing throughout this chapter deepen understanding of the information shared.
Chapter eight revisits and further analyses the nature content, now applying additional location and sub-population lenses. This chapter also analyses the websites as ‘containers’ of nature content. This additional challenge (examining the content ‘wrappers’) was not anticipated in the original study design but rather is reflective of the exploratory nature of this study which combines interest in nature and the inherently dynamic new media environment. Together, chapters six, seven and eight respond to key research question four:

- **RQ4**: Which representations on social media typify ‘nature’ for young adults; does Web 2.0 enable particular or changing ideas about the natural world?

Chapter nine further analyses the findings from this study. This chapter discusses the value of ignoring boundaries and combining interest in representations and conceptualisations within a single study. Chapter nine also attends to the challenges of researching in this complex research space and the author reflects on the unexpected component which emerged in this study, noting the value of any findings for new media researchers who may or may not share an interest in nature. Finally, this concluding chapter includes recommendations for future study into human-nature contact and a plea for more integrated research which can better respond to a world that can no longer easily be packaged according to interests that are *either* in the online space or in the real world. Chapter nine responds to the fifth and final key research question which is:

- **RQ5**: What are the implications of these study findings within the wider context of human-nature research?

The Study Design Model (figure three below) visualises the Nature 2.0 study and upcoming research journey:
Figure 3: Study design model
CHAPTER 2

RESEARCH STRATEGY

2.1 Mixed methodological approach

The previous chapter identified the overarching constructionist paradigm which informs this study. This in turn informs the research methodology, i.e. the mixed methodological approach used to explore representations of nature and young adults’ conceptualisations of nature as realised online. As noted in the first issue of *The Journal of Mixed Methods Research*, “mixed methods research is defined as research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry… (Creswell & Plano Clark, 2011, p. 4). And as Gray usefully explains, this research approach is contingent on a particular view of knowledge and mode of enquiry:

… mixed methods research adopts a pragmatic method and system, based on a view of knowledge as being both socially constructed and based upon the reality of the world we experience and live in (Johnson et al, 2007). Its mode of inquiry then makes use of induction (to identify patterns), deduction (testing theories and hypothesis) and abduction (uncovering and relying on the best explanations for understanding one’s results) (Johnson and Onweugbuzie, 2004). (2009, p. 204)

A mixed methodological approach is used in the current study, as is evident in the data gathering techniques and also the presentation and analysis of the data collected. The study uses an online questionnaire to gather nature websites and other quantitative and qualitative data and also focus groups to capture additional, more open observations. Notably, while both quantitative and qualitative techniques are used in this study particular emphasis is given to the nature content appearing in the student-selected, interactive websites, together with the free-text and other comments captured online and during the post-questionnaire focus groups. It is how the students choose to represent the natural world through the open unbounded lens of social media, together with their own unguided comments and observations in support of this content, that drives the current study interest.
In addition to gathering and analysing this empirical data, information is also gathered from a wide variety of formal, discipline-based sources; this information is used to contextualise and draw meaning from the data captured through the online questionnaire and in the focus groups. As discussed in chapter one this Nature 2.0 study moves between conventional disciplinary boundaries (including social and cultural history, nature and conservation studies and mass and new media studies) and this is reflected in the sources and frameworks which inform and add meaning to the information which is gathered.

A mixed methodological approach is appropriate within this exploratory study which gathers representations and students’ ideas about nature simultaneously. This approach makes it possible to address different aspects of the main research aim and adds richness and depth to understanding what are complex phenomena. It also enables triangulation of results towards credibility of the findings which emerge. The value of adding richness to the research and the importance of credibility of findings are discussed briefly below.

**Adding richness and depth to understanding complex social phenomena**

The value of using a mixed methodology to understand complex social phenomena is well documented (Denzin & Lincoln, 2005; Patton, 2002; Tolich & Davidson, 2011). This enables the researcher to move between a more constrained, hypothesis-based approach (generally associated with quantitative research) to the more dynamic, iterative, interpretivist approach (more typical of qualitative studies) where theories are, at least in part, generated from the data. While all research is iterative (to a greater or lesser extent) the current research which focusses on ideas about nature explicitly embraces the flexibility and dynamism of a mixed methodological approach towards informing a more multi-layered, meaningful and robust research outcome.

The online questionnaire uses closed, structured and semi-structured questions to gather factual data such as demographic information. Including attitudinal scales and open, free-text boxes also makes it possible to capture more complex data about social media and nature within a structured, neutral environment. The information gathered through this survey approach provides a robust and replicable foundation for the research. In addition, the nature website selection activity takes the students beyond the questionnaire and enhances the data by recording what the students’ actually think (which online natures
they choose as being representative of nature for them) in conjunction with what they say about the interactive websites they select (“This is nature because...”).

The potential to gather in-depth feedback from students through this largely structured and distanced approach, however, is constrained, not just by the survey format (checking boxes and short sentence responses) but also by the ‘silence’ and remoteness of the researcher; there is a limited requirement, incentive or indeed potential to develop or expand upon the responses given to the online questions in any real depth. In an attempt to leverage understanding from the data gathered online, volunteers from the original respondent group are invited to participate in small focus groups. These semi-structured interviews allow the researcher to probe the students’ understanding of the survey questions more deeply towards more “in-depth understanding of the phenomenon in question” (Denzin & Lincoln, 2005, p. 5). The interviews enable the respondent voice to be heard and for richer pictures to emerge. This flexibility, moving between and building upon the different types of information, makes it possible for more informed understanding towards deeper insights of what are complex social phenomena.

**Triangulation of results towards credibility of findings**

Triangulation involves the use of “multiple data collection techniques or multiple sources of evidence, or, very commonly, both” (Pickard, 2007, p. 86). Within the current Nature 2.0 study combining comparable but somewhat constrained questionnaire responses with the much more open and informative but non-reducible focus group comments, strengthens understanding around the phenomena in question (Drisko, 2005). The inclusion of a hands-on web activity within the online questionnaire also captures what students actually think about nature, rather than what they say they think about nature. The nature selections in turn provides the study with a bank of respondent-selected ‘online natures’ which can then be compared and analysed in conjunction with the other qualitative and quantitative data gathered.

Triangulation of techniques is an important aspect of research within the social sciences. It enables the researcher and also others to ‘test the data’, to eliminate bias and to build towards findings which are credible and trustworthy. The credibility of the current study and the value of any findings are revisited in section 2.4, on data analysis.
This chapter now moves beyond the value of a mixed methodological approach and attends to the particular considerations associated with using this approach within the current study. The upcoming sections address the New Zealand study context, the student survey population and the collection, representation and analysis of the survey data.

2.2 Study context, considerations and cohorts

2.2.1 Study context

This study is undertaken at the University of Otago in Dunedin, New Zealand. The study questionnaire was trialled at the same institution (in May 2012) with first year Geography students before being used with the target study population of first year students from all four University Divisions. The particular location and population demographic help to contextualise the Nature 2.0 study and are discussed in the sections below.

New Zealand study location

New Zealand/Aotearoa has a population of four and a half million people and a land area of 270,000² kms. Nearest neighbours include the island of Tonga (almost 2,000 kms to the NE) and Australia to the NW; the city of Brisbane is closest, at over 2,000 kms away. To put this into a global island nation perspective, New Zealand is slightly larger than the UK which is home to over 64 million people and is a short boat ride from Europe. New Zealand is also about two thirds the size of Japan which supports a population of over 127 million people and which is situated less than 50 kilometres from the Asian mainland.

Figure 4 New Zealand showing North and South Islands
Most New Zealanders live in either the North Island (Te Ika a Maui) or the South Island (Te Waipounamu). The capital city is Wellington, situated in the lower North Island, but the biggest urban centre by far is Auckland. This rapidly growing city with over 1.4 million people (almost a third of the country’s total population) is situated around the same southern latitude as Melbourne. It is also a 1500 kilometre trip from Auckland to Dunedin, which is the location of the Nature 2.0 study.

**Dunedin study location and University study population**

Dunedin is one of the world’s most southerly cities. It encompasses a relatively large, rural and semi-rural land area beyond the main urban centre, which is nestled at the head of Otago Harbour on the east coast of the lower South Island (figure five). Dunedin is also a university town with a term-time population of around 120,000 residents; 21,000 of whom are University of Otago students. This significant student population–almost 18% of the total city population–brings youth, vitality and from time to time particular challenges to what would otherwise be a quiet, mid-sized Antipodean town. The relationship between ‘town and gown’ is recognised as being an important one as the students’ contribute much to the economy and also the character of the city.

![Image](image.jpg)

*Figure 5 Urban Dunedin which includes the University*

Students who choose to attend the University of Otago in Dunedin come from both North and South Islands and also from overseas, as shown in table one:

---

5 All University statistics are from Quick Statistics (2013) [www.otago.ac.nz/about/quickstats.html](http://www.otago.ac.nz/about/quickstats.html). These statistics coincide with the year the students were surveyed (2013).

6 The city student population is even higher as the city also boasts a Polytechnic with over 3,500 students.

7 The main campus is in Dunedin; there are also medical campuses in Christchurch and Wellington and other outreach centres in Invercargill in the far south and Auckland in the north of the North Island.
Table 1 Origin of University of Otago students (2013)

<table>
<thead>
<tr>
<th>Home area of Otago student: 2013</th>
<th>No. students</th>
<th>% students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dunedin, Otago and Southland regions</td>
<td>5,936</td>
<td>28%</td>
</tr>
<tr>
<td>Remainder of the South Island</td>
<td>3,792</td>
<td>18%</td>
</tr>
<tr>
<td>North Island</td>
<td>8,284</td>
<td>39%</td>
</tr>
<tr>
<td>Overseas (including NZ citizens overseas)</td>
<td>3,012</td>
<td>14.5%</td>
</tr>
<tr>
<td>Unknown</td>
<td>89</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21,113</strong></td>
<td></td>
</tr>
</tbody>
</table>

Almost three quarters of the student population are Pākehā i.e. of European descent. While this statistic approximates the situation nationally, the statistics for other University ethnic groupings diverge somewhat from the national profile, as shown in table two.

Table 2 Ethnicity of OU students and wider NZ population (2013)

<table>
<thead>
<tr>
<th>Ethnicity: 2013</th>
<th>% Otago students (permanent &amp; temporary residents)</th>
<th>% New Zealanders(^9) (permanent residents only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European/Pākehā</td>
<td>74.3%</td>
<td>74%</td>
</tr>
<tr>
<td>Māori</td>
<td>8.0%</td>
<td>15%</td>
</tr>
<tr>
<td>Asian</td>
<td>18.6%</td>
<td>12%</td>
</tr>
<tr>
<td>Pasifika</td>
<td>3.2%</td>
<td>7%</td>
</tr>
<tr>
<td>Unknown/other</td>
<td>3.3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

This brief insight into the environment from which a study group is drawn helps situate the current study. This particular combination of location and university context also flags two key considerations which are worthy of further reflection. These ‘methodological caveats’ (de Groot & van den Born, 2003) relate to the university context where the survey is deployed and also Dunedin and New Zealand as ‘nature-friendly’ places.

**Study considerations/methodological caveats**

In their exploration of visions of nature and landscape preference in the Netherlands, de Groot and van den Born (2003) outline several methodological caveats which are also significant within the current study. These authors discuss the bias potentials regarding the research location where the survey is deployed and the responses given and also the prevailing nature-friendly factor in countries such as the Netherlands. These survey considerations are pertinent in terms of the university context and giving the ‘right’ response and the nature-friendly reputations of both Dunedin and New Zealand.

---

\(^8\) Pākehā is a Māori term used colloquially by many New Zealanders.

In an attempt to keep any location or response bias to a minimum, de Groot and van den Born (2003) select what they describe as a very unexceptional part of the Netherlands for their visions of nature study; the physical landscape is pleasant but nothing exceptional and the town is chosen for its ‘normalness’ (p.129). While it was not possible to neutralise the Nature 2.0 context in the same way, being transparent in this study about the university location and the student population of interest makes it possible to address any concerns which may arise. The University campus is generally a safe space to live and study and many of the students who complete the online questionnaire are likely to use their own computer (University of Otago, 2014),\(^{10}\) a reasonable environment in which to respond to questions about nature. More importantly the students are in an educational context; they are asked to do the survey by their teachers and, as such, may be predisposed to give the answers they think their teachers expect. As de Groot and van den Born (2003) suggest when reflecting on student responses to a university NEP\(^{11}\) survey:

\[
\text{…it must also have been clear to virtually all students that the survey had been sent to them by a nature-friendly university department. Thus, a bias may have arisen that only the more nature-friendly students may have returned the questionnaire and that within this group, people have tended to be nice to the department and give nature-friendly answers (p.137).}
\]

While the university context and the potential for bias within the student survey population are worthy of reflection, of even greater significance (when attending to the human-nature connection) is the perceived nature-friendliness of Dunedin, promoted as the wildlife capital of NZ\(^ {12}\) and also wider New Zealand, marketed as 100% Pure around the world.\(^ {13}\) Furthermore, one of the marketing strategies of the University to non-Dunedin students (those resident in the North Island as well as those living overseas) is to demonstrate the nature opportunities around the campus such as beaches, tramping and wildlife. Marketing hype may not and frequently does not reflect the reality on the ground. However, New Zealanders generally do appear to be aware of, to appreciate and to value the natural world both for its health-giving properties (L. Roberts et al., 2015) and its intrinsic worth (Colmar Brunton, 2013).

---

\(^{10}\) The University of Otago Student IT Access Survey (2014) indicates that 98% of students own or intend to buy a laptop. (Just eight years earlier (in 2006) less than 50% of Otago students owned a laptop.)

\(^{11}\) New Environmental Paradigm

\(^{12}\) Dunedin official website: [www.dunedinnz.com/visit/home](http://www.dunedinnz.com/visit/home) retrieved 30 May 2015

\(^{13}\) 100% Pure New Zealand: [www.newzealand.com/int/](http://www.newzealand.com/int/) retrieved 30 May 2015
PART I: STUDY INTEREST AND APPROACH

CHAPTER 2

It is recognised that the students who respond to the questionnaire are within a university environment, implying they will be younger, better educated and generally more informed than the wider population. It is also acknowledged that the study context is likely to reflect a nature-friendly bias. However, by spreading the survey net as widely as possible, to students studying within all four Academic Divisions (beyond identifiably nature-loving departments), this concern becomes less of an issue. And as de Groot and van den Born (2003) suggest, the inclusion of other non-nature-friendly survey questions, i.e. those “that address non-nature issues” (p.137) such as questions about social media, will help to minimise the potential for a pro-nature bias in the survey responses.

2.2.2 Study groups

Strategic sampling was used to identify a pilot survey group to pre-test the online questionnaire. This purposive sampling approach is also used to identify the main study population which is drawn from the wider University student population. Considerations and observations concerning these two groups, together with reflections on a third self-selected focus group are discussed in the sections below. In summary, these groups are:

- **Pilot group**: Year 1 Geographers who pre-tested the online questionnaire;
- **Questionnaire respondents**: Year 1 students who completed the online survey;
- **Focus group participants**: students who self-select from the larger group of questionnaire respondents and agreed to participate in follow-up focus groups.

Pilot group

The survey questionnaire was trialled early in the Nature 2.0 study (May-June, 2012) with a group of University of Otago volunteers. These undergraduate students were recruited from a much larger group of 300 students enrolled in a 100-level Physical Geography paper. Recruitment was done during one of the lectures and a total of 82 volunteers agreed to test the online questionnaire, including providing written feedback about the overall content and design of the survey. The pilot group included both male and female participants from a variety of socio-economic backgrounds as well as a mix of New Zealand and international students. While there will clearly be differences between the pilot group and the main group of study respondents, in general terms, the composition
of these two groups is likely to be similar. Eighty-four percent of the students in the pilot group were between 18 and 21 years; the target study population is between 18 and 20 years. Also, by choosing to attend university both the pilot group and the questionnaire respondents have a demonstrated interest in education.

The pilot group provided invaluable questionnaire responses and also feedback on both the content and general design of the survey prior to this being shared with the target population of Year 1 students aged 18-20 years, studying a range of academic disciplines.

**Questionnaire respondents**

The Nature 2.0 study targets first-year, locally resident students aged between 16 and 20 years. Born between 1992 and 1996 these 16 to 20 year olds, like many of their contemporaries in the Global North, have lived with Web 2.0 (or at least had the potential to do so) as an unexceptional part of their ordinary everyday lives. These students were also old enough in 2005 (when social media started to become mainstream) to make many of their own decisions about how they interacted with Web 2.0 applications and services. Those who are targeted to respond to the online questionnaire include both male and female students from a variety of socio-economic backgrounds as well as local students (from either Dunedin or elsewhere in New Zealand) and international students.

**Representativeness and accessibility of students**

Adopting a strategic approach to identifying questionnaire respondents helps ensure that the data gathered reflects maximum variation from multiple student perspectives (Maykut & Morehouse, 1994). It is also important to target student groups which are accessible to the researcher. This is a challenge at Otago, a research-intensive University where students and departments are effectively over-researched and lack the time or enthusiasm to participate in any further research. To get around this challenge and also to ensure optimum engagement contact was made with selected academics in each of the four University Divisions well in advance of the questionnaire deployment. As gatekeepers to the survey population the teachers’ co-operation and support would prove invaluable in terms of student recruitment for the online questionnaire.

While the intention was to gain an equivalent representation of students from all four University Divisions the on-the-ground reality is that the number of students represented
in each Division and access to these students is not equivalent. The University of Otago is one of only two universities in New Zealand which trains health professionals and there is a significant structured undergraduate Health Sciences programme. The resulting class sizes (ranging from 1,000 to 2,500) potentially bring together a large number of students under the direction of a single gatekeeper. This is not the case for undergraduates studying in Humanities and Commerce who are free to combine papers according to their differing interests or particular study requirements. As a result, a single gatekeeper in these Divisions is more likely to control access to one hundred rather than one thousand students. This situation is likely to be reflected in the make-up of the respondent group and while this situation must be disclosed it is not otherwise problematic. The intention is to include sufficient diversity such that the research population is ‘good enough’ and ‘fit’ for the purposes of the current research activity (May, 2011, p. 100).

Four lecturers-as-gatekeepers supported the current research and all agreed to provide access to classes of 100-level students. The lecturers agreed to introduce the questionnaire at the start of their face-to-face classes; the questionnaire would then be made available to the students through Blackboard, the University’s online learning management system. While it was difficult to know the precise number of students who would be in each class (or how many would respond to the online survey) in advance, it was anticipated that around 1500 students would be made available to participate in the Nature 2.0 study.

**Focus group participants**

Eligible students who successfully complete the online questionnaire and who also indicate interest in talking further about their experiences of nature and social media will be approached and asked to participate in a focus group. These semi-structured sessions build on the online survey findings (e.g. discussing how the survey questions were perceived and reflecting on the responses provided) potentially adding colour and depth of understanding around the quantitative results, the online nature selections and the free-text comments which were shared by the larger group of questionnaire respondents. These three student groups—the pilot group, the questionnaire respondents and the focus group participants—are revisited in later sections, on data collection and data analysis.

---

14 The more general concern that any findings associated with a student population may not be extensible to other young New Zealanders is examined in chapter six.
2.2.3 Ethics and the researcher in the research

The University of Otago Ethics Committee granted the necessary approval to survey students over the age of 16, including those within the pilot group and the questionnaire respondents. Any questionnaire respondents who identify themselves as 15 years or younger or 21 years or older are outside the scope of this study.

Central to this research is the student’s right to privacy. As well as providing written assurance that all data gathered, through the online questionnaire and focus groups, will be anonymised (either through coding or through the use of pseudonyms) assurance will also be given verbally prior to the distribution of the questionnaire link and at the start of each focus group session. At the start of each focus group student participants will also be asked to sign a permissions form (see appendix one) to ensure they are aware of and agree to the conditions of the focus group interview, including audio-taping the session and the use of selective, anonymised verbatim quotes.

Māori consultation is also an important aspect of research within New Zealand/Aotearoa, particularly when the research involves tangata whenua or the indigenous population. Māori consultation was undertaken alongside the application for ethics approval and the University of Otago Ngāi Tahu Research Consultation Committee approved the research. The Research Committee specifically requested that ethnicity data be collected as part of the project (as per the 2006 census) and also that a copy of the research findings be shared with the Committee. The Nature 2.0 study will comply fully with both requests.

The researcher in the research

The researcher is integral within the research process. This is especially true in qualitative enquiry where the collection and analysis of data depends primarily on the human-as-instrument (Kvale & Brinkmann, 2009; Lincoln & Guba, 1985; Maykut & Morehouse, 1994). The influence and meaning which the researcher brings to the research–through the questions, the methodology, the data representation and analysis–is reflective of the researcher’s own understandings of and assumptions about the world. It was therefore essential that I, as the researcher, was able to recognise, reflect and respond to my own position within the Nature 2.0 study. Towards a fuller understanding of my own position
it is useful to address the ‘researcher in the research’ from three well documented perspectives: (a) flexibility - the researcher and the research method; (b) reflexivity - the researcher as self-aware; (c) objectivity - the researcher as neutral agent/automaton?

(a) Flexibility: the researcher and the research method
This study employs a mixed methodological approach; this is appropriate within such a complex and largely unbounded research environment. Significantly, mixed methods research requires a high degree of flexibility, not only in how the research is undertaken (both quantitative and qualitative data gathering and analysis techniques are integral) but also in terms of the researcher as human research instrument. While it is appropriate to recognise the value of flexibility within the study design it is also important to recognise the need for human flexibility throughout the entire research process; formulating and reformulating hypotheses, interpreting and re-interpreting data. Flexibility was thus an important attribute or researcher skill as much as it was a feature of the research design.

(b) Reflexivity: the researcher as self-aware
The need to be flexible within the research process is just one aspect of wider self-awareness or what is often described as researcher reflexivity. To be self-analytical, to critically recognise the self within the research process and to explicitly document this as part of the research process is vital if unwitting bias and erroneous assumptions are to be made visible and their influence kept to a minimum. Kvale and Brinkmann (2009) refer to this as ‘reflexive objectivity’, where the responsibility is on the researcher to understand “unavoidable prejudices and write about them whenever it seems called for in relation to the research project” (p.242). As Crotty (1998) suggests:

Without unpacking these assumptions [about human knowledge and about realities encountered in our human world] and clarifying them, no one… can really divine what our research has been or what it is now saying (p.17).

I acknowledge my identity as an educated white middle-aged female from Scotland. I am a New Zealander but my accent marks me as an immigrant to Aotearoa. I have young adult daughters who were raised and schooled in Dunedin; I am close in one sense to the study population, some of whom attended the same schools and clubs as my own daughters. I am comfortable around young people as a result of my experience as a parent.
I am also aware of the sources of my research interest and what drives this interest. I have always felt a strong connection with nature and grew up in a time in the UK when children were afforded more physical freedom for outdoor unstructured play. My move to New Zealand as an adult was informed, in part at least, by the physical beauty of the place and the perceived lack of human influence on large parts of the landscape (although sadly, particularly in large parts of the South Island, this claim can no longer be made).

In addition to this enduring respect for nature there are two key drivers for my particular study interest. Firstly, as an academic librarian, I am fully aware of the power and influence of new media on what is becoming a rapidly changing world. Like many, I am ambivalent about this process of change; technology has taken us into uncertain times while it appears that it will be technology that will provide the solutions to a more certain future. So I am both an advocate and a critic of the web.

The second and motivating factor for my interest has been the many conversations that I have had with my daughters and their friends. They are part of a small but growing number of young people who are beginning to question the role of technology in their lives. They—like the young people in this study project—have lived through the explosion of new technologies (Game boys, cellphones, Facebook, iPhones… the list is endless) which jostle for position in their ever-noisier and more crowded lives. It is these conversations that set me on this research journey and it is these conversations together with my own experiences and understandings of nature that I bring to this research. I am cognisant that my own experience is just that; a unique experience that I must set aside if I am to appreciate and adequately represent what I hear through the survey data.

(c) Objectivity: the researcher as neutral agent/automaton?

The need to unpack the researcher’s assumptions is fundamental to the research process. Importantly this does not imply that the researcher must first unpack, in order to neutralise these assumptions, divorcing the researcher from the subjective realities of his or her own life and the lives of the research participants. Nor does this need to unpack and clarify assumptions infer that objectivity of research (however desirable and elusive this may appear) is the Holy Grail. Rather, the researcher should and does move within and between objective/subjective poles at different times and to varying degrees, according to the design and purpose of the research. The researcher’s attitudes, values and interests,
like everyone else’s, are shaped by their socio-cultural environment and while it may be possible to gather neutral or ‘uncontaminated’ data, this misses the point:

The first and most important step… is to recognize the reflexive character of social research: that is to recognize that we are part of the social world we study. This is not a matter of methodological commitment; it is an existential fact. There is no way in which we can escape the social world in order to study it; nor, fortunately is that necessary (Hammersley & Atkinson, 2007, pp. 14-15).

The point then is not to neutralise the researcher’s role within the current research, but to recognise, reflect and respond to the subjective self and to chart this aspect of the research process as thoroughly and openly as possible.

2.3 Data collection

This section describes the data collection techniques used in this study. These include:

2.3.1 An online questionnaire with an embedded web searching activity;
2.3.2 Focus group interviews held with self-selected questionnaire respondents.

These study components are discussed in terms of the value and design of each element, the importance of testing (where possible) and the various challenges presented by each data gathering technique. The role of the researcher as research instrument is significant in qualitative research and this aspect is explored with reference to the focus groups.

2.3.1 Online questionnaire and web searching activity

This section examines four key aspects of the online questionnaire development:

a) Questionnaire context;
b) Questionnaire preparation and design including web searching activity;
c) Questionnaire testing with the pilot group;
d) Questionnaire deployment, value and focus group connection.

a) Questionnaire context

Before developing the online questionnaire, an extensive literature search was carried out to confirm whether any existing survey instrument might address the current study
interest. While a wide range of tools and indices have been developed to measure related interests on human connectedness with the environment or, less frequently, with nature there did not appear to be an instrument which might inform the current survey design. Even the more recent human-nature surveys which include questions related to technology, media or the digital environment fail to articulate the internet or the web as a discrete and independent component of interest within the research. For example, Pergams and Zaradic (2006) explore ‘average hours on the internet’ as part of their correlation study to understand declining interest in nature, however, ‘Internet hours’ are bundled with hours watching TV and video, playing video games and time spent at the movies. Where the internet or more usually computers are included in human-nature studies these tend to be treated as extensions of earlier electronic media, such as television or video (Kellert, 2002; Lee, 2011; Zaradic & Pergams, 2007). Alternatively, the research focus moves beyond the web into 3D virtual experiences (Levi & Kocher, 1999) or the futuristic potentials and challenges of robotic nature (Kahn, 2011). While this finding was affirming, highlighting a research gap, it also confirmed the need to develop a survey from scratch. A clear understanding of the research topic and the underlying theories which informed the Nature 2.0 study were therefore invaluable; these not only informed the methodological approach but also the particular design of the online questionnaire.

b) Questionnaire preparation and design including web searching activity

Designing a questionnaire which will produce meaningful results is no easy task. This challenge was compounded when, as in the current situation, the phenomenon under investigation has yet to be examined in the way proposed, namely using an online questionnaire. It was therefore important to adhere to the principles of good survey design which include having a clear understanding of what is to be measured. Only then is it possible to begin to develop questions which might produce meaningful responses (Moser & Kalton, 1971, p. 308). As Fowler (2009) points out:

A prerequisite to designing a good survey instrument is deciding what is to be measured. This may seem simple and self-evident, but it is a step that is often overlooked, to the detriment of the results (p.116).

---

15 Scales measure affinity, sensitivity, knowledge, literacy, values, connectedness, behaviours and more.
Taking a considered approach ensured a more robust survey design. This reflective process not only helped define and refine the content of the online questionnaire, it also drew attention to other challenging aspects of survey design, including length and the importance of well-positioned, simple, unambiguous questions (Moser & Kalton, 1971). These and other elements of the survey design are discussed throughout this chapter.

**Types of questions and position within the survey**

The questionnaire includes a combination of closed and open questions. Closed questions can be used to gather demographic information (for understanding the student characteristics) and to rank opinion within a continuum, building a limited profile of the student’s attitudes, behaviours or experiences. When standardised, these closed questions make it easier to analyse and compare the resulting data. Open questions, such as, ‘*What nature experiences do you think are limited by social media?*’ give the students greater freedom for interpreting and responding to the questions, unguided by the researcher. While open questions are typically more difficult to analyse they add important depth to understanding, particularly around complex issues, such as the concept of nature. In addition, May (2011, p. 111) makes the following observation which is particularly pertinent within this exploratory study:

> When situations are changing very quickly… open questions may prove the better form… as survey responses are increasingly used as a basis for historical research, open responses have the value of enabling researchers to explore raw data and to devise new coding categories (Social and Community Planning Research 1981: 7)

It is also possible to add value to select closed questions by including follow-up open questions (Fowler, 2009). For example, the closed question ‘*Is your family interested in nature?*’ (using a Likert measurement scale) is followed up with the supplementary open question ‘*I gave this response because…*’

Finding a balance between open and closed questions was an important consideration within the overall questionnaire design. Closed survey questions, including a pre-determined list of categories which limit the potential responses, make it possible to gain a baseline understanding of what the students’ think about nature but the limitations with this approach are obvious. By structuring questions in such a way that responses are limited to a predetermined suite the students are constrained as they must respond within
an established framework. Including open-ended questions within the questionnaire and also including a web-searching activity opens up feedback, allowing free thinking and the potential to move away from pre-suppositions, established framings and concepts.

With regard to the order of the questions within the survey, it was important not to introduce examples of nature experiences until after the students had been asked to describe ‘nature’, i.e. by providing words which they readily associate with this concept. This question sequencing avoids priming the students or giving them a prescribed frame of reference such as language and concepts derived from the literature or from the researcher’s own experience. The questions and the question sequence were also designed such that the overall questionnaire appeared non-threatening (beginning with simple questions) and also interesting; mixing up types and complexity of questions and including an online web-searching activity which includes a comic alien visit scenario.

**Web-searching activity**

A web activity—to identify ‘nature’ online—was embedded within the questionnaire. During the pilot testing students had been asked to select two nature sites, one which they liked and another they disliked. This question was later revised and, as shown in figure six, this became a more neutral scenario-type question in the final questionnaire.

![Image of an alien](image)

**Figure 6 Online survey question 17**

The <Google> link was designed to take the students directly to Google search where they could locate a social media site of their choice. Importantly, the second browser screen (displaying the search box) opens within the questionnaire itself. This contextualises the activity, maintaining a connection between the search activity and the,
as yet incomplete, questionnaire. The expectation was that the student would then cut and paste the relevant nature URL into the survey response box, together with a sentence about why this online representation is indicative of nature for them.

The benefit of including this practical exercise was that it opened up the possibilities for student responses to questions about nature, shifting the focus from what students say, to what students actually choose online. The activity also generated real-life examples of a range of online natures which, significantly, were selected by the students themselves. This web content then became available for analysis, both from the perspective of ‘natures online’ and also as this substantiates the information shared by the students. The risk with this exercise was that the students would find this activity too difficult or feel that it requires too much effort and not do as requested. It was also possible that the students might inadvertently quit out of the questionnaire, as they moved between the two browser windows, effectively leaving the survey before this was completed. No evidence could be found of this type of web-searching activity being embedded in any other survey instrument. It was therefore vital to pilot this exercise as early as possible.

c) Questionnaire testing with the pilot group

The questionnaire was piloted with 82 first-year Geography student volunteers, between May and June, 2012; an exercise which was highly successful. This made it possible to test both the design and content of the questionnaire with particular reference to: (a) language appropriateness, noting any ambiguity and confirming the use of simple, clear, non-prejudicial language; (b) question phrasing and sequencing, identifying any leading questions and ensuring the flow of the questionnaire (especially as this may influence whether or not the students choose to complete the survey) and also; (c) the students’ abilities to respond, i.e. the questions are meaningful to them and they have the experience and vocabulary to answer the questions asked. Finally, it was important (d) to assess the do-ability of the web-searching activity; whether this is sufficiently engaging, achievable and revealing or whether it discourages the students from completing the questionnaire, by being too difficult or distracting and possibly even leading to ‘rage quit.’

While there was overwhelming approval for the design and overall do-ability of the questionnaire from the pilot group, a number of content-related recommendations were noted and addressed. These included: clarifying selected language; improving the leader
content by introducing the various survey sections; removing any duplication/merging nature defining questions and most significantly; re-doing the nature web activity to make this both more do-able for the students and more meaningful within the research.

d) Questionnaire deployment, value and focus group connection

As discussed in the previous section, it was important to establish a connection with the University gatekeepers; those teachers whose students were to be surveyed. This preparatory activity made it possible to build rapport such that the questionnaire could be presented directly to students in each academic Division with the support of their teachers. Timing was also an important consideration during this planning phase as it was important to deploy the questionnaire at a time which was convenient to both the teachers and their students. The decision to make the questionnaire available early in semester one (2013) was made after consultation with each of the four University teachers.\footnote{Semester one starts at the end of February, coinciding with the end of summer in New Zealand.}

The questionnaire was promoted to the students at the start of one of their lectures and then made available via Blackboard. Any researcher influence was therefore limited to how the questionnaire was presented and the connection that was made with the students such that they were interested enough in doing the survey and also that they felt able to respond in a way that closely reflected what they think, rather than appealing to what they think the researcher (or their teacher) hoped to hear.

The questionnaire responses provided the study with both structured and semi-structured data; they provided demographic information about the study population and also a foundation for understanding the students’ ideas about nature. The nature sites which were selected and shared by the students also informed the content which was developed for the focus groups, including any nature images which informed the discussions.

Focus group connection

In an attempt to address some of the limitations of the structured questionnaire, it was useful to combine this disengaged approach with a more engaged, discussion-based approach. The questionnaire included an invitation to participate in focus groups and this second qualitative phase made it possible to probe further for more meaningful
understanding of the information shared. As May (2011) notes, “[p]robing can yield factual information that would not be readily given by a respondent in answer to the initial question” (p.110).

2.3.2 Focus group interviews

The upcoming section examines five aspects of the focus group interview: (a) value of the group interview; (b) researcher as instrument; (c) interview questions; (d) recording the interview; and (e) meeting with students.

a) Value of the group interview

The group interview provided an opportunity to explore the students’ thoughts about nature in more depth (albeit the thoughts of the more enthusiastic students who agreed to participate in a follow-up discussion). As O’Leary (2004) describes, group interviews provide an opportunity to “establish rapport, build trust, motivate [the] students, clarify questions, read non-verbal cues, and probe appropriately” (p. 154). There are, of course, both benefits and challenges associated with focus groups. The downside is that the participants may be unable or unwilling to share what they actually think (despite having volunteered to be interviewed) and feel compelled to agree with the majority opinion or the dominant voice. Benney and Hughes (1984) describe how “every conversation has its own balance of revelation and concealment of thoughts and intentions…” (p. 216) and it may be that the group setting encourages some ideas rather than others. This situation can be ameliorated by how the facilitator manages and encourages the participants. Conversely, a real benefit of focus group interactions is that ideas can ‘bounce around,’ possibly even stimulate discussion which would otherwise be difficult to generate.

In the current study context, the questions which were directed at the focus group participants were kept intentionally broad, as interest is in how the students respond to the topics of nature and social media in general terms; what ideas emerge in conversation.

b) Researcher as instrument

Within a focus group situation, the role of the researcher as interviewer and facilitator becomes significant. As Fowler (2009) notes, “[b]ecause of the central role they play in data collection, interviewers have a great deal of potential for influencing the quality of
data they collect” (p.12). Age, education and employment situation positions the facilitator apart from the interviewees and closer to figures of authority, such as a parent or teacher. As such, the students-as-interviewees were unlikely to say things that they would freely share with their peers. This does not mean that what the students chose to share was wrong, but rather that it is acknowledged that the interview situation is likely to produce a different perspective from that represented in another situation. As May (2011) points out, our actions and opinions are “modified according to the social situation in which we find ourselves” (p. 126).

c) Interview questions
To ensure successful focus group interviews it was important that the students could respond to questions of their own volition and from their existing knowledge base. Kvale and Brinman (2009) suggest that (standardised) questions “must be modified to fit the vocabulary, the educational background, and the comprehension of each subject” (p.31). Whether the questions were standardised or open it was vital that the students understood what they are being asked. Kahn and Cannell (1968) identify these necessary conditions as accessibility and cognition. It was also important that the students felt motivated to respond; the challenge was how to motivate and encourage the students to contribute and to maintain their interest and participation throughout the session. A further point about responding to interview questions relates to the ‘truth’ of what the students were prepared to share. It was essential to clarify, from the outset, that there were no right or wrong answers and that all responses were valid. The important thing was to encourage the students to share how they order their worlds, how they frame their conceptualisations and their relationships with nature within an online/offline world.

d) Recording the interview
There are a number of aspects to consider when capturing interview data. Most importantly, there is the choice of recording device, which can act either as an inhibitor or an enabler during the interview process. An audio-recorder was used to capture the information shared during the focus groups. This relatively discrete and unobtrusive device made it easy to record the students’ voices, while also allowing the freedom to include other meaningful observations, as appropriate. Once recorded, the interviews were transcribed and analysed in conjunction with the other information which was gathered. While the interview transcription was time consuming, this lengthy process
helped guard against anticipating or assuming certain words or concepts, towards enhancing meaning or to contextualise responses (this can be a danger when note-taking).

**e) Meeting with students**

The design of the data gathering process means that potential focus group participants were contacted after the online questionnaire responses had been collated and a preliminary analysis of the data carried out. Approaching the focus group interviews with some advance, contextual understanding of the students, in relation to nature, made it possible to probe further within the focus groups; to build towards better understanding of what the students had already shared through the questionnaire. It is important to note that any responses which were shared online are confidential, so while these informed the focus group discussions, any ideas were referenced at a general level only. Those students who expressed interest in talking further about nature and social media were contacted directly. Any arrangements, such as where and when to meet, were then made in consultation with the students. The plan was also to be as flexible as possible about any venues, to ensure maximum comfort and convenience for the interviewees.

### 2.4 Data analysis

As discussed throughout this chapter, this study uses a mixed methodological approach. While using both quantitative and qualitative survey techniques adds complexity to the data analysis this also has the potential to add depth and richness to any findings. This section outlines the data analysis processes which will be applied and also the challenges associated with the different information types gathered, together with observations about the credibility and validity of any findings from this data:

- **2.4.1 Questionnaire responses**: structured and semi-structured/free-text comments;
- **2.4.2 Online nature selections**: nature content on social media sites;
- **2.4.3 Focus group comments**: semi-structured/more open comments, observations;
- **2.4.4 Interpretation, credibility and value** of study findings.

#### 2.4.1 Questionnaire responses

The questionnaire was developed in *SelectSurvey*, an online survey tool which is freely available to students at the University. As outlined in a previous section, this preliminary
questionnaire was pre-tested with a group of students and the data gathered was used to inform the development of the questionnaire. The final version of the online questionnaire was then deployed to students in the four University Divisions. The survey questions (shown in full in appendix two) fall into five main sections and include a combination of yes/no, attitudinal and free-text responses. The main survey themes are:

1. **About you/demographic** (q.1-4): student gender, age, ethnicity and family home;
2. **You and social media** (q.5-7): student access to, time spent and activities undertaken on social media;
3. **You and nature** (q.8-13): nature word associations, questions about nature contact preference, nature-related experiences and family interest in nature;
4. **Nature and social media** (q.14-16): awareness of nature on social media and perceived benefits and dangers of online nature experiences;
5. **Nature 2.0** (question 17): web-searching activity. Online ‘natures’ which approximates the students’ own idea of the natural world. Students were also asked to complete the sentence, *‘This is nature because…’*

The responses in the completed questionnaires will be downloaded into a spreadsheet for preliminary analysis. The structured data, concerning information about the students’ gender, age, ethnicity and family home and also interest and engagement with both social media and nature (gathered via attitudinal scales) will be used to build a baseline picture of the student respondents. This nominal and ordinal data will be converted to numerical indices and the anonymised information will be represented in both textual and graphical format, such that trends and patterns can be more easily identified.

The semi-structured responses to questions about nature and social media will include more complex, textual data which cannot be reduced to statistical format. These free-text student responses will be broadly themed and used to develop a coding structure for subsequent analysis, together with other qualitative data captured during the focus groups. These more open free-text questionnaire responses will also inform the questions which will be developed for the focus group interviews. Table three shows the structured and semi-structured question/response types, together with the statistical (nominal), statistical (ordinal), free-text and audio-visual data types gathered through the online questionnaire:
### Table 3 Data collection: online questionnaire with web activity

<table>
<thead>
<tr>
<th>Question/response type</th>
<th>Level of measurement</th>
<th>Data gathered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured/closed</td>
<td>Factual e.g. gender, ethnicity</td>
<td>statistical (nominal)</td>
</tr>
<tr>
<td></td>
<td>Attitudinal/behavioural using Likert scale e.g. ‘Is your family interested in nature?’</td>
<td>statistical (ordinal)</td>
</tr>
<tr>
<td>Semi-structured/(semi) open</td>
<td>Attitudinal/behavioural in support of earlier structured response e.g. other</td>
<td>free-text</td>
</tr>
<tr>
<td></td>
<td>Attitudinal e.g. ‘This is nature because…?’</td>
<td>free-text</td>
</tr>
<tr>
<td></td>
<td>Attitudinal/behavioural i.e. ‘Find a nature website or app…’ [see following section]</td>
<td>audio-visual (social media)</td>
</tr>
</tbody>
</table>

#### 2.4.2 Online nature selections

In addition to questions about nature and social media the students were asked to select at least one interactive nature site which, for them, conveys an adequate representation of the natural world. The web-searching activity will provide invaluable data about the students’ ideas about nature, as realised online. In addition, the social media sites captured by the students will provide a selection of online nature representations which can be analysed. Comparing and coding this content is complex, but it also provides an important dimension and rich source of data to the research. The sections below examine some of the challenges which must be managed when analysing website content:

- **Website content challenges**: number, skewing and fluidity of online sites;
- **Website content coding**: open coding, first impression as web content, time spent on webpages and content theme reliability and consistency.

#### Website content challenges

The directions for this website retrieval activity are framed as neutrally as possible and the students are free to select any interactive site (using a Google search link) which most closely aligns to their ideas of nature. The open design of this activity—nature themes which are identified and discussed in chapter three underpin but neither guide nor frame

---

17 The discussion on content challenges and content coding includes comment on websites, including social media; these observations are equally applicable to non-interactive websites and Web 2.0.
the themes which may emerge–is appropriate within this relatively new research context. Open design, within the web environment can also, however, prove challenging, as Kim, Jeong and Lee (2010) discuss in their study of social Web sites. While the authors’ particular interest in four-way taxonomies of social Web sites is beyond the focus of the current study, they usefully point to challenges which are pertinent. The authors suggest those aiming to identify all elements of social Web sites, “run the risk of giving a rather skewed view of the social Web sites, and also of [these sites] quickly becoming obsolete… [that the] sheer number of social Web sites makes it a challenge to classify them…and [that most] social Web sites are moving targets, in terms the number of users, user demographics, features provided, business strategies, etc” (p.216). Number, skewing and fluidity of social Web sites (or social media sites) are also considerations within the current Nature 2.0 study and these challenges are addressed below.

**Number, skewing and fluidity of websites**

A limited number of students will be surveyed and each student will be required to select an interactive nature website. So while it could be argued that the respondents may skew the nature reality the number of sites to be classified will be manageable. The issue of population bias, in terms of numbers and how university students may feel obliged to respond has been discussed earlier in this chapter. It is worth adding here that not only is nature never defined anywhere in the questionnaire but the manner in which the web retrieval question is posed (involving an alien and light humour) together with the speed of this activity (little time for deep reflection) should encourage a reasonable selection of nature sites which reflect, in part at least, the students’ ideas about the natural world.

The other significant challenge for this website activity is the fluidity of the sites. Changing content, including rolling images and dynamic text are routine on many websites; in fact, this fluidity of content is one of the hallmarks of social media. And beyond these content changes the sites themselves may migrate (URLs change) or even disappear altogether. To ensure that the student-selected sites are retained (rather than later iterations of these sites), in addition to capturing the URLs within the questionnaire, screenshots will be taken of all selections as quickly as possible. Retaining these websites-

---

18 Social Web sites are used as an alternative catch-all phrase, approximating social media sites.
as-images makes it possible to return to each site, confident that the online nature is, if not totally unchanged—an impossibility within this dynamic environment—then at least within the same ‘spirit’ as the original ‘nature’ which was selected.

**Website content coding**

In his article on lay people’s ideas about the natural world, Buijs (2009a) outlines the process of coding images of nature:

> The analysis of the data is done in three steps, including substantive and theoretical coding (Strauss and Corbin 1990) and the construction of ‘ideal types’ of images of nature (p.421-2).

For Buijs, the data analysis meant first transcribing and coding ideas about nature which had been captured in two earlier qualitative studies before translating these substantive, largely descriptive, codes into more theoretical codes for analysis. While transcribing, describing and analysing interview data is not the same as capturing, describing and analysing interactive nature websites (in conjunction with other quantitative and qualitative data), the research steps associated with the data analyses in both instances are surprisingly similar. Furthermore, Buijs’ research on lay people’s images of nature and the current study into young adults’ concepts of nature both endeavour to understand how ordinary people think about nature through information shared.

At this point it could be suggested that research associated with qualitative processes (capturing and analysing semi-structured interview data) cannot, or should not, be compared with a questionnaire-based nature website gathering activity. In practice, however, both research activities are similarly open. While this may at first appear nonsensical (using a questionnaire to gather ideas about nature is more typically associated with closed quantitative research), in this particular instance students are asked to choose an interactive nature website and as this questionnaire is online this selection is limited only by each student’s own interests and imagination. Unlike other visions of nature studies, including those which are quantitative (de Groot & van den Born, 2003; Verbrugge, van den Born, & Lenders, 2013) and qualitative (Buijs, 2009a; van den Born, 2008), the question of what nature might look like neither includes nor is constrained by pre-selected images or a pre-defined list of options. Instead, the survey responses to the
question, ‘what is nature’ are both unguided and unlimited. This free association of ideas, is as van den Born (2008) suggests, generally associated with qualitative research (p.89):

…three methods for the qualitative study of visions of nature may be distinguished. First, we may trigger a process of free associations on the part of the students with a single term or concept, for example by asking ‘what is nature? The open website gathering component of this research is revisited throughout this study. Within the current context, what matters is that the data analysis process here has much in common with qualitative research, in particular with grounded theory methods which, as noted by Charmaz (2002), “keep researchers close to their gathered data rather than to what they may have previously assumed or wished was the case” (p.675). As indicated above, the interactive nature websites will be gathered in an open unguided manner and the themes used to describe these sites will emerge from the sites which are chosen. The process of theming the nature websites and also considerations associated with this process are outlined in the following three sections: (a) first impression as website content; (b) time spent on webpages - first impressions matter; (c) eligibility and consistency of website content themes.

(a) First impression as content
It is important to establish the key elements which will define the nature content and also the boundaries which will help contain this zone of interest. Selecting particular website elements for the purpose of analysis will always be contestable and the boundaries around these defining elements will inevitably be somewhat porous. However, it is crucial to establish clear, baseline criteria which will bring a degree of consistency to the assessment of nature content on the sites which are selected. Two factors, in particular, inform the website content criteria which is applied. Firstly, within this study website content is restricted to the first page view only (as this is likely to appear on the user’s initial screen), i.e. the immediate first impression, prior to scrolling or clicking beyond the first page. The first impression is what the viewer sees first (and may well have searched for) and the content is routinely reflective of the overall content of the website. Three core components are generally evident in the first part of any online site, including: (1) the website title and subtitle; (2) the main image/s, e.g. photo or video entry screen; (3) the lead content or most prominent visible text. Significantly, when the main image is a static image or photo the content conveyed is immediately apparent. This may not be the case.
with audio-visual material, such as a video or sound recording. So while the first impression excludes clicking beyond the first webpage it may be necessary to click on the video or sound recording to know what nature idea is conveyed. This is clicking for content, to know what nature is represented, rather than clicking to related content.

It is important to reiterate at this point that the website content is likely to change, particularly on social media sites, such that the image which is coded may not be the image which was selected earlier by the student. That said, the ‘flavour’ of any particular website, as represented through changing images and other content, is generally retained and while these images may change they repeat a similar pattern. The value in capturing this first impression information as screenshot (for later comparison and assessment)–in conjunction with other website information–helps guard against any future misrepresentation of the sites selected on the basis of first impression.

(b) Time spent on webpages: first impressions matter

Of course, website content can reasonably be argued to extend well beyond the first impression of the site (title, image and lead text) and viewing and using more of the website functionality will certainly bring the user into contact with considerably more detail (about nature) than the first impression. How people look at websites was not tested in the current study, however much has been written on this topic and the evidence suggests that for many web users, superficially ‘browsing’ or ‘grazing’ sites is routine. Whether computer scientists and commercial web designers are examining ‘time spent on web pages’ (Hofgesang, 2006), ‘dwell times on a Web page’ or ‘screen-and-glean’ (C. Liu, White, & Dumais, 2010), the evidence suggests that not only is web browsing typically rapid (Kalbach, 2007) but that “users spend a very short period of time [on] most pages” (Cockburn & McKenzie, 2001, p. 920). In his book on web design, Plumley (2011) suggests that “average website visitors take just 6-8 seconds before deciding whether or not to stay on a site…” (p.93). Other commentators suggest similarly low webpage ‘view times’, ranging from just 10 - 33 seconds (Gassée & Filloux, 2009; Haile, 2014; Soskey, 2014) to around one to two minutes (Nielsen, 2011; Nielsen & Loranger, 2006). While precise time spent on webpages may be endlessly disputed what is clear is that web users are likely to be viewing webpage content for short periods, prompting the second imperative which informed the website assessment criteria, i.e. first impressions matter.
(c) Reliability and consistency of website content themes

Significantly, the student-selected websites will not be forced into any existing schema, but instead will be coded for nature content “with categories emerging from the data rather than a priori” (Pointon, 2013, p. 5). After this initial coding the preliminary categories will be shared with those who have an interest in or oversight of this research activity such that there is shared agreement around the reliability and consistency of the categories which are assigned. While Cresswell and Plano Clark (2011) suggest that reliability plays only a minor role in qualitative research, this is significant in terms of the consistency of the coding which is applied to the website content. In addition to checking the coding consistency with others, these codes will also be re-examined after a period of absence. Personal and physical distancing from the coding makes it possible to take a more critical approach when re-visiting the sites and the coding which has been applied. These various processes of preliminary, careful coding, combined with shared agreement about the codes and subsequently critically reviewing these decisions, build towards reliability and consistency of the website content themes which are applied.

2.4.3 Focus group comments

As discussed earlier in this chapter, qualitative research has a number of defining characteristics, all of which impact on the current data analysis. The role of the researcher as research instrument is highly significant within the research, impacting on what data are valued and how this information is collected, interpreted, analysed and presented. In addition, qualitative data tend to be verbal or non-textual. This can present particular challenges with transcription and interpretation and requires a rational and interpretative approach. Finally, the outcomes of qualitative research may be “the generation of further questions and conjectures, rather than the verification of predicted relationships or outcomes” (Gorman, Shep, Clayton, & Clayton, 2005, p. 7). These, and other aspects of qualitative research described throughout this section, define the processes and activities around the analysis and interpretation of the information gathered in the focus groups.

Focus group outline: themes, questions and safe use of responses

As outlined earlier, the online survey questions are grouped into five overarching themes: (1) about you/demographic; (2) you and social media; (3) you and nature; (4) nature and social media; (5) Nature 2.0–students were asked to select an interactive site which
includes a nature representation which approximates their own ideas about nature. These five themes informed the three focus group themes: (1) growing up, activities and computer use; (2) ideas about nature; (3) nature and social media. The focus group themes and semi-structured questions are used to guide, but importantly not constrain the discussions about social media and nature, potentially adding depth and colour to the student responses shared through the questionnaire. This focus group outline–focus group themes, questions and also introductions–is shown in appendix three.

It is important to reassert at this point that the focus group comments will be used to support the findings from the online questionnaire, in particular the nature website content and free-text comments shared. This Nature 2.0 study effectively reverses the approach of Liu and Lin’s (2013) study on environmental worldviews (a combination of ideas about nature and human-nature relationships). They also use a mixed methodological approach and their observations are pertinent:

Due to the distinct nature of the two methodologies [questionnaire responses versus interview results], it was virtually impossible to match the two data-sets. Hence, the questionnaire responses were selected based on their relevance to the interview results and thus acted as a supplementary data source in the study (p.6).

In the current Nature 2.0 study, it is the focus group comments, which act as a supplementary data source to the online survey responses, in particular the results of the nature website gathering activity.

**Focus group comments: analysis and linking**

Following each focus group, all verbal and non-textual data was transcribed into readable format. There was some initial categorising of the data (into broad themes) as the spoken language was converted into written text. At this stage the categories which were applied were still very general, based on natural language, and still very close to the original data. Goodrick (2008) calls this “a form of quanticising qualitative information; keeping words and numbers together so that meaning is retained” (slide 17). She describes this analytic, quality criteria as “structured, accurate, explicit and deductive” (*ibid.*). This information was then transferred into a spreadsheet for further coding and analysis.
The transcription and transfer of focus group data into an environment where this information can be analysed, is a lengthy but important phase of the research. The benefit of handling the data in this way is that by repeatedly reading and reviewing the information which was shared by the focus group participants, the researcher is well positioned to identify and respond to any themes and patterns, as these emerge. The process of transcription made it easier to identify preliminary concepts or categories which could then be used to describe the ideas as these become visible through the words and phrases used by the focus group participants. As Pickard (2007, p. 90) describes, this preliminary categorisation not only informs the data analysis, but can also highlight ‘salient issues’ which may need to be re-examined later in the research process. Maykut and Morehouse (1994) similarly suggest that “[i]mportant leads are identified in the early phases of data analysis and pursued by asking new questions, observing new situations or previous situations with a slightly different lens…” (p.44)

As a result of the chosen methodological approach, the focus group data was analysed and used to support information gathered through the other data collection techniques, namely via the online questionnaire and the web-searching activity, in particular. As described, the questionnaire responses provide an initial framework for categorising the focus group data. The focus group data then build on these initial categories while also attending to emerging relationships between, and connections with, the other textual and audio-visual data which were gathered.

2.4.4 Interpretation and value of study findings

Transcribing, transferring and preliminary theming of the data gathered via the questionnaire and the focus groups are important phases within the data analysis process. The data, now broadly themed using a combination of questionnaire/web-informed categories and students’ own words and phrases (still strongly associated with the context within which the data were originally captured), begin to reveal a picture of the phenomena under study. These initial data handling and descriptive stages, however, could only take the process of analysis so far. To interpret the data, to build meaning and understanding it was important to move beyond these largely mechanistic or process-driven phases and to analyse the data gathered.
Extracting the focus group and questionnaire data (including the student-selected nature websites) from the disparate contexts in which this information was gathered and broadly themed and re-contextualising these various data types together, within a single research space, is significant. This enables the data to be re-examined and to be collectively categorised at a higher level of abstraction. Importantly, this further distilling of the data elevates it to a more theoretical level, enabling understanding within a wider conceptual framework. The research effectively shifts from descriptive, thematic analysis of broad categories to the generation and analysis of more abstract concepts or coded units of meaning. As Dey (1993) suggests, “…the underlying consideration should be the relevant ‘units of meaning’ which is conveyed by content rather than form” (p.115).

Moving from form to content, from ideas to researcher-defined codes and aligning this process with theory (as both research-informing and theory-generating) enables the researcher to more rigorously interrogate and make sense of the data. Charmaz (2006) emphasises the value of this data coding in the analysis process, “through coding you define what is happening in the data and begin to grapple with what it means” (p.46).

Credibility and value of study findings
It is paramount that all aspects of the research process—the research design, the collection, presentation, analysis and interpretation of the data—is handled such that the research and any findings are believable. This research credibility, i.e. “the extent to which an account accurately represents the social phenomenon to which it refers… the degree to which the research provides a true picture of the situation and/or people being studied” (Gibbs, 2007, p. 152) hinges on the quality of the research which has been undertaken. This includes the capability of the researcher, the appropriateness of the methodology and importantly, the ability “to elicit belief” (O’Leary, 2004, p. 56).

As outlined in this chapter, a number of strategies were adopted throughout this Nature 2.0 study to ensure the credibility of the research and the trustworthiness or dependability of any findings. These include the use of multiple methods and the triangulation of techniques, self-reflection on the subjective self and the confirmability of research findings and importantly, providing a comprehensive road map and audit trail, recording a clear chain of documentation and evidence upon which any findings may be based. In addition, strategies which address the dependability of the particular research method will
also be incorporated and reported. For example, pilot testing the online questionnaire to ensure the usefulness and value of responses.

In terms of the limitations of the data and inferences which may be drawn from this study, the mixed methodological approach means that any findings cannot be generalised to the wider population. However, as an indicator of a given social situation, the consistency and dependability of these findings (as supported by multiple data collection and analysis activities) may enable findings to be transferable to the wider context.

Finally, it is important to reiterate that while the various data analysis phases outlined in this chapter have been represented sequentially the data analysis process, particularly within mixed methodological research, is seldom straightforward and rarely linear in practice. The process is, as Basit (2003) points out, “…more a dynamic, intuitive and creative process of inductive reasoning, thinking and theorising” (p.143).

As outlined, the aim of this Nature 2.0 study is to explore representations of nature and young adults’ conceptualisations of nature, as realised on Web 2.0. This aim is achieved through the survey activities (online questionnaire with embedded web-searching activity and focus group interviews), supported by research drawn from a variety of disciplines, as discussed throughout this chapter and also outlined in chapter one. Before attending to the empirical component within this Nature 2.0 study (this is the subject of Part III), it is important to first identify and discuss the various, at times overlapping, research interests and considerations associated with nature as representation and conceptualisations of nature. These topics are the focus of upcoming chapter three (nature as representation) and chapter four (conceptualisations of nature). Together with chapter five (which examines the new media environment), these three chapters make up the upcoming section or Part II of this Nature 2.0 study.
CHAPTER 3

NATURE AS REPRESENTATION

3.1 Introduction

To contextualise understanding of the first part of this Nature 2.0 study this chapter provides an overview of the enduring and also more recent dominant cultural views of nature which have been and which continue to be represented through a variety of media. Notably, this overview examines how the natural world has been historically represented through Western art and literature and also how nature has been represented in mass media, primarily on-screen. In summary, this chapter outlines five media-ted\textsuperscript{20} cultural representations of nature which are foregrounded and theorised in human-nature studies.

The three historic and enduring cultural representations of the natural world include nature as \textit{Arcadia}, \textit{wilderness} and as \textit{resource}. These representations are of interest within social and cultural history where they have been richly described and theorised. These historic nature representations are also the standard reference points in many studies which address the human-nature connection, routinely appearing in surveys, scorecards and pictures where they are used to categorise different human responses to nature (whether these be visions, images or some other outlook). It is argued here that two additional nature representations, as \textit{real} and also the double-sided nature as \textit{risk} (either to humans or at risk from humans) have been enabled and also risen to prominence in the media. Nature as real and risk have also commanded attention, particularly from those undertaking human-nature research in communication and mass media studies. These three + two nature framings–there appears to be no evidence of research which combines the five different nature representations within a single study–will be used to contextualise and bring meaning to the online natures which are selected by the students who respond to the questionnaire. Once gathered these online natures will be analysed with reference to the aforementioned documented cultural representations of nature. Only

\textsuperscript{20} Media-ted is used in place of mediated to assert the significance of ‘media’ as the mediating lens.
then will it be possible to make observations about the potential for, or the reality of, changing cultural representations and also conceptualisations of nature. This chapter is presented in three sections:

(I) **Enduring cultural nature frames**: Revisiting the historic Arcadian and wilderness representations which initially appeared on canvas and in print. This section highlights the key components and deep roots of these idealised natures which are so much a part of the Western cultural landscape that their significance and import is rarely challenged (including whether these ideas remain relevant today). This section also articulates the most pervasive of nature framings in Western history and culture (extending well beyond representation), i.e. nature as resource. These three iconic nature representations are not just significant; they are part of the Anglo-European cultural DNA. Section I responds to research question one.

(II) **Mass media**: Introducing the key elements of mass media technologies, in particular television and film. Television is a game changer, in terms of how nature is packaged and framed and also the reach of these media-ted representations, now to mass audiences. This discussion on *mass media* (and why they matter) sets the scene for the later discussion on *new media* and the web (in chapter five); another significant mediating technology and significant component within this Nature 2.0 study.

(III) **Mass media-ted cultural nature frames**: Mass media have promoted and continue to promote nature as Arcadia, wilderness and resource, particularly on-screen. Television has also enabled and promoted two additional nature frames, i.e. nature as real and as risk. In this section, the three historic natures are revisited, as they now appear on-screen (in association with TV drama and advertising). The more recent media-enabled natures (as real and as risk) are also discussed in terms of their particular genesis and the TV genres with which each nature can be most strongly associated (namely documentary and news). Section III responds to research question two.

As outlined in chapter one, this review of the literature moves between academic disciplines and blurs research boundaries. As a result, a variety of theoretical approaches from different disciplines will be evident throughout the chapter. For example, cultural historians address changing representations of nature in art and literature, media scholars
address the effects of mass media and social theorists reflect on the various contexts in which nature representations are generated and shared. This re-presentation of the literature is selective but appropriate within this cross-disciplinary research.

Section I: Enduring cultural nature frames

Mediated representations of nature are not new; humans have engaged with an abstract nature for as long as they have communicated. Upcoming sections 3.2 and 3.3 examine the genesis and key components of two nature representations, as Arcadian pastoral (morphing into the picturesque) and as romantic wilderness; two significant and enduring—and ultimately entangled—nature ideals which have their beginnings in early Western poetry, prose and painting. These cultural framings of nature, together with nature as functional resource (this is the subject of 3.4) continue to be represented in the modern world, potentially informing contemporary conceptualisations of nature. To present a thorough history of these nature ideas and ideals would, of course, be a Herculean task and one which is well beyond the scope of this Nature 2.0 study. The following sections therefore present an Anglo-centric snapshot or insight into the genesis, defining elements and theories associated with the Arcadian pastoral and romantic wilderness ideals (which have been evident in Western art and literature for centuries) and also nature as resource; a more pervasive and overtly exploitative representation which was and for some at least continues to be the dominant social paradigm in the West.

3.2 Arcadian pastoral and the picturesque

3.2.1 From the Arcadian pastoral to the English picturesque

Nature and the poetry of the ancients

In the third century BC, Theocritus wrote a series of poems based on Sicilian shepherd’s song competitions known as the Idylls of Theocritus. At the time of writing Theocritus was a scholar in the city of Alexandria, a long way from his native Sicily. In writing these poems he evoked an imaginary, idealised vision which celebrated the “simplicity of life in contact with nature” (Gifford, 2012, p. 15). The Idylls of Theocritus are among the

---

21 Cave paintings are the oldest still surviving visual expressions of abstract nature.
earliest literary representations of the idyllic, a stylistic convention which eulogises the natural world and human-nature relations. Poems within the idyllic, pastoral tradition were notably laden with metaphorical symbolism (Scoular, 1965), for example, season emblems, “depict Spring as feminine and flower laden, while Summer appears as a youthful, vigorous man bearing fruits” (Spencer, 1973, p. 139). Within the current study context, what is significant about the classical poetic tradition is the way in which the natural world is consistently and richly represented in the descriptions of landscape which is “characterised by fertility, abundance and the absence of threats” (Andrews, 2009, p. 85). Idealised, pastoral evocations are contrasted with the turbulence of city life; the idyllic world is stable, the climate ideal and springtime is (frequently) eternal.

The idyllic or pastoral style was to reappear again, two centuries later, in the Eclogues and Georgics of the Roman poet, Virgil. Like Theocritus before him, Virgil chose to represent the shepherd song competitions (in Eclogues). He also, in the Georgics, addressed more mundane matters writing what was effectively a guide to farming, albeit a highly lyrical, idealised guide where rural labour is a source of pleasure and the heroic farmer works in harmony with nature. In the Eclogues, Virgil also introduces the mythical concept of Arcadia, inserting the idea of distance (of both time and space) into the pastoral vision. Virgil located the Eclogues:

…in ‘the humdrum Arcadia’ of the Peloponnesus peninsula of Greece. Arcadia is significantly an alpine region that is cut off on all sides by other high mountains. It was the perfect location for a poetic paradise, a literary construct of a past Golden Age in which to retreat by linguistic idealisation (Gifford, 2012, p. 20).

This ‘literary distancing device’ established an imaginary place for an idealised world and, as Gifford points out, Arcadia became “the generic name for the location of all pastoral retreats” (p.19). The Arcadian vision is a powerful and recurring feature of the wider pastoral tradition and, significantly, it can be either forward looking to an idealised Utopian future or be associated with a restorative return to a classical or Edenic Golden Age (Scoular, 1965).

Nature and the Augustan poets
Artists, writers, architects and gardeners in seventeenth and eighteenth century Europe were influenced by the art and culture of ancient Greece and Rome, most notably, the
Arcadian tradition of the classical poets. Attending to the classical style was not, as suggested by Scoular (1965) however, simply about writing for a ‘cultivated audience’. Neoclassicism (the new classical style) coincided with what came to be known as the Age of Enlightenment or the Age of Reason, a period in European history when rational thought challenged existing cultural traditions and science (and the scientific method) confronted deeply-rooted religious beliefs and the authority of the Church. Within this context of significant social, economic and political upheaval classical, harmonious, orderly representations of the natural world were ideally suited to reinforcing an idealised, constrained religious and moral order. As suggested by poet, Andrew Marvell, writing at this time, “… all things are composed here, Like Nature, orderly and near” (*Upon Appleton House*, 1651, verse IV).

The orderly classical nature which upholds or even promotes existing social systems and practices is particularly evident in the writings of the English Augustan poets of the early eighteenth century (Lowenthal & Prince, 1965). Alexander Pope, in particular, epitomised writing from this period and his “selective reconstruction of reality,” like that of other neoclassical writers, reflected a very real concern for continued order (Gifford, 2012, p. 32). Order *through* nature is clearly evident in two oft cited lines from Pope’s (1711) poem, *An Essay on Criticism*: “Those rules of old discovered, not devised, Are nature still, but nature methodized.”

For the English poets of this period there was a further influence from Europe which heightened awareness of classical representations of the natural world as “the embodiment of perfection” (Messenger, 2009, p. 100), namely Italian landscape painting. And just as the classical Greek poets were influencing Renaissance landscape painting in Italy so too were these classical visual representations of nature to influence the literary traditions in Europe and England and her wider colonies. This cross-pollination of ideas, particularly between the verbal poet and the visual painter, is a tradition which is well documented (K. Clark, 1973). *Ut picture poesis*, literally ‘as is painting so is poetry’ describes a reciprocal relationship between the arts which extends as far back as ancient Greece and Rome (Spencer, 1973). It is worth noting, however, that while both the classical poet and the landscape artist aim to convey similar ‘emblematic truths’ about the natural world (Scoular, 1965) (and ideas flowed between the poet and the painter) the
idyllic, pastoral, Arcadian vision of nature had its genesis in the “poetry of the ancients” (Spencer, 1973, p. 21).

**Nature in art: landscape and the English picturesque**

Landscape painting is arguably the most recognisable and accessible early artistic form which foregrounds the natural world. It emerged as a discrete and autonomous art genre in seventeenth century Italy, largely coinciding with the “idealisation of the countryside” which accompanied the rapid growth of wealthy urban centres, such as Venice and Florence (Whyte, 2002, p. 58).

![Figure 7 Landscape with Shepherd by Lorrain (1644)](image)

The classical landscape style of the Renaissance was influenced by a number of artistic and literary forms, including early medieval paintings; a ‘landscape of symbols’ which used nature to convey a visual narrative about religion and God (K. Clark, 1949; A. R. Turner, 1966). Other influences included the realism painting from Northern Europe, in particular Dutch *landskip* painting (Crowley, 2011; Fitter, 1995) and also the lyrical, pastoral writing from ancient Greece and Rome. Artists, Claude Lorrain and the two Poussins (Nicolas and Gaspard) were the most influential in promoting the pastoral ideal. Lorrain’s *Landscape with Shepherds* (figure seven) shows the harmonious pastoral elements which typify the Arcadian landscape, including benign nature, shepherds and archaic classical ruins. Renaissance artists based their ideals of landscape on the direct study of nature, but like their forebears they also ‘improved upon’ nature, idealising the natural world to fit within the classical tradition; “the ‘real’ was less important than the ideal” (Spencer, 1973, p. 135).
The Grand Tour, Claude glass and the English picturesque

The realisation of the classical landscape in Italian painting coincided with a strong literary pastoral tradition in England. At the same time the institution of the Grand Tour brought increasing numbers of the British elite into direct contact with Italian Renaissance art. Travellers to Italy enthusiastically “bought up the works of Claude and other seventeenth-century Rome-based artists and took them back to Britain by the hundred” (Whyte, 2002, p. 89). Idealised Renaissance landscapes included all the familiar classical referents and these resonated with the early British travellers. As well as fuelling the poetic Augustan imagination the artworks added a powerful visual dimension to classical pastoral representations of the natural as well as the cultural world.

The Claude glass (figure eight) was used by wealthy English travellers who in the eighteenth century were beginning to tour parts of their own country, such as the Lake District. This small, slightly convex black mirror was designed to represent the immediate environment as a painting; literally to frame the landscape a la Claude. The early tourist would turn his or her back on the immediate scene which was then viewed through the Claude glass. All ‘non-essential’ visual elements would be excluded and the remaining framed and tinted landscape would appear ‘as a picture’, no larger than a postcard (Hooker, 1998). Framing “like a picture” or “as if by a painter” (Hays, 2004, p. 475) became known as the ‘picturesque,’ a word which, not surprisingly, derives from the Italian ‘pittoresco’ or the French ‘pictoresque’. The English embraced the concept of the picturesque which included at its core the pastoral/Arcadian ideal. For the English, however, the picturesque encapsulated not only the classical pastoral of ancient Rome but also the ‘elegant pastoral’ of England. So rather than Mediterranean nymphs and classical ruins, the pastoral now contained quintessentially (although still formulaic) English local elements, such as “slow-moving streams and wide expanses of meadowland studded with fine trees…” (Lowenthal & Prince, 1965, p. 191). As Defoe, writing of his tour through England and Wales in the late eighteenth century, notes:

…picturesque England is "all a planted garden...The inclos’d corn-fields made one grand parterre, the thick planted hedge rows, like a wilderness or labyrinth, divided in espaliers; the villages interspers'd...In a word, it was all nature, and yet look'd all like art’ (in Lowenthal & Prince, 1965, p. 192).
Defoe’s reference to eighteenth century England as a ‘planted garden’ is particularly apt. This was a period in English history when the landscape garden, as much as the painting or poem, came to epitomise the picturesque. Like the painters and writers before them, landscape gardeners such as Lancelot ‘Capability’ Brown and his successor, Humphry Repton, drew inspiration from the artistic landscapes of Claude and Poussin. Physical nature associated with large country estates was manipulated and reshaped according to the ancient, classical Arcadian ideal (Lowenthal & Prince, 1965).

The landscape gardens of Britain’s elite celebrated a particular, idealised vision of nature. This neoclassical vision not only expressed human dominion over nature but also dominion of selected humans within a particular political and economic environment. Using the natural world to inform about identity and social position within the wider society (including referents to class and wealth in Britain) is and arguably continues to be a key component and also criticism of the Arcadian pastoral.

3.2.2 Challenging the Arcadian pastoral and the Age of Sensibility

As writers on the pastoral argue (Buell, 1995; Marx, 1964; Williams, 1973) far from becoming irrelevant these idealised celebrations of the natural/rural world continue to hold sway in the imaginaries of Europe and other parts of the modern world. And as Buell (1995) further suggests, these imaginaries exist through ‘multiple frames.’ Gifford (2012) discusses these multiple frames in terms of functions of the pastoral as allegory, retreat and deception. These three functions (outlined below) are as pertinent today as they were for earlier pastoral representations of nature, as is evident in the later discussions on nature on-screen and also modern day conceptualisations of nature (discussed in chapter four):

**Pastoral as allegory**: Idyllic nature is used to convey certain literary or metaphorical meanings. A much cited example is Gainsborough’s painting of *Mr and Mrs Robert Andrews* (1749) which is painted ‘in a bath of Claudian light.’ As acerbic critic, John Berger suggests, the couple look “smug and self-satisfied not because they were fitting into the Augustan and Rousseauesque tradition, but because they owned the land behind them” (cited in Whyte, 2002, p. 24). The pastoral as class affirmation is still evident in the media today particularly in the ever-popular UK period dramas set in idealised rural locations, such as Agatha Christie’s *Miss Marple* and the highly popular, *Downton Abbey*. 
Pastoral as retreat: The pastoral is also used to reassure during periods of rapid social change and uncertainty; rural nature can be a retreat from urban reality. While this need to escape the “contaminating influences of city life” (Scoular, 1965, p. 11) will be familiar to many (again, this need to escape to the country is readily visible in TV drama, advertising and reality programmes) this dissatisfaction with city life was already commonplace in seventeenth century Europe. This is evident in the landscape paintings in Italy and poetry writing in England. Marvell, for example, beautifully captures this non-urban natural ‘essence’ in the most famous line from his poem The Garden (1681) “To a green Thought in a green Shade”.

Pastoral as deception: A sentimentalised nature is used to mask reality or truth about the world; the pastoral is also a pejorative term. Gifford (1999) illustrates the pastoral as deception with a contemporary and pertinent example, “[a] Greenpeace supporter might use the term as a criticism of the tree poem if it ignored the presence of pollution or the threat to urban trees from city developers. Here the difference between the literary representation of nature and the material reality would be judged to be intolerable by the criteria of ecological concern” (p.2). This function of the pastoral, to deceive or divert attention (intentionally or otherwise) is revisited in the later section on nature on-screen.

As Gifford (2012) suggests, “It is this very versatility of the pastoral to both contain and appear to evade tensions and contradictions—between country and city, art and nature, the human and the non-human…that made the form so durable and so fascinating” (p.11).

Age of Sensibility, nature writers and pre-Romantic stirrings
Around the time that Johnson was espousing the pleasures of the pastoral there was a growing interest in the British landscape and the natural world which contrasted with the prevailing neoclassical ideals of order and correctness. Day (2012) discusses this Age of Sensibility as a “period roughly following the death of Pope (1744) through to the publication of Lyrical Ballads [in 1798]” (p.43). While God was still very much in evidence this was a period in which writers “questioned the unity, coherence and goodness of nature…” (Jordanova, 1986, p. 39). And, as Jordanova further argues, “the goal of so many writers was to displace a religious view of human virtue and sin, often presented as ‘artificial’, and replace it with a secular, naturalistic one” (p.53). Eighteenth century writers such as James Thomson, William Collins and Gilbert White now realised,
through their poetry and prose, a natural world inspired by the local British landscape (past and present), rather than the distant Arcadian realms of classical Greece or Rome:

Verse 3, from *Ode to Evening* by William Collins (1746)

Collins, and others writing during the Age of Sensibility also heralded a ‘pre-Romantic stirring’ (Day, 2012); anticipating an age where representations of nature would be drawn as much from the internal mind as from an external physical world. Furthermore, this eighteenth century nature prose anticipates the nature writing tradition which was to become so influential in the formation of national identity, as manifest in such powerful visionary ideals as the British countryside and the American wilderness. Nature in the service of identity-making is a feature of both the Arcadian and romantic traditions and it is romantic nature and the wilderness ideal which are the subjects of the following section.

### 3.3 Romantic nature and the wilderness ideal

“‘I hate the dreadful hollow behind the little wood, Its lips in the field above are dabbled with blood-red heath.’ From *Maud: A Monodrama*, by Alfred Lord Tennyson (1855, Part 1). Poem is illustrated by romantic artists, Rossetti and Millais.

Figure 9 Romantic entanglements

Europe in the eighteenth century was undergoing significant social, economic and political change. Urban expansion and industrial development were well underway and
scientific ideas, questioning man’s place “within a vast, ever-expanding universe” (Messenger, 2009, p. 12) challenged the supremacy of the established Church (Hooker, 1998). At the same time, nature-sensitive writers in England were beginning to demonstrate a shift in attitudes towards nature as evidenced in their language and detailed reporting of the particulars of a much more intimate natural world. While these writers still struggled to situate God, their interest in the local and physical rather than the classical and historic indicated a move away from the classical traditions which had referenced nature but which had not required that the artists and writers engage in any real sense with the natural world around them (Day, 2012). The Romantic Movement was yet a further step away from the classical ideal. This major art and literary movement again situated the natural world at its centre, but this was no longer a ‘nature methodized’ but a nature of “mists, mountains, dark rivers [and] impenetrable forests” (K. Clark, 1973, p. 67); an untamed natural world which, as Clark suggests, had lain dormant in the European imagination for centuries.

**Defining the romantic**

Defining the romantic can be difficult; by definition it favours the “indefinite and boundless” (Drabble, 2006, p. 72). There are, however, powerful motifs which recur within romantic poetry, prose and paintings of late eighteenth and nineteenth century Europe. Artists of this period sought inspiration from the natural world; in it they found a language of expression, a route to self-identification and the possibility of spiritual redemption and renewal:

The Romantics believed that nature possessed abstract qualities such as truth, beauty, independence and democracy. In the natural world, people could reclaim something of the lost innocence of their origins. Artists such as Turner and poets such as Wordsworth involved the spectator or reader as participant in the dynamic experience of nature and landscape, instead of remaining objectively distant from it (Whyte, 2002, p. 104).

In England the so-called ‘Lake poets’ demonstrated these common interests which included more personal, emotional responses to the natural world (Kerridge, 1998). Nature for Coleridge, Byron and other romantics was first and foremost about the individual, the subjective and the inner self; the natural world provided a “theatre of the soul through which feelings of alienation, fear, terror, melancholy, wistfulness and reverie were expressed” (Messenger, 2009, p. 146). More than this, however, the deeply personal
romantic connection with nature enabled a powerful intimacy between the viewer or reader and the nature which was represented. This is evident in two lines from Byron’s (1812) *Childe Harold’s Pilgrimage*:

> Are not the mountains, waves, and skies, a part of me and of my soul, as I of them?

Projecting the internal mind onto an external, physical world effectively dissolved mind/body, nature/human and even nature/soul boundaries. And, as poet and critic, F.T. Palgrave suggests this “…union of Nature with the soul [is a] chemical, not mechanical combination” (in Blunden, 1929, p. 77).

The natural world is essential within the romantic tradition but how this nature is represented on the artist’s canvas and the writer’s page typically takes one of two forms (N. Roberts & Gifford, 1998). As Clark (1973) eloquently describes:

> Nature, the goddess of the early eighteenth century, had, like most divinities, two aspects: the ferocious, vengeful and destructive and the tranquil, comforting and creative. We may call them…the Byronic and the Wordsworthian. In painting Gericault and a great part of Turner represent destructive nature; comforting, health-giving nature is represented by Constable (P.264).

Clark’s nature divinities provide a useful (if unstable) framework for discussing representations of nature as mediated through the romantic lens. Furthermore, these divinities not only distinguish creative light from darkness, they also situate enduring nature imaginaries within a much wider social and political canvas. Both nature divinities are implicated in imaginaries of identity and nationhood (in Europe and beyond) and both continue to resonate in contemporary mediated representations of nature as experienced through the multitude of media today.

### 3.3.1 Nature as darkness: the romantic sublime and the wilderness ideal

In the first century AD, Longinus wrote on the concept of sublimity; the use of elevated written language to transport the reader beyond the ordinary. He suggested that the author of the sublime must have the “power of forming great conceptions” (H. Adams, 1971, p. 76) and importantly that the sublime is “the product, in part, of nature” (*ibid.*, p.78).
Longinus’ concept of the sublime resurfaced later in Europe (Salerno, 1951) and by the eighteenth century the sublime had become integral to the romantic ideal—indeed it was deemed to define this artistic and literary movement. In England the sublime represented such a philosophical shift that Whig politician, Edmund Burke, was moved to define the experience of the sublime. In *A Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful* (1757) he codified attitudes to landscape and distinguished between two human instincts: self-propagation and self-preservation. The former, Burke associated with “soft, smooth and harmonious” (arguably feminised) ‘beautiful’ landscape, while the latter which was aligned with (arguably masculine) “elements that were huge, vast… or threatening” and which engendered “apprehension or fear”, were sublime (Whyte, 2002, p. 72).

Whether romantic artists and writers were in any way guided by Burke’s treatise—which Clark (1973) described as “original, intelligent and extremely boring” (p.45)—seems unlikely. However, the sublime as nature’s dark side was strongly evident in poetry, prose and painting from the earliest period of the romantic through to the Gothic and Pre-Raphaelite Romantic revival in the nineteenth and early twentieth centuries. Major exponents of the romantic such as Blake, Coleridge, Byron and Turner and also later painters and poets, such as Millais, Holman Hunt and Alfred Lord Tennyson from the Victorian Romantic, revelled in the sublime. To these writers and artists, nature was thrillingly potent and alluring while at the same time something dark, fearful and unknowable (K. Clark, 1973). This dramatic element was brought to life, first and foremost, through the natural world which was selected and depicted by the artist who was encouraged to incorporate elements that are most readily associated not simply with nature but with wild nature or *wilderness*.

**Nature as wilderness**

Nature which is or appears to be pre-social (undisturbed, primeval, remote) is for many—most notably those within the essentialist tradition—the epitome of ‘real nature’. Nature-as-wilderness inspired the great nineteenth century American nature writers such as Henry Thoreau and John Muir and informed ideas of nationhood and identity.22 And

---

22 Although identity-making through wilderness is not limited to North America. NZ also celebrates the idea of the ‘man alone’ and the rugged Southern Man (routinely appearing in TV drama and advertising).
today, nature-as-wilderness continues to inform the beliefs and practices of eco-centric writers and film-makers, deep ecologists and environmentalists. But this passion for the wilderness is not innate, as Adams (2010) describes:

In Europe, the traditional meanings of wilderness date from the time when people feared nature—feared its teeth and claws, and the blind impartiality of mountain, forest and storm that took and killed people as they wrested a bare living from the face of the Earth… The wild was the untamed, lying beyond the tended fields and managed woods, where lawless men roamed and danger lay, when anyone benighted or set upon would not find help (Cronon, 1995; Schama, 1995). Wilderness and wildness were not then virtues, but symbols of barrenness, of lack of harvest, of lack of care (P.69).

The wilderness as impenetrable forests, mountains and ravines was perceived to be inhospitable in Europe well into the eighteenth century. Changes in these perceptions of nature in general and wilderness in particular only shifted later, notably coinciding with increased industrialisation and urbanisation. As people moved from rural areas to rapidly growing cities and wild places diminished, wilderness began to matter, not only as ‘valued other’ but as a place of redemption and healing for humans and ultimately nature:

Urban dwellers increasingly came to value nature for its own sake…Wild landscapes, formerly dismissed as gloomy and horrid, became sources of great spiritual nourishment; wild woods, seen as a threat to the forces of civilization, now offered the opportunity of solitude, contemplation and oneness with nature. The experience of nature became a spiritual act; nature was not only beautiful, but was mentally uplifting and morally healing. In this respect, the Romantics anticipated the modern wilderness movement (Marshall, 1994, p. 272).

As wild places continue to disappear, so too are wild places and the wilderness ideal increasingly valued. But as Burke suggested more than two centuries ago there is also another nature associated with the sublime (and the romantic); a softer and more harmonious nature which increasingly moves towards the picturesque.

3.3.2 Nature as light: the picturesque and nature ideals entangled

The Romantics also recognised a more “tranquil, comforting nature” (K. Clark, 1973); a nature that brings the reader and the viewer, not down into the depths and darkness of destruction and despair, but into the creative, health-giving light. The artist may still invoke melancholy within the viewer but this is ultimately a gentler, more contemplative and reflective nature which ‘lifts the soul.’ As Day writes of Lyrical Ballads:
A sense of the health and integrity of the life of nature, in contrast with the depredations wrought by humanity, is exemplified in *Lyrical Ballads* by Wordsworth’s ‘Lines written in early spring’… Coleridge [too] shows a ‘Romantic’ antipathy towards society, and celebrates in contrast the uncorrupted nature of ‘nature’ (2012, pp. 34, 36).

Health-giving nature is contrasted with the corruptions of society and it is this rural-urban distinction which most defines this nature divinity. Rather than a nature of dark chasms, precipitous mountains and stormy passions, rural nature is about humbler places, spaces and emotions. Passion is still evident but this is a less torrid domain and words such as love and beauty are commonplace. In Britain this more tranquil romantic nature provided a comforting refuge (both metaphorically and in reality) from the rapidly growing and increasingly industrialised cities; a softer more accessible nature much closer to the picturesque. This is where the romantic and Arcadian nature boundaries blur, a blurring which endures in representations of the natural–and the nature-culture–world today.

**Entangled and enduring nature frames**

In the previous sections two iconic cultural representations of nature associated with the classical and romantic traditions have been described within the wider socio-historic context. Importantly, while the Arcadian and wilderness ideals (intrinsic within these cultural traditions) are discussed in isolation this falsely represents the reality of these, at times, highly interconnected nature-centred traditions. These cultural movements are distinguishable to the extent that they can be compared and contrasted but they are also thoroughly interwoven within the wider cultural milieu within which they exist.

The entanglement of nature traditions and the difficulty or indeed pointlessness of attempting to disentangle these has been noted by others exploring nature as representation. For example, philosopher, E.C. Hargrove (1989) and renowned historian, Simon Schama (1995) suggest the idyllic and the wild (which may both be framed as Arcadia) are “mutually sustaining rather than in opposition” (cited in van Koppen, 1997, p. 295). Notably, however, while it is impossible to keep these different artistic and literary styles entirely separate the evidence suggests that the Arcadian and wilderness ideals can be most strongly associated with the periods and traditions identified and discussed in the sections above. Treating these overlapping traditions as separate or
discrete also makes it possible to articulate those cultural representations of nature which have been most clearly evident and enduring in Western art and literature.

The third nature representation outlined in this section on enduring cultural nature frames is nature as resource. Unlike the idealised Arcadian and wilderness framings, nature as resource is overtly exploitative and more deeply entangled with Western history and culture; it was and for some still is the dominant worldview for many in the Global North.

### 3.4 Nature as functional resource

Nature as resource has deep roots in Western society and like the Arcadian and wilderness ideals this representation is widely evident in art and literature. However, unlike Arcadia and wilderness nature as a functional, exploitable and even inexhaustible resource has permeated and arguably continues to permeate all aspects of social, economic and political life (J. S. Clark, 2014). As Winner (1977) argues, “[t]he primary feature that appears to distinguish the West…is its commitment to understand, control, and exploit nature” (p.111). Antal and Drews (2014) attempt to quantify this commitment to a resource-based, instrumental view of nature using Ngram Viewer and for these writers (like others before them) nature as resource is—like the eyes of the Christian God—“in every place” (Proverbs 15:3).

Significantly, the idea of nature as resource assumes a priori a nature-culture distinction as an essential reality for social cohesion and advancement; a particular worldview which Catton and Dunlap (1978) term the Human Exemptionalist Paradigm (HEP). This worldview positions ‘man’ as dominant species and master of both nature and his own destiny (Dunlap & Michelson, 2002); a destiny which is first and foremost about Western progress and dominion over nature. The following two sections, on ‘religion, science and economic development’ and ‘colonial expansionism and cultural development’ situate nature within this Western paradigm or all-encompassing worldview.

---

23 Google tool which gives frequency counts of words in books published between 1800 and 2012.
3.4.1 Religion, science and economic development

The human relationship with a commodified nature (which includes but also extends beyond representations in art and literature) has been examined from a variety of socio-historical perspectives including feminist (C. Merchant, 1989; Rose, 2008), Marxist (Cosgrove & Daniels, 1988) and post-colonialist (Sioh, 2009). Researchers also typically address this topic through one or more of the main pillars of Western progress namely religion, science and economic development. For example, Williams (1980) and Soper (1995) discuss the significance of Christianity in actively enabling the exploitation of nature. Christianity encouraged ideas about nature as ‘instrumentally useful,’ granting humans special status and importantly legitimising “rule over other creatures” (Soper, 1995, p. 23). As historian, Lynn White (1967) argues, “Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects” (1205). While many in the West now live in a post-Christian world these early nature framings were hugely influential and they continue to inform attitudes and behaviours towards the natural world today (J. G. Champ, 2009; Good, 2014; Heidegger, 1977; Ivakhiv, 2008).

Others writing on this topic point to how science, from the earliest days of the Enlightenment, has (of necessity) sought to organise the natural world. “Disorderly, active nature was soon forced to submit to the questions and experimental techniques of the new science” (C. Merchant, 1989, p. 164). Scientific interests (concerning observation, measurement and analysis) required and continue to require, a distinction between humans and a subjugated nature. Others argue that while science has advanced collective knowledge of and understanding about the natural world it has also created barriers to individual connections with nature through the use of complex language and the classification and ordering of the natural world as distinct from human systems. Even in the nineteenth century, Western framing of nature as an object of scientific study combined with the loss of any meaningful or spiritual connection with nature created something of a paradox. As Johnson notes, “passion for nature was widespread, but knowledge of the actual physical environment was limited” (2009, p. 7).

---

24 Another aspect of Christianity is caring for nature. However, the dominion and exploitation of nature has been the greater hallmark of this established religion for these and other writers.
While science has undoubtedly informed and continues to inform Western ideas about nature, Whyte (1976) further argues the significance of ‘action-orientated technology’ which, he suggests, cannot be underestimated (1967, p. 1204). Science-based technology (J. A. Passmore, 1974) has enabled Europeans and their descendants to substantially transform the physical environment, to tangibly redefine relationships between culturally diverse peoples and directly and indirectly influence human ideas about and also attitudes and behaviours towards the natural world. As these and other writers suggest, rather than the Scientific Revolution it was the Industrial Revolution combined with widespread urbanisation and colonisation that enabled and promoted ideas of nature as an endless exploitable resource to almost every part of the globe.

Those who examine a commodified (or commodifiable) natural world from the perspective of this third Western pillar of economic progress and development traverse multiple domains including industrialisation, urbanisation and colonial expansionism. The first two of these human-nature contact themes—in particular the shift from rural to urban living—permeated the earlier discussions on nature as Arcadian and wilderness, where these idealised framings of nature effectively bring solace to those now disconnected (or sensing a disconnect) from the natural world. The third of these interests, concerning Western colonial expansionism highlights two further elements, namely the transportation and imposition of resource-based ideas about nature to other places and also the coalescing of ideas about nature and nationhood. Both these elements are significant in terms of how nature was and also continues to be represented through a variety of media and are discussed briefly below.

### 3.4.2 Colonial expansionism and cultural identity

The colonial nations of the eighteenth and nineteenth centuries operated within a worldview which was born of a particular cultural history. This largely individualistic, anthropocentric, exploitative view of a boundless nature, which Catton and Dunlap (1978) framed within the HEP position the interests of typically white, wealthy, protestant males above the interests of all others. ‘Others’ included not only non-human natural organisms but also traditional peoples who were strongly associated with the

---

25 It is also argued that resource-based ideas about nature persist today, despite claims to the contrary.
natural world (Sundberg & Dempsey, 2009). The American wholesale slaughter of bison in the late nineteenth century (see figure ten) epitomises not only the prevailing Western attitude to the natural world—which must be subdued and exploited—but also this same attitude which extended to those people who were believed to be closer to nature than culture.

Paradoxically, while the ‘bourgeois-inspired imaginaries’ of capitalist ideology (Smith, 1980) encouraged a view of nature as an external, exploitable resource—until the 1890s for most in America a tree meant only shelter, transportation, fuel and “an article for storing food” (Sachs, 2010, p. 247)—this period of mass expansionism and exploitation of both peoples and natural resources was also a time when an idealised nature became more valued (Macnaghten & Urry, 1998, p. 14). Idealised nature, particularly nature perceived as being unspoilt was imbued with new and powerful cultural meaning. Remote wilderness and forests became valued not simply as economic resources but also as potent signifiers of a lost or idealised cultural identity. Much of the literature on idealised nature and identity converges on these particular themes, as well as a third idealised nature, realised as the English countryside (as discussed earlier). American historians, in particular, address the significance of wilderness and the ‘Wild West’ (with its associations of freedom, independence and masculinity) when writing about American cultural and national identity (Dennis, 2010; R. Johnson, 2009), while Fascist appropriation of German forests is well documented (Schama, 1995). What had been a natural resource in Europe for centuries was now idealised and valued as a representation of select political ideals, in particular natural authority, purity and strength:

...German woods were more than simply an economic resource: they were in some mysteriously indeterminate way an essential element of the national character; they were, as Riehl put it, “what made Germany German” (Schama, 1995, p. 116).

---

26 In her letter to the Forum on Literatures of the Environment Heise (1999) makes the point that “German poets in the [1960s and 70s] had to grapple with the prior Nazi appropriation of such natural symbols as the forest and the oak and had to invent a new kind of nature writing divorced from fascism” (p.1097).
The shift from nature as resource to nature as national or political icon is ongoing today, as wild places continue to disappear and wilderness (real or imagined) is increasingly valued. As such this topic is revisited in the later section on nature as classical representation on-screen.

**Three historic and enduring cultural natures**

This first part of this chapter has outlined the genesis and key components of three significant and enduring nature ideas, as Arcadian pastoral, romantic wilderness and functional resource. This section also highlights how deeply rooted these nature representations are within the Western socio-cultural landscape. Within the current study context what is significant about these nature framings is not just the extensive pedigrees of these representations and their ongoing significance in the human-nature literature but their ongoing value in the modern media-ted world; the Arcadian is routinely conjured up in the classic English murder mystery and well-crafted wilderness landscapes are the mainstay of high-quality car commercials. The following sections discuss the ongoing significance of these enduring nature representations, as resource and as Arcadian wilderness (ideals now thoroughly entangled); significant natures which continue to be represented on mass media most notably through the medium of television.

**Section II: Mass media**

3.5 **Mass media**

This section examines mass media, in particular broadcast, analogue TV. Media further promote the three cultural nature representations (as Arcadia, wilderness and resource) which are routinely explored and theorised in the research literature and which were the subject of sections 3.2-3.4. Television more than any other mass mediating technology has also enabled and promoted and continues to promote two additional on-screen natures identified here as nature as real and as risk (both to humans and also at risk from humans).

Section II provides a framework from which to respond to RQ2: “how has nature been represented in the media; what nature themes are evident?” Before addressing this question it is important to first outline the characteristics of mass media, most notably
television, a game changing media technology in terms of how nature has been—and continues to be—framed for mass audiences. This section also sets the scene for the later discussion on Web 2.0 and the implications of nature as representation within this new media environment (see chapter five). This section on mass media lays a foundation for the examination into why new media are not only different but why new media matter.

Mass media defined

Mass media include the different mediating technologies including newspapers, radio, television and cinematic film and the people and processes which enable these ‘mass media institutions’ to function effectively. And, as Chaffee and Metzger (2001) describe, “the defining feature of these media institutions is their capacity for mass production and dissemination of messages” (p.366). Mass media are further characterised by their ‘bigness and fewness’ (ibid.), empowering a relatively small group of media producers or media gatekeepers. Similarly, Dominick (2011) defines the allied phenomenon of ‘mass communication’ as “the process by which a complex organization with the aid of one or more machines produces and transmits public messages that are directed at large, heterogeneous, and scattered audiences” (cited in Sparks, 2012, p. 71). This power to simultaneously communicate messages to much larger and geographically disparate audiences was unprecedented prior to the arrival of mass media.

Those who analyse mass media, not surprisingly, portray media in multifarious ways which range from the uplifting, media have the power to “create a whole new democratic world” (Winner, 1986, p. 1), to the disempowering; media are undemocratic, limiting communication to “one-way monologue” (Buonanno & Radice, 2008, p. 23). Furthermore, television, as the twentieth century’s mass mediating technology par excellence, has been described as ‘illuminating’, shining light in dark corners (McLuhan, 1964), as ‘nightmarish’, paving the way to a ‘Huxleyan’ future (Postman, 2005) and as ‘unifying’, connecting large audiences who are “perceived to have shared interests” (Sturken & Cartwright, 2001, p. 152). As American playwright, T.S. Elliot pointed out, television permits mass audiences to laugh at ‘the same joke at the same time.’

27 Postman’s book was initially published in 1985; references are from the updated anniversary edition.
3.5.1 Mass media and the Age of Television

Television became increasingly visible in Western homes in the 1950s and 60s; as Buonanno and Radice (2008) suggest, we can “speak of an ‘age of television’ coinciding with the second half of the twentieth century” (p.11). It was also through this medium that representations of nature were and arguably continue to be most readily and widely available to mass audiences. So while other media such as newspaper and radio are implicated in the upcoming sections, attention is primarily on representations of nature on TV (and to a lesser extent, cinematic film), i.e. nature on-screen. In anticipation of this upcoming discussion, the current section takes a brief look at television as “perhaps the single most important form of mass mediating nature in the twentieth century” (Lindahl Elliot, 2006, p. 205).

Nature has been on-screen for more than a century. The motion picture camera was first developed in the 1880s and representations of nature appeared only slightly later, in 1910 (Mitman, 1999). However, it was with the establishment of the first public television broadcasting system (the BBC) which began transmitting in Britain in 1936 (Buonanno & Radice, 2008) and also the development of broadcasting in the USA, just three years later (Williams, 1974), that the potential for mass shared experiences of the world—including the natural world—really took off. Before attending to cultural representations of nature on-screen (this is the subject of Section III), it is helpful to outline the key elements which characterise television; namely TV as a mass mundane, highly visual, inherently passive and entertaining medium. Without wishing to position the upcoming examination within a deterministic framework (either technological or social) these defining aspects respond to television as ‘container’ (the technology, the TV set) and also ‘content’ (the messages produced and received, the TV programmes). These characteristics are significant in the context of the current chapter on mass media and also, importantly, within the wider Nature 2.0 study, which attends to new media.

TV as a mass ubiquitous, mundane medium

The effects of television were initially ignored by serious research largely as a result of the mundane and seemingly commonplace nature of this medium. “Television is a domestic medium. It is watched at home. Ignored at home. Discussed at home” (Silverstone, 1994, p. 24). The very domesticity and ordinariness of TV meant that it was
not regarded as a technology which had any real meaning or influence in society (Sparks, 2012). This situation changed in the 1960s when researchers began to recognise that it was the mundane, ubiquitous nature of various technologies including television which gives these technologies their significance and value as cultural forms. Raymond Williams (1961) argued “that the most significant effects of culture could be found in ordinary things that people did to give their everyday lives order and meaning” (cited in Ruddock, 2013, pp. 16-17). Thirty years later, Bruno Latour (1992) also argued in defence of what he called the ‘missing masses’; what Michael (2000) later describes as the “unnoticed… always present mundane technologies which contribute to and which disrupt the everyday world” (p.4). Similarly, Lie and Sorensen (1992), note how ordinary technologies are integrated into and importantly shape the everyday lives of ordinary people. Television viewers, they argue, are never passive consumers but rather as audiences they, “adopt and adapt technologies, [they] shape, and are shaped by, them” (cited in Michael, 2000, p. 9).

As the “first mass ubiquitous medium” (McKibben, 1992, p. 213) television has over the last 50 years been scrutinized, criticised and celebrated in equal measure. TV has entertained, informed and educated citizens around the world about the world. It has also provided many and varied representations of the natural world, most notably a highly visual natural world which can be enjoyed from the comfort of the family living room.

**TV as a highly visual and inherently passive medium**

Tele-vision–‘to see at a distance’–is, by implication, a highly visual medium. Television critic, Neil Postman (2005) suggested that this visual dimension is “the single most important fact about television… people watch it, which is why it is called “television” (p.92). For the vast majority of the viewing population the visual aspect of TV is what makes it such an appealing and successful communication medium. Television commentators from within and beyond media studies are, however, less enamoured by this prioritising of the visual over other human senses. American architect, Frank Lloyd Wright famously quipped that TV is ‘chewing gum for the eyes,’ while cinema critic, Anna McCarthy (2001) dismisses this medium by suggesting television to be little more than “a toaster with pictures” (cited in Buonanno & Radice, 2008, p. 16).
In addition to the highly visual aspect of television is the idea of the passive audience. This passivity is manifest in two ways. Firstly, the inactive verbs such as ‘viewing or watching’ convey a sense of how engaging with television content is perceived as a passive rather than an active experience. The viewer is looking at television, the experience is passively visual (and aural) rather than actively engaging the body as a physical agent. Secondly, TV programmes appear on the screen of a physical container, a television set typically and permanently situated in the family home. The rigidity and fixed nature of this medium required, and for some continues to require, that the viewer be similarly and passively located. This calls to mind the image of the viewer as couch potato; an individual ensconced on the settee, passively watching the “least objectionable program” (Rogers, 1986, p. 31). Williams (1974), writing 10 years earlier, goes even further when he suggests that this viewing actually explains TV’s success:

> Television became available as a result of scientific and technical research, and in its character and uses exploited and emphasised elements of a passivity, a cultural and psychological inadequacy, which had always been latent in people, but which television now organised and came to represent (p.12).

Williams’ summation of people’s congenital or innate passivity with regard to television and possibly other parts of their lives may be stretching a point. However, his suggestion that TV exploits latent human tendencies or interests is a theme which is echoed in the next section on television’s programming focus, i.e. TV as entertainment.

**TV as an entertainment medium**

From the earliest days of broadcasting television has existed within a competitive, commercial environment. Despite the success of state-run channels, most notably the BBC, the majority of TV programmes had to and must continue to sell if they were (and are) to remain viable and on-air. So while some early supporters defended television’s role as a tool of education (Briggs & Burke, 2009) the majority of media commentators would accept that TV is first and foremost a medium designed to entertain. This is not to deny television as a source of information about the arts, sport, news and also education, but it does suggest the primacy of entertainment across all televisual genres.

Few commentators, furthermore, would agree unreservedly with Postman’s Huxleyian vision of the future as ushered in by the Age of Television or as Postman more fittingly
suggested, the ‘Age of Show Business.’ However, elements of his claims about television, like the many aphorisms of fellow media critic, Marshall McLuhan before him, resonate:

[I am not claiming] that television is entertaining but that it has made entertainment itself the natural format for the representation of experience… The problem is not that television presents us with entertaining subject matter but that all subject matter is presented as entertaining, which is another issue altogether… Entertainment is the supra-ideology of all discourse on television (2005, p. 87).

While not entirely at odds with Postman’s argument, other media commentators suggest that television has not one but two main areas of mass-media output: entertainment and also news (Dickinson, Harindranath, & Linné, 1998; Williams, 1974). Television, as a source of news as well as entertainment, is revisited in Section III, where attention shifts to cultural representations of nature on-screen. Before progressing to this section, however, there is value in outlining how other ‘mass media and nature’ research interests have been framed. The upcoming section addresses the significance of ‘media effects research’ in terms of the current study and also highlights the main interests of those undertaking research into nature as representation on-screen.

3.5.2 Media effects research and on-screen nature interests

Nature 2.0 study and media effects
This study examines cultural representations of nature. Interest is in nature as presented through media and this implies the significance of media-ted nature representations, i.e. media matter. This aligns this study with the ‘media effects’ tradition. That said, the study does not attempt to quantify the effects of media on the ideas which are shared. Instead it builds on the findings of those who have undertaken nature-related research within the mass media effects tradition and uses these findings to explore the representations of nature in the new media environment. In chapters six to nine the information which has been gathered in response to mass media-ted nature representations is used to inform understanding of the online nature representations chosen by the students. Furthermore, the student-selected nature websites provide a bank of online nature representations which are then available for analysis. This study endorses the belief that media effect at a very general level; if this were not the case there would be no validity to this Nature 2.0 study. As such, it is useful to say a little more about the media effects tradition, particularly as this relates to mass media and representations of the natural world.
Media effects research

Early media effects research focused on the gathering of quantifiable data which was used to demonstrate the cause and effect of media, i.e. the direct effect of media as this impacted on human behaviour (Gauntlett & Horsley, 2004; Rogers, 1986). Adams (2009) describes this effects tradition as being “a simplistic approach to media studies that links “exposure” to quantifiable changes in individual attitude or behaviour” (p.160).28 Media commentators working within the effects tradition no longer view the media as having a direct impact on human behaviour; watching television violence does not make the viewer violent. Later models which support more measured understanding of media effects derive, at least in part, from cultivation theory, developed by George Gerbner and Larry Gross. While subsequent theories have modified cultivation theory this approach to understanding media effects (particularly the effects of television) continue to influence understanding of media use and effects today.29 The central ideas which are associated with this approach are also pertinent to the current study on new media and ideas about the natural world. These ideas include: (a) influences are unintentional and at the societal level (while TV viewing contributes to shared conceptions of social reality, the connections between media and society are not immediately obvious) (P. C. Adams, 2009); (b) mainstreaming, i.e. TV is a ‘centralised system of storytelling’ although the homogeneity of experience, of images and messages received, is neither simple nor immediate (Gerbner & Gross, 1986) and: (c) resonance, TV reinforces certain ideas over others although again this link is neither immediate nor easily measured (ibid.).

While specific causal links between media and changing perceptions, attitudes and behaviours have now been largely discredited, the idea that certain messages resonate more than others cannot and should not be so readily dismissed. As McKibbon argued in 1992, “TV is a pipeline to the modern world [and it] constantly reinforces certain ideas” (p.17). Furthermore, as Adams (2009) later suggests, TV prioritises certain ideas over others; it indicates “what is acceptable and important while marginalizing other things” (p.110).

28 Tae-Seop and Sang Yeon (2007) outline early media effects models which include: Hypodermic needle or Bullet theory; Two-step flow model; Limited or minimal effects; and Selective exposure hypothesis.  
29 Bryant and Miron (2004) surveyed 2,000 articles in the top three mass media journals (from 1956) and noted that cultivation analysis was the third most frequently used theory in mass communication research.
The idea that media prioritise or even re-present certain ideas, i.e. actually contribute to what reality means, is routinely examined by media scholars, who analyse the media in terms of: priming (attending to certain issues and not others); gatekeeping (controlling the flow of messages); agenda-setting (prioritising what is shared); and framing (presenting ideas in certain ways to encourage certain responses). These effects of media are most clearly evident in— but certainly not limited to—TV new reporting, where information must be conveyed quickly, concisely and typically needs to pack a punch. As such, there is further discussion on gatekeeping, agenda-setting and framing in particular, in section 3.9: Nature as risk on-screen. For now, however, it is sufficient to assert that when media contribute to what reality means, then the value of understanding how people, places, events and importantly here, how the natural world is represented through the media, becomes all important.

**Media effects research and nature**

Screen-mediated nature representations are, by implication, anthropocentric. It is humans who “give nature a voice” (Willoquet-Maricondi, 2010b, p. 5). On-screen representations of nature are culturally framed through words and images, through language and through ‘mediatized symbols’ (Lester & Cottle, 2009). As film critic, Michael McDowell (1996) points out, “[i]t’s our language, after all, that we’re using, and we inevitably put our values into the representation” (p.372). Furthermore, how we choose to represent nature on-screen changes with our (changing) “values and culturally constructed beliefs about the nonhuman world” (ibid.). As various natures are re-presented on television so do these culturally-mediated ideas influence people’s understandings about and even relationships with the natural world. Jerry Mander (1978) argues that TV informs but also changes understanding of nature:

TV flattens perception so that information, which you need a fair amount of complexity to understand it…is flattened down to a very reduced form…and the medium has inherent qualities which cause it to be that way (para 3).

This technologically deterministic view of media effects is counterbalanced by other cultural theorists writing on media and nature. As, Dunaway (2010) writes:
Cronon, Haraway, Davis and others [have] demonstrated how powerful groups can make their vision of nature dominant and marginalize other ways of interpreting the relationship between people and the environment (p.280).

The idea that dominant groups impose their values and beliefs on a wider public has been discussed at length by media and other theorists (Bourdieu & Thompson, 1991; Castells, 1996; Williams, 1976). Regardless of whether or not the dominant groups or power holders (here media corporations) deliberately promote certain natures over others they undoubtedly present the natural world in particular ways and in so doing imply certain relationships between humans and nature. And as Bonnett (2004) reasonably suggests, “…there will be occasions when it is right to raise the issue as to whose voice is being heard when nature is being described or what is natural is being asserted” (p.51).

Those who have attended to representations of nature in the media have differing interests and drivers and in general research focuses on one or more aspects of four key themes. These include: (1) media/mediated representations of nature impact negatively on the human nature connection - abstracting, sensationalising (Ivakhiv, 2008; M. J. King, 1996) and even supplanting the need for ‘real’ nature(Lippit, 2000; Solnit, 2003); (2) media inform knowledge, attitudes and behaviours towards the natural world, in terms of media use (Lee, 2011; Morgan & Shanahan, 2010) and also media content (Good, 2014; Wall, 1999); (3) media representations of nature can be used to inform understanding of culture rather than nature (Mitman, 1999, p. 127; Pierson, 2005); and (4) particular media genres inform understanding of particular natures. While much of this research is beyond the current interest, elements of enduring cultural representations of nature do appear within these related areas of research. Most notably, those studies which examine mediated representations of nature through the lens of different media genres speak most directly to the current study interest in cultural representations of nature in the mass media.

Section III: Mass media-ted cultural nature frames

The third section of this chapter examines representations of nature as these now appear on-screen, in particular, on TV and in film. The focus is on enduring cultural representations as Arcadia, wilderness and resource and also on two more recent nature representations which have been enabled by mass media; nature as real and as risk. These
three + two natures (as noted, these natures are not discussed in combination in other studies) are examined through select television genres in the four upcoming sections:

3.6 **Nature as resource**: enduring nature representation as commodity or functional resource, examined through the advertising and documentary genres;

3.7 **Nature as classical**: enduring and frequently entangled Arcadia and wilderness representations, examined in advertising and drama;

3.8 **Nature as real**: nature as authentic, a more recent representation which is most strongly associated with the nature documentary, this is *reel* nature as real nature;

3.9 **Nature as risk**: the double-sided representation of nature as both vulnerable and vengeful, particularly evident in the news genre.

While the current study interest is not in television genres *per se*, such studies typically address particular natures in thematic ways at times overlapping and even aligning with the current interest. Without wishing to examine this genre-centred research in detail, there is value in highlighting selected studies which focus on cultural representations of nature as these appear within particular genres on-screen.

### 3.6 Nature as resource on-screen

The framing of nature as a resource to be used or even exploited by humans may be less fashionable on-screen today (few programmers would openly celebrate nature’s exploitation or destruction in the way film-makers once felt able to do) however this image of nature is intrinsic to Western culture. Examples of a materialist, commodified nature therefore appear within and across all media genres and also as the foci of a variety of research interests. Such interests range from Ivakhiv’s (2008) critical study on the still and moving camera as “an instrument of distancing, even of domination…and commodification of the things that make up the world” (p.17), to Meisner’s (2005) study on mass media as the source of nature’s ‘symbolic domestication.’ Other notable TV nature content studies by Jennifer Good (2007, 2014) and also Howard-Williams (2011) examine mass media and the cultivation of consumerism. While both authors of these studies suggest that TV representations of nature promote consumerist attitudes and values, Howard-Williams (studying nature content in 140 hours of programming across all media genres on four New Zealand television channels) also notes that such a link
cannot be made in relation to nature representations on local, Māori TV. This finding reflects the enduring, spiritual connection that many Māori still have with the natural world. This is encapsulated in the *Mauri* concept, the ‘life principle’ or ‘spark of life’ which binds all natural objects, including humans (Mead, 2003, p. 53). And perhaps unusually, in the competitive media environment, this and other traditional Māori values continue to underpin the programming objectives of this small, indigenous broadcaster.  

As a result of this network of interests this section represents only a selection of the literature in this area. The intention is to present an insight into media-nature studies sufficient to justify that representations of nature as resource are (and have been) widely evident on mass media. Those researching two media genres—advertising and documentary—address dominion over and commodification of nature and they typically do so within the context of changing media representations of the natural world. These studies provide a useful snapshot of interests and activities in this area.

### 3.6.1 Advertising: nature sells and is for sale

In his ‘Discourses of Nature in Advertising’ Hansen (2002) suggests there has been ‘surprisingly little’ research on images of nature in advertising. According to Salvador (2011), writing almost 10 years later, this situation is now changing. Research into advertising and nature can be particularly revealing as this genre more than any other must engage viewers’ attention quickly and the ideas presented must be compelling if it is to succeed, i.e. if the products advertised are to sell. Towards this end, advertising encapsulates and reflects a microcosm of cultural values and attitudes which pack a punch. It creates rich ‘mini narratives’ to tell stories about the world to the world (Adcroft, 2011) including stories which ‘use nature’ and which reflect and promote particular ideas about the natural world. As Price (2000) notes, TV advertising does what TV drama does but it does so, “with the force of a sledgehammer” (p.236).

There has been a long association between nature and advertising (Howlett & Raglon, 1992). Hansen (2010) suggests that “…appeals to the natural have been a significant part of advertising since at least as far back as the early 1900s” (p.157) while Salvador (2011)

[30](http://www.maoritelevision.com/about/about-maori-television)
argues that “advertising and nature have been closely related since the beginnings of the capitalist world” (p.79). This need for nature in advertising is premised on two fundamental and enduring Western cultural beliefs; that nature sells and nature is for sale.

**Nature sells and is for sale**

Elements of the natural world have long been imbued with symbolic, metaphorical, even ideological meaning and these meanings can work powerfully (Lester, 2010), endure over time and even transcend cultural and linguistic boundaries (Howlett & Raglon, 1992). Humans invest nature with an independent authority which appears to be “superior to any particular culture…[and] referencing something as ‘of nature’ or as ‘natural’ invests them with moral or universal authority and legitimacy” (A. Hansen, 2010, p. 136). It is this natural authority which gives nature its ideological power (Lester, 2010; Salvador, 2011).

In his study of animals in NBC commercials (examined 72 ads), Lerner (1999) identified several recurring themes in advertising, two of which specifically address this semiotic power or function of nature. Most significant is ‘nature as symbol’, i.e. logo or idea. For example, the strength and speed of the jaguar can be transferred and associated with the jaguar car. Also significant is ‘nature as allegory’ where appealing, anthropomorphised mammals are used to sell. As Price (2000) suggests, “.... the marketing of cars and perfume on TV now appears to require Nature’s semiotic powers” (p.236). Without wishing to become entangled in the wider debate on semiotics and meaning, the point here is that nature is used to sell products and nature is in turn the product for sale.

Nature is, of course, represented in many different ways in the media and advertising is no exception. However, as selling is the main driver for commercial activity, commodified representations have always been part of the advertising canon and indeed always will be. Hansen (2010) tracks these and other changing representations of the natural world in his historical overview of TV advertising. He suggests that dominion over a commodified natural world came to prominence on TV during the mid-twentieth century when the West was celebrating the “fruits of industrial civilisation” (p.147). Hansen suggests that it was slightly later, however (between the 1960s and 1980s), where science and technology closely aligned with progress and development that TV foregrounded not only the commodification of nature but ongoing dominion over the
natural world. Hansen identifies this period with ‘technopia advertising’ and ‘green nightmare advertising’; advertising trends which, ironically, coincided with the emergence of green advertising in the 1980s.

Nature in advertising may be foregrounded or, more typically, used as a prop to sell the idea or product on offer. In the nature documentary, however, nature is centre-stage.

### 3.6.2 Documentary: hunting nature

Much has been written on the nature documentary (Bousé, 2000; Mitman, 1999) and this genre is the focus of more detailed examination in section 3.8. In the current section attention is drawn not to the link between the documentary and real nature but to this genre in its infancy in the early twentieth century; to changing representations of nature with reference to nature (more particularly wildlife) as an exploitable resource.

More than any other media genre the documentary, up until the 1930s, celebrated and foregrounded the dominion and exploitation of the natural world (Horak, 2006; Mitman, 1999). Other proto-wildlife film categories (Bousé, 2000) were also emerging at this time, in particular those with a more scientific character (e.g. *The Busy Bee*, 1903) and also with a strong narrative focus. Despite general and widespread enthusiasm for these competing nature films there was also a strong Western appetite for chase-oriented, hunting films; films which ironically often had the support of naturalists and others with an interest in the natural world. These action-based, stalking-with-a-camera type motion pictures such as *Roosevelt in Africa* (1910)\(^{31}\) (figure 11) comprised little more than bloodthirsty, staged animal slaughter, frequently held on a grand scale and in exotic locations (Lindahl Elliot, 2006).

In the 1930s, Frank Buck took these

---

\(^{31}\) The Smithsonian funded *Roosevelt in Africa* (1910), which documented the former president’s year-long hunt which netted over 40,000 specimens for the taxidermist’s knife (Mitman, 1999).
safari films to new heights in what Bousé (2000) describes as a “trio of phony ‘capture films,’” (p.54) (Bring 'em Back Alive, Wild Congo and Fang and Claw). While these decadent capture films coincided with the end of hunting-style documentaries (also signalling the end of such blatant and brutal on-screen representations of animal exploitation) nature as an exploitable resource did not disappear altogether from the documentary genre, as evidenced by more recent studies.

**From hunting to protection**

Wall’s (1999) thematic analysis of 140 episodes of CBC’s The Nature of Things (1960-1994) indicates that while there is a shift away from resource-based nature representations in the documentary genre (to nature as deserving of protection), even as late as the 1960s a ‘bio-economic outlook’ was still apparent. Hansen (2002) notes that nature is still viewed as “an exploitable source of resources and wealth, a domain to be studied and understood - and subsequently controlled and managed… [Wall, 1999, p.61]” (p.502). Champ (2002) examines the ‘nature genre’ in a series of interviews with families near Colorado’s Rocky Mountains in the early 2000’s and he too notes the shift in media interests which (he suggests) now take on more of a ‘grounding function’. As he points out, these programmes, “are not about the straight utilitarian use of wildlife (e.g., as pelts, ivory, oil, food, medicine, etc.) …Protection is [now] the underlying theme” (p.284). Pierson’s (2005) content analysis of a week of Discovery Channel nature programmes (to determine the specific thematic discourses that are represented) reaches a similar conclusion. Nature as ‘resource’ is no longer an element within the documentary genre and Champ (2002) reflects on “what types of relationships are [now] possible other than the older exploiter/exploited model?” (p.707).

**3.7 Nature as classical on-screen**

This section revisits the enduring and frequently entangled classical representations of nature as these now appear on-screen. The iconic Arcadian and wilderness representations are examined with particular reference to advertising and drama, two media genres where the natural world is routinely an escape from reality, a scene setter and a mood enhancer. In earlier sections, the genesis and development of each of these deeply-rooted, culturally significant traditions which have informed idealised framings of the natural world was examined in isolation. While this approach helped articulate how and why these nature
framings have become so thoroughly pervasive in Western thinking as was also noted, cultural traditions can rarely if ever be so neatly packaged. In reality ideas blend, boundaries blur and traditions can signal points of continuity as well as difference within a landscape of changing ideas. As Schama (1995, p. 525) points out:

…as contentious as the battle often seems and as irreconcilable as the [Arcadian and the wild] appear to be, their long history suggests that they are, in fact, mutually sustaining.

Furthermore, researchers resist limiting these enduring nature framings to their essential characters. Deliège (2007), echoing Worster (1994), argues that the Arcadian tradition “cannot be reduced…to the more restricted interpretation [of harmonious, bountiful nature]” (p.428). He blames Theocritus and Virgil for prioritising ‘the pleasant’ and suggests that “there has always been a struggle between the “wilder” and “more rural” form of Arcadia within the Western imagination…” (p.428).

These authors argue the interconnectedness and even indivisibility of these enduring cultural traditions. This study supports this contention and further suggests that these entanglements increased when these ideals migrated on-screen. This section examines representations of the Arcadian pastoral, more civilised and cultivated Wordsworthian nature, together with the wilderness ideal, a more romanticised, uncultivated, even sublime Byronic nature. These classical representations of nature (independently and in combination) have ongoing value in the modern world (Drabble, 1979; Settekorn, 2006) and as such they continue to have value and currency in the media.

3.7.1 Advertising: nostalgic nature for sale

Advertising is certainly not the sole outlet for Arcadian and wilderness imageries, however this media genre presents powerful examples of how classical nature representations have migrated and been successfully employed by the media to sell ideas, products and places. As suggested, advertising reflects a microcosm of changing cultural values and attitudes; ads are routinely micro representations of bigger human dramas with shorter running times and (frequently) expansive budgets. As Postman (2005) argued thirty years ago:
As Price (2000) further suggests, “TV commercials are one of the most incessant, skilfully constructed and enthusiastically financed cultural vehicles for a reigning definition of Nature” (p.244). As a result, researchers with an interest in media and nature typically analyse such images as these appear in media advertising in print and on-screen.

**Rural imaginary: Identity and nostalgia**

The semiotic power of nature in advertising was discussed in the previous section, in terms of nature’s legitimising properties; nature is invested with universal authority which transcends that of culture. As a result, those products designated as natural, together with those which are aligned with nature’s properties, assume that authority and legitimacy. In the current section, where the focus is on the use and value of classical nature representations, the emphasis now shifts to the cultural associations and meanings which are attached to these particular images. Classical nature in advertising is most readily and significantly associated with two, closely related cultural concepts namely, identity (cultural and national identity-making or reaffirmation) and nostalgia (the construction of idealised or romanticised history; remembrance which transcends reality).

Hansen (2010) usefully identifies the three key rhetorical components of what he terms ‘the rural imaginary’ in advertising, a romanticised view of nature, a rural idyllic past and national identity. The making of identity through an imaginary past in combination with an idealised, romanticised nature is of course nothing new. Every country has its own national nature (Macnaghten & Urry, 1998); forests can be made to symbolise the German character, just as wilderness maketh the man in the USA. In the UK it is the countryside which is the essence of English nationhood:

…close links [were] forged, from the 1800s onwards, between national identity and a romantic view of nature… ‘green and pleasant land’ of William Blake’s famous hymn, Jerusalem, as both the true home and the essence of Englishness (A. Hansen, 2010, p. 152).

National identity-making through the rural imaginary is about culture and the celebration of what it means to be German or English. It is also ideological; it is about the promotion
of particular interests and political agendas. In the world of advertising, rather than national interests and agendas, the rural imaginary now promotes the commercial interests and agendas of multinational corporations. The formula may be the same but the intentions around the (typically white, Anglo-Saxon) rural imaginary are very different, as are the outcomes; not nation-building but cultural homogenisation. As Hansen (2010) further points out:

… the achievement of advertising deploying nature imagery is to channel the yearning for authenticity or identity or the pure goodness of nature into consumption: purchasing the advertised product becomes a means of ‘buying into’ the identity or the authenticity ostensibly anchored in the idyllic rural past (p. 153).

Advertising on TV has also foregrounded classical representations of nature in response to the changing cultural and economic landscape. So while ads optimistically looked forward to a “techno-scientific urban society” between the 1940s and 1970s (A. Hansen, 2010, p. 147) those produced before this period—a time of social upheaval and economic uncertainty—and also after this time (coinciding with increased anxiety about the decline of nature places) are more likely to look back to a safer idealised past (Salvador, 2011). The focus is now on nature as refuge, on harmony between man and nature (Aupers et al., 2012); attention shifts to “nostalgia for a perfect past” (Slater, 1996, p. 116).

The classical framing of nature as an imaginary ideal associated with simplicity, harmony and ultimately a refuge from current (cultural) reality is nowhere more strongly in evidence today than in the high end advertising of perfume, overseas travel destinations (Settekorn, 2006) and most of all high powered and four-wheel-drive vehicles (Aupers et al., 2012). As Lerner (1999) concludes, cars realise escape from the realities and discomforts of urban living, enabling people to travel back into nature.

Figure 12 Honda The Impossible Dream [YouTube screenshot]
3.7.2 Drama: nature sets the scene

A number of elements associated with classical representations in the drama media genre echo those elements already discussed in the micro-drama context of advertising. As such, these demand only brief comment. For example, in her excellent *Flight Maps*, Price (2000) examines three 1990s dramas (*Dr Quinn, Twin Peaks* and *Northern Exposure*) and each programme, she suggests, presents nature as a ‘place apart’ and as a ‘bastion of the Absolute’ (p.234). Price argues that such absolute authority is central to the myth of the American identity, “[n]ature is not so much a set of specific places or evolutionary details but rather an essential and Absolute Force” (p.219).

Other writers on drama and nature also point to TV and film-makers on-going interest in nostalgia; the ‘unblinking eye’ towards the past (Lizardi, 2014) and the significance of sentimentalised nature which was so strongly evident in the Disney productions of the mid-twentieth century. Whitley (2008) discusses the crucial role of the pastoral “within all of Disney’s fairy tale adaptations, as well as in *Bambi*, aspects of *Fantasia*, and…*Song of the South* (p.8).” In his essay on ‘The Bambi Syndrome’ Richard articulates Disney’s interest in the classical representation of nature as this ideal is most broadly defined:

> According to biological anthropologist…Cartmill: “[Bambi] portrays the natural world as a realm of peace and beauty, saturated with innocent love in all its varieties”…Bambi nourishes our longing for a simple, uncomplicated, romantic world and satisfies our desire to find in nature the perfection of Eden (para 10, 18).

In addition to these repeated micro-drama motifs of nature as absolute force, nature’s role in identity-making and also nature as an antidote to culture, the longer TV and cinematic dramatic format also introduces an opportunity to insert additional classical nature elements. Nature within the context of character development, mood setter and scene enhancer are all described by Price (2000) in relation to the TV show, Dr Quinn:

> The plots just about write themselves. It is Nature that encourages Mike’s free spirit and strength of character. It is exactly Sully’s intimacy with Nature—and lifelong distance from cities and civilization—that renders him so intuitive and wise (p.218).
Jackson (2008) too addresses this character development and scene-setting role of nature within the movie genre and he describes how landscape (the set) not only establishes place, time and mood but also “[b]y means of shifts in lighting and sound and perspective, [it] actually creates the players, identifies them, and tells them what to do…” (p.155).

While now somewhat dated, it seems appropriate to end this section on classical nature representations within the dramatic genre with Disney, as it was Disney who produced two of the most successful movie cartoons of the twentieth century which also exemplify this entanglement of classical nature, character and narrative. Whitley (2008) discusses the representation of Snow White as a modern-day Thoreau, a lost individual who undertakes a journey of self-discovery into the wilderness and is in turn defined by this nature experience (p.12). Bambi too is a story defined by wilderness and it is in this pristine, untainted environment that the young protagonist comes of age (Mitman, 1999).

Enduring historical representations of nature
This section has re-visited the three enduring cultural representations of nature as these have now migrated on-screen. Each of these idealised representations or framings, as resource, Arcadia and wilderness (the latter now frequently entangled) has a long cultural heritage and all three natures have ongoing value and significance on-screen today. While it has not been possible (nor would it have been appropriate) to provide an exhaustive examination of each of these enduring representations on-screen and as mediated through all media genres (a task which is left to others) it is hoped that there is sufficient evidence to justify the claim that enduring representations of nature have had and continue to have implications for how people think about the natural world. In short, mass media-ted representations of enduring images of nature mattered and continue to matter.

In the following section, the focus extends beyond these historic nature framings to two similarly pervasive cultural representations that have not only been promoted on-screen but which have been enabled by mass media. Real nature has its genesis in, and continues to be most strongly promoted in nature documentaries and films, while nature as risk—both vulnerable and vengeful—rose to prominence primarily through the news genre.
3.8 Nature as real on-screen

On-screen representations of the natural world are nowhere more strongly in evidence than in nature documentaries and wildlife films. Furthermore, as Lindahl Elliot (2008b) points out, “[f]ew if any television genres can equal the combination of global reach and cultural authority that is enjoyed by natural history documentaries” (para 1). The global reach of nature documentaries resonates with Dingwall and Aldridge (2006) who claim that nature programmes are a “major part of the international media industry” (p.132). Pierson (2005) notes that Discovery Communications is the fifth top-ranked cable TV network in the world with over 86 million subscribers; a figure which rose to 98 million just three years later (Lindahl Elliot, 2008b). As Champ (2002) writes, the wildlife genre “has literally exploded in recent years” (p.282).

There is little doubt that nature documentaries and films reach a worldwide audience and that this nature genre is imbued with considerable cultural authority. This influential, expert status is derived in part from the truthfulness or accuracy which was associated with the earlier static image. As Bagust (2008), writing on the wildlife genre argues, “[t]he prestige of documentary as screen genre has benefited from the special historical claims made for the veracity of the photographic image” (p.214).

3.8.1 The photographic image: combining science, nature and truth

As early as the sixteenth century the camera obscura mediated experiences of the physical world. While this ‘linear optical system’ (Crary, 1990) made it possible to abstract images it was unable to preserve images of what was ‘real’ (Williams, 1974). As a result, the influence and authority of this image-making technology was limited and by the beginning of the nineteenth century it had become “too inflexible and immobile for a rapidly changing set of cultural and political requirements” (Crary, 1990, p. 138). These rapidly changing requirements coincided with what is now generally recognised as the modern era; a set of changing social, political and economic circumstances coupled with unprecedented technological developments which swept across Europe and North America between the mid-nineteenth and early twentieth centuries. New mechanised systems of transportation and communication brought massive change to an increasingly
centralized urban-based population. And, as Boorstin (1992) describes, the symbolic environment too was changing:

These events were part of a great, but little-noticed, revolution–what I would call the Graphic Revolution. Man’s ability to make, preserve, transmit, and disseminate precise images–images of print, of men and landscapes and events…now grew at a fantastic pace. The increased speed of printing was itself revolutionary. Still more revolutionary were the new techniques for making direct images of nature (p.13).

These new techniques of image-making and dissemination changed the way in which ideas about the world, including the natural world, were constructed, circulated and consumed. Macnaghten and Urry (1998) point out that within this new environment images were “given extraordinary mobility and exchangeability” (p.118) and the mass reproductive and circulation possibilities meant the image had the potential to democratise human experience (Opie, 2006; Solnit, 2003). More than anything, however, the camera at this time was viewed as an impartial mechanical device and the photographic image–the visual representation of what was ‘real’–was rapidly incorporated into the discourse of science:

Of all modes of representation… photography… is the one most easily assimilated into the discourses of knowledge and truth, for it is thought to be an unmediated simulacrum, a copy of what we consider ‘real’… (Luke, 1997, pp. 42-43).

By using the photographic image in the pursuit of knowledge, science imbued this reproductive process with an unparalleled level of authority and the implications of this blurred photo-scientific objectivity were to be widely significant, not only for how the world is perceived by scientists, but also for society more generally. As Sturken and Cartwright (2001) note, “[t]he invention of photography was greeted by such proclamations of its verisimilitude, that some even suggested it had redefined human vision altogether” (p.118). This was never more so the case than in the early days of photography, when colonisation was at its height:

Photographs were not viewed as metaphors of experience, but rather as sections of reality itself. If photographs showed gigantic trees and awe-inspiring mountains, then all trees were gigantic and all the mountains awe-inspiring. When photographs depicted Indians as ‘savages,’ Indians were confirmed as savages (Lutz & Collins, 1993, p. 28).
...photos did more than represent reality... they are creating a reality (Lester, 2010, p. 141).

In addition to this historic link to scientific truthfulness, nature documentaries and films have also accumulated authority over time, through their more recent association with organisations which are respected and admired. The wildlife films which dominated in the USA in the 1950s and 60s and the nature documentaries, most notably those produced by the BBC Natural History Unit throughout much of the twentieth century, were not of the same order. Both aimed to reveal the natural world in entertaining and educational ways but this was impacted by the different production environments, together with the differing cultural traditions within the two countries. Despite these differences nature documentaries and wildlife films were and continue to be admired as high quality productions by respected broadcasting agencies such as Disney, National Geographic and Discovery Communications (in the USA) and, most significantly, the BBC.

It is these key elements–a strong focus on the natural world, international reach and authoritative status–which suggest that these nature productions more than any other screen media genre have influenced and continue to influence how nature is perceived (Dingwall & Aldridge, 2006). As such, this section on real nature attends to wildlife films and nature documentaries and how these nature media have variously represented and arguably mis(re)presented the natural world–what Orner (1996) terms the mythopoeic or mythmaking force of the nature documentary—to mass audiences for almost a century.

3.8.2 Nature documentaries and wildlife films

Much has been written on the history and development of nature filmmaking in the West. Two major authorities are American film critics, Gregg Mitman and Derek Bousé. More than any other nature commentators, these writers have explicated how screen images mould “our perceptions of and attitudes towards nature” (Willoquet-Maricondi, 2010b, p. 8). In Reel Nature: America’s Romance with Wildlife on Film, Mitman (1999) provides an extensive history of the nature film genre and attends to the tension between authenticity and artifice; the idea of nature as pristine and set apart and the “changing aesthetics and visual strategies used by filmmakers to frame wild animals and their environments” (Dunaway, 2010, p. 274). Mitman even suggests that “by eliciting an
emotional relationship with wildlife on screen… [nature programmes] helped popularize the conservation movement” (ibid.).

In his book, *Wildlife Films* Bousé (2000) discusses the development of this nature genre and attends to what he describes as the common ancestry shared by both wildlife films and natural history documentaries. Bousé argues that the genesis of natural history filmmaking in general lies, not within the documentary tradition, but within the much earlier traditions of animal storytelling and nature writing; a sentiment echoed by Ivakhiv (2008). He cites the wildlife film or nature documentary as the “cinematic equivalent of nature writing” and also natural history study, as realised through text, scientific illustration and photography (p.2). Bousé, and later Bagust (2008) attempt to position the narrative and thematic elements which are associated with nature filmmaking (and which are discussed below) within the context of these much older traditions; cultural practices and framings of nature which have long been part of culture and tradition in the West. In their respective and detailed analyses of reel nature, Professors Mitman and Bousé portray a natural world that is, as Ivakhiv (2008) suggests, “very different from that which can actually be found ‘out in nature” (p.2).

**Hollywood conventions and the blue chip documentary**

The tensions between authenticity, education and the need to entertain are evident in the two nature programming sub-genres: the wildlife film and the nature documentary. In the USA, the wildlife film, with its emphasis on “mass appeal and economic profit” readily conformed to the “conventions of Hollywood entertainment” (Mitman, 1999, p. 54). The early influence of Disney was also significant, shaping and codifying on-screen representations of an Arcadian, sugar-coated, natural world which was routinely populated with amusing personalities and which often followed dramatic and entertaining plot lines. The financial imperatives which encouraged this emphasis on nature as family-friendly entertainment (M. J. King, 1996; Mitman, 1999) had less impact in Britain, as is evident in the following observation:

The founders of the BBC Natural History Unit in Bristol in 1957 saw themselves as defending the Corporation’s historic educational and cultural mission against the launch of commercial television. The BBC still uses its wildlife output as one of the main signifiers of its public service remit (Cottle, 2003; Wheatley, 2003).
Its online mission statement to “inform, educate and entertain…” (Dingwall & Aldridge, 2006, p. 133).

While all programmes must entertain, the emphasis of the BBC’s mission statement (on information and education and also entertainment) reflects the very different media environment in which early British nature documentaries were produced. This nationally supported documentary genre, made almost entirely by the BBC’s Natural History Unit (at least in the early days) gave rise to what was to become the paradigmatic version of the nature programming genre—the blue-chip natural history documentary:

‘Blue chip’ is the expression used by the industry to refer to the most prestigious of the natural history sub-genres, that is, the documentaries with the highest production values… the ‘blue chip’ documentaries shown for example in the Life on Earth series …remain the industry standard bearers… [Blue chip documentaries] show animals ostensibly in their natural geographies i.e. in their ‘first nature’, the nature preferred then and still today by the documentary filmmakers for their representations (Lindahl Elliot, 2006, p. 206; Lindahl Elliot, 2008b, p. para 5).

Contemporary nature documentaries have increasingly morphed and many of the motifs associated with the blue chip genre are now evident in other nature and wildlife productions. These nature programme motifs can aid understanding of the various natures which are represented within this nature genre. They also provide an entry point into understanding on-screen representations of nature in other media genres (in drama, news and advertising) and also those nature representations which may be shared by participants in this Nature 2.0 study.

**Reel nature motifs and real nature**

On-screen nature is clearly constructed. For the *reel* nature audience, however, the most significant and defining aspect of this genre is that the natural world is made to look like the real thing, to appear “absolutely unconstructed” (Price, 2000, p. 213). By excluding the evidence of production—the cameras and technical devices, together with the documentary personnel—the medium itself can effectively be “made to disappear” (Dingwall & Aldridge, 2006, p. 133). This concealment of the “artifice of production” (Mitman, 1999, p. 155) enables the documentary filmmaker to convey the sense of immediacy to the audience; to give the viewer direct, unadulterated access to nature, possibly even conveying the illusion of being in the nature which is represented. Framing
nature in this way also gives the impression that on-screen actions or behaviours are real, in the sense that they are taking place spontaneously, independent of the camera and other external (human) influences (Arendt & Matthes, 2016). As Scott (2003) suggests, “[a]n attempt to “frame” material [nature] as being unadulterated is a primary focus, promoting the idea that the action would have taken place regardless of the camera” (p. 3).

By excluding all signs of artificiality the documentary viewer can enjoy what feels like direct, unadulterated access to nature; an unadorned, authentic experience of ‘nature itself’. And as Lindahl Elliot (2009b) argues, promoting representations of nature as unconstructed realism has become the way of representing nature. Most audiences will, of course, be aware of the framing and filtering effects of the camera (at least on some level); the nature which is on-screen is, after all, being filmed by somebody. It is therefore important that the audience, too, play their role in reading the documentary according to the prescribed norms of the genre and here, the normative reading of nature is as “unscripted, ‘natural’ and unadulterated” (Bagust, 2008, p. 219).

Documentary critics have articulated the various motifs or narrative conventions which contribute to this shared nature mythmaking. Bousé’s (1998) blue-chip nature elements are not reflective of all nature productions, nor do they map precisely to the documentary metrics articulated by all writers on the topic. However, they resonate for many and these core elements routinely provide the foundation upon which other critics, such as Scott (2003), Bagust (2008), Lindahl Elliot (2008b) and Hansen (2010) then build. The six key elements and resulting nature characteristics initially identified by Bousé (1998, p. 134) and as amended and expanded by Hansen (2010, p. 128) and also Lindahl Elliot (2008b, p. para 16), include (paraphrased):

1. **Depiction of mega-fauna**: lions, tigers, bears and other large predators…and a few other non-predators are also included. These sensational animals are also typically wild and abundant; the planet is “teeming with life.”

---

32 Lindahl Elliot (2006) suggests the plant kingdom is underrepresented - *The Private Life of Plants* “arguably worked to make the plants more animal-like to meet the genre’s thirst for kinesis and predation” [use of time-lapse photography, computerised cameras, shutter speeds…] (p.207)
2. **Visual splendour**: magnificent scenery, beautiful sunsets and stunning panoramas as a background to the animals, all of which suggest a still unspoiled, primeval wilderness. Locations are often ‘untouched,’…far from local nature.

3. **Dramatic narrative**: classic, animal protagonist-centred narrative or some version of the family romance…usually with some dramatic chases and escapes.

4. **Absence of history and politics**: no overt Griersonian-style propaganda on behalf of conservation issues and their causes: a-historical, a-political.

5. **Absence of people** (occasionally tribal, pre-industrial or ‘natural’ people, e.g. park rangers): the film-maker can occasionally appear as a character to provide the point of view, more than one or two people can…spoil the natural picture.

6. **Absence of science** (implicit): the discourse of science can entail its own narrative of research, with all its…technical jargon and seemingly arcane methodologies, which, like history and politics, spoil the picture of nature [and] natural splendour.

While not included in Bousé’s list, documentary *techniques and technologies* are also central to the creation of *reel* nature on-screen. Long lenses, wide-angle, extreme close-ups and slow motion camera shots, tactical editing processes, the inclusion of dramatic or ethnic music scores and authoritative, omniscient, voice-of-truth narration all contribute to the on-screen experience of nature as something ‘real’ (Bousé, 2000; Lindahl Elliot, 2008b; Scott, 2003); this is *reel* nature as real nature.

The following and final section on real nature examines the re-imagining of the nature documentary genre itself, as it responds to ever-changing drivers and viewer demand. These influences have resulted in different kinds of programming; derivatives which are very conscious, deliberate and strategic attempts to reshape the nature genre from two very different perspectives: the entertainment-focused *nature-tainment* hybrid and the *eco-documentary* sub-genre, where humans are now confronted by nature in crisis.

### 3.8.3 Reimaging real nature on-screen

**Nature-tainment**

By the 1990s, television producers were looking for more up-beat, MTV-style wildlife programmes (Bousé, 2000); shows which were related to the nature documentary genre, but which contained more spectacle and melodrama (Mitman, 1999). The productions
which resulted are, as Bousé describes, a “synthesis of existing forms—documentary, game show, soap opera and drama…a hybrid mix of presenter talk, verite material, dramatic reconstruction and… audience participation” (p.222). The drivers for this new quasi-nature programming genre were, once again, commercial. The ever-present need to keep ratings up and costs down encouraged (and continues to encourage) programmers to develop cheaper, more saleable and increasingly more entertainment-focused TV nature viewing (Adcroft, 2011). This has led to the development of two quasi-nature programming styles: 

- **Wildlife soap operas**, humanised, often feel-good nature dramas where human qualities, frailties and personhood of the nature subject are foregrounded (Milton, 2002) and **natura horribilis**, otherwise known as ‘Fang TV’ (Bousé, 2000) or ‘jaws and claws’ films (McElvogue). Lindahl Elliot (2006) describes this quasi-nature genre as “films about natural disasters, mutant or ‘long lost’ animals, and animal attacks” (p.222). He further suggests that this, often bloodthirsty genre, has its genesis in *King Kong* although the tradition of violent representations of nature on-screen are evident even earlier in animal killing films such as *Scene in a Rat Pit* (1906) and the even more grotesque *Electrocuting an Elephant* by Thomas Edison in 1903.

Wildlife soap operas and Fang TV benefit from their loose association with the documentaries and films produced by corporate nature giants such as the BBC and National Geographic; what Bagust (2008) describes as a “core of reliable referentiality” (p.215). These quasi-nature productions reference many of the same motifs (nature as wild, remote) but elevate these to new, high-tech, live-action, often star-studded, interactive spectacles, coupled with “dynamic editorial approaches”, “low costs and quick turnarounds” (Bousé, 2000, p. 73). Most important of all, these quasi-nature productions benefit from the transference of the “codes and conventions of documentary realism” (Scott, 2003, p. 30); they benefit from the inference of the believability or truth about the nature which is represented on-screen no matter how unbelievable or unrealistic the ‘real nature’ portrayed.

**Eco-documentary**

At the other (extreme) end of the nature documentary spectrum is the growing trend towards nature or rather environmentally conscious documentaries (Blomqvist, 2015). Much like eco-toons and enviro-movies (such as *Wall-E* and *Avatar*), eco-documentaries,
such as *The Cove* (2009) and *Blackfish* (2013), aim to present an antidote to the hyperreal, sensationalist nature-tainment productions; to make the audience more conservation-minded and even to change viewer behaviour. Hughes (2011) explores the development of this re-imaged nature documentary genre and discusses its interpretative aspects through the documentary *Sharkwater* (2006). She discusses the genesis of the eco-format with particular reference to the Stockholm Conference which recommended, “the use of traditional and contemporary media to ‘create the awareness which individuals should have of environmental issues’ (United Nations 1972)” (cited on p.736). Hughes also discusses the potential for this media framing to raise awareness and understanding by ‘narrowing the gap’ (in this instance) between humans and sharks. As Hughes (2011) suggests, the eco-documentary:

> …reinforces the visual representation of a physical environment… and of a cognitive environment that is developing, making environmental issues more visible, and envisaging greater cooperation between individuals and across communities (p.748).

Once again the film team (screen writers, camera and editorial staff) are staging on-screen nature but the intention of these politically-minded productions is no longer merely to entertain or thrill but rather to establish (or even re-establish) a human-nature connection; to create conservation support for a disappearing natural world.

Nature documentaries, as has been shown throughout this section, give “impressions of reality” rather than “convey reality in its fullness” (Bousé, 2000, p. 7). And whether those impressions will continue to promote real nature as unpeopled, untouched, abundant, spectacular, wild and remote or whether viewers will increasingly be presented (and choose to turn to) real nature as nature which merely entertains or alternatively one which increasingly challenges and confronts remains to be seen.

The following section introduces the fifth and final significant cultural representation of nature which is explored in this chapter. Representations of nature as risk (both to humans and also at risk from humans) have, like representations of real nature, been enabled by mass media and continue to be promoted through mass and also new media technologies.
3.9 Nature as risk on-screen

Mass media also represent nature as risk. This is a double-sided representation, where nature is both the perpetrator of dangerous incursions into the cultural space (as flood, disease and animal attack) engendering human anxiety and even fear and also the victim of the damaging effects of human influence, resulting in globally significant outcomes, such as pollution and animal extinction. In her study on changing nature representations in the documentary genre Wall (1999) identified the emergence of hazardous nature representations in documentaries, both as nature as threat (in the 1990s) and nature as fragile and vulnerable (from the 1970s onwards). These are the representations of nature in the media— as perpetrator of danger to, and also victim of, culture—which make up the Janus face of nature as risk.

The double-sided Janus face of nature as risk

The Roman God Janus is depicted as having two faces, as he looks to the future and to the past. Janus was used to symbolise changes in time but his two faces could also indicate other transitions, such as from one state or condition to another. While nature as ‘threat, danger or risk’ and nature as ‘threatened, in danger or at risk’ does not contrast a past state with a future one, the idea that the two conditions are closely linked and in some sense are reflective of one another, resonates. For example, the great white shark which threatens the lives of Australians surfing off the New South Wales coast and is vilified in the news today is likely to be the same animal whose necessary culling is the source of massive public outrage in tomorrow's evening news. This is where notions of 'risk society' (Beck, 1992; Giddens, 1990) come into play. The shark threat is effectively one which derives from, or is at least exacerbated by, the modern world and its human pressures (here, tourism and increasing numbers of people encroaching on ever-decreasing nature spaces) and which must be managed by society; at the micro level—kill the individual shark-as-perpetrator—or on a macro scale, such as through shark culling programmes.

The double-sided Janus face of nature as risk (as both perpetrator of human harm and the victim of cultural excess), together with select theories and theorists who respond to risk society, pestilence and also nature as ‘environment’ are examined in the sections below.
These discourses are outlined as they inform and influence understanding of nature as risk in the media in general and the news genre in particular.

3.9.1 Globalisation, modernisation and risk society

Globalisation speaks to the significant and disruptive changes associated with modern living; what Giddens (2014) describes as ‘high opportunity, high risk society’ (p.13). Others associate globalisation with “increasing fragmentation of social conditions, turbulence and restructuring within society” (Pred, 1998, pp. 150-151) and more recently, “accelerated, intensified connections and networks [impacting] in both physical and virtual senses” (J. D. Jackson, Nielsen, & Hsu, 2011, p. 124). Sociologist, George Ritzer, simply equates globalisation with ‘McDonaldization’ (Laughey, 2009, p. 96).

Globalisation is also entangled with ideas of modernity and risk; a triad of interests brought to prominence through the writings of sociologists, Anthony Giddens (1990) and Ulrich Beck (1992). While not exclusive authorities in this area, Giddens and Beck’s ideas on global risk environments, post-industrial modernity and reflexivity–concepts which were both “coined and appropriated” by these authors (C. Bryant & Jary, 2003, p. 265)–their theories and frameworks have been widely influential. And importantly, within the current context, both writers address nature as risk within their broader theoretical expositions. In his discussion on modern day politics, Giddens notes that “the overall aim of third way politics [a course between the right and left] should be to help citizens plot their way through the major revolutions of our time: globalization, transformations in personal life and our relationship with nature” (cited in C. Bryant & Jary, 2003, p. 267).

Central to this relationship with nature (within a much wider theoretical framework) is the concept of societal risk. For Giddens (1998) the idea of risk society, “is a society increasingly preoccupied with the future (and also with safety), which generates the notion of risk” (p.209). Beck (1992) similarly defines risk as “a systematic way of dealing with hazards and insecurities induced and introduced by modernisation itself” (p.21). Both authors approach the concept of risk society from the perspective of globalisation and modernity (and all that these concepts entail) and central within their respective frameworks is the idea of reflexivity. It is reflexive modernity which most distinguishes the modern era, where threats and dangers once perceived as “strokes of fate…attributable
to an ‘other’–gods, demons or Nature” are now ‘politically charged” (Beck, 1992a, p. 98). As Giddens (1990) suggests, threats and dangers emanate not from nature but “from the reflexivity of modernity” (p.102); differentiating between the pre-modern world of ‘trust’ and the “modern environment of risk” (ibid.). As Drenthen, et al. (2009a) describe:

Modernity’s technological power trip has been so ‘successful’ that it has become a danger for the (global) natural environment on which it essentially depends. As a consequence, modernity has become thoroughly reflexive, to use an expression of German sociologist Ulrich Beck (1986): we have developed an awareness of the incalculable and negative side-effects that our own actions have on the natural environment, in which we are nevertheless destined to sustain ourselves (p.8).

And as Bryant and Jary (2003) suggest, for both Giddens and Beck the implications of the modern environment are significant for the social and natural world:

Disorientated or not, men and women in an age of high modernity are not subject to the fate and fortune of their premodern forebears; instead institutional and personal reflexivity, including the calculation of risk, inform social practice and continue to have a bearing on the course of events (p.261).

The reflexivity which underpins discourses on modernity and risk may or may not be evident in the news reporting of nature and events associated with the natural world. Indeed, it is routinely a lack of reflexivity in the media in general and news reporting in particular that is, at times, the point at issue in much the same way as the documentary genre is criticised for its claims to reality, while selectively representing visions of nature that will appeal to mass audiences, reflecting and reinforcing current beliefs and expectations about the natural world (Lindahl Elliot, 2009b). Similarly, nature as risk in the news often lacks this critical context or reflective commentary and is framed in such a way that while it informs about nature, even more importantly, it entertains through the stories and images of nature which are shared.

Nature as risk in the news
The Janus face of nature as both threatening and threatened is increasingly evident in documentaries, in drama and more recently in shows which combine fact with fiction. For hybrid TV shows such as conservation-minded eco-documentaries, together with nature-tainment and the relentlessly popular disaster movies, a natural world which is both threatened and threatening is routinely the main event. Most of all however, nature
representations as threat, danger or risk or conversely as threatened, in danger or at risk are most frequently and consistently the business of print and television news.

There are many ways that nature as risk is manifest in the news. However, when surveying the literature two recurring themes were evident, namely, nature as boundary-breaching ‘danger, disease or disaster’ and nature reimaged as endangered ‘environment.’ Before attending to nature as both perpetrator and victim in the news it is helpful to outline key theories associated with news media content and the framing of this content in the news.

3.9.2 News media: what and how to think about nature

News media are in a powerful position to influence how people think about the world; they are as Castells suggests, “the key structuring, intermediary in the conduct of public affairs” (cited in Lester, 2010, p. 3). But news media do more than influence public affairs. They also play a key role in how the world, including the natural world, is perceived. As Lippman argued in 1922, “it is the news media that sketch so many of [the] pictures in our heads” (cited in Dickinson et al., 1998, p. 26). These pictures reflect not only the content shared, but also how this content has been framed. These elements are not unique to news media; indeed, they are integral components of nature as representation regardless of the particular mediating technology or media genre. However, in much the same way as media advertising takes the classical nature ideal to new heights (nature representation on steroids) so too do news media shine a very bright light on what nature the viewer should think about and how to think about this nature. And significantly, news media routinely interpret often complex issues about the natural world to very large numbers of people in very short spaces of time.

News content: what nature to think about

Media scholars writing on the influence of news media routinely frame understanding around the concepts of gatekeeping and agenda-setting (J. Bryant & Oliver, 2008). They describe how news media are gatekeepers to what people know, controlling the flow of messages which are sent and received. News media filter the information which is made available, a process determined by the perceived value of that news, as determined by the news journalists and producers. Once selected as newsworthy this information is shared
with the audience and how this news is represented will define which nature the audience is encouraged to think about.

The idea that certain ideas about nature and the world more generally are given prominence over others implies that the news media are well positioned to influence what large numbers of ordinary (rather than nature-loving) people think about people, places, events and about nature; news media effectively structure and present particular nature realities. As Sparks (2012) points out, “the news media set the public agenda. Their coverage of issues helps to define for the public what they should be thinking about on [any] given day” (p.212). And as Cohen famously claimed, the news “may not be successful much of the time in telling people what to think, but it is stunningly successful in telling [the public] what to think about” (cited in Baran, 2012, p. 294).

Gatekeeping and agenda-setting are useful concepts when examining media news content but audiences not only consume a certain news diet they also receive selected news items in particular ways. How media news is framed contributes to the social construction of different perceived realities about the world, including the natural world.

News framing: how to think about nature
Framing is an important concept within media effects research and is, as Bryant and Oliver (2008) suggest, a ‘kissing cousin’ of agenda-setting. Tankard usefully defines framing within the context of news media as, “the central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration” (cited in Sparks, 2012, p. 213). To illustrate the point, Sparks includes an example of how the same newsworthy situation, a heavy snowfall, can be variously represented in the news to produce either positive or negative perceptions of this natural event. A positive representation might include children sledging and photos of the visual splendour of nature (now blanketed in snow) while a negative representation of the same event might include images of blocked roadways and stories about people being unable to get to work (p.213). This example illustrates how framing suggests or even encourages audiences to think in certain ways about particular issues or events. Furthermore, as Robert Entman (1993) argues, framing involves selection and salience of a particular reality:
…to frame is to select some aspect of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described (cited in J. D. Jackson et al., 2011, p. 131).

The following sections examine how news media have variously selected and framed the natural world. To present a comprehensive examination of nature in the news is, of course, beyond the scope of the current study (if not impossible to achieve). The focus instead is on how news media have routinely represented the natural world within two overarching media-centred risk discourses as:

- **Boundary-breaching threat**: dangerous animal, disease and ‘natural’ disaster;
- **Endangered environment**: global issues such as pollution and climate change and less frequently, conservation and protection of nature spaces and species.

### 3.9.3 Boundary-breaching threat and endangered environment

**Nature as risk: boundary-breaching threat**

Representations of threatening or hazardous nature are evident across all media genres, but nature which crashes into, threatens or otherwise tests the boundaries between humans and nature is ideal content for news. This section highlights threatening nature in the news as: (a) *dangerous* - animals as threat to human safety; (b) *disease* - nature as threat to human health; and (c) *disaster* - ‘natural’ events as threat to human populations.

**a) Dangerous nature: animals as threat to human safety**

Cassidy (2012) points out that media framings of animals as threatening or dangerous typically foreground boundary disruptions which may be “spatial or otherwise” (p.207). The media may also focus on real or imaginary characteristics of the animal or species in question, while simultaneously downplaying or even ignoring other, often more complex dimensions of the actual risk situation or event under scrutiny. There are numerous and varied examples of threatening animals in the news and stories may be framed as ‘dangerous animals in the human space’ or alternatively ‘humans in the dangerous nature space.’ In their article ‘Fox tots attack shock: urban foxes, mass media and boundary-breaching’ Cassidy and Mills (2012) suggest that “when those assigned to the “outside” [of culture] come in, the response is stark” (p.7). There is no clearer example of this statement than the urban fox news coverage which the authors then discuss. They describe
a fox attack on twin baby girls in inner city London and how this event is subsequently represented and interpreted by the news media over a protracted period. The question of boundaries—urban/rural, wild/domestic—dominates the various discourses that come into play and the vilification of *vulpus vulpus* is relentless. In this incident the fox, already an ambiguous creature in the British cultural imagination, transgressed boundaries of both place and person and the outrage which emerged was the result of the, at times exaggerated representations and claims which were evident in the news reporting of the event, the ‘offending’ animal and *vulpus vulpus* more generally.

A second example of dangerous nature as newsworthy nature reverses the above situation. When humans go into the ocean they choose to cross the human/nature boundary and to enter wild nature. Despite this fact, when nature misbehaves and becomes a danger or a threat to humans in this nature space, the die is cast. A recent example in this area is the news reporting of shark attacks in Perth, Australia and the decision to lure and then cull all sharks over three metres in length, regardless of whether the animal poses a threat or not (Shears, 2014). The main target species is the great white shark but the baited hooks, used to catch the sharks, also catch a range of other species. In this media representation of dangerous nature, the discourses that come into play no longer revolve around the animals’ ambiguous status in the cultural imagination (the fox and the shark have very different cultural histories) but around its status as an endangered species. Sharks may be difficult to love, but like their charismatic mammalian equivalents, such as the polar bear and the tiger, they occupy a critical position in the web of planetary life. This fact, together with the indiscriminate nature of the culling process has meant that discourses around conservation are foregrounded in the media, together with the ‘celebrity humans’ who increasingly frame themselves within these politically-charged nature debates.

Two undersized sharks have been caught on baited drum lines…as part of the controversial ‘catch and kill’ policy…entrepreneur millionaire, Richard Branson has also waded into the debate… (ABC News, 2014).

*Figure 13 Shark baiting news controversy [ABC News screenshot]*
b) Disease: nature as threat to human health

While the fox and the shark may pose a danger to individual humans when the human/nature boundary is crossed other species are newsworthy for posing a different and potentially more significant threat to human life; animals may be the harbingers of disease. In the developing world this fact barely registers as news. Sleeping sickness, dengue fever and most of all malaria, which “kills over 1.2 million people annually” (WHO, 2014) are endemic in the poorest parts of the world, such as Africa and southern Asia and the majority of victims are very young children (ibid.). These factors, i.e. the poor locations of these vector-borne diseases (primarily carried by the mosquito and tsetse fly), the endemic nature of these diseases and the age group which is most affected normalises this risk to the point that it is seldom newsworthy. Unless there is a breakthrough in the management of the disease or better still the means to eradicate the disease, insects as risks to human health rarely constitute newsworthy nature.

On the other hand, when disease threatens humans in the Global North, as a result of modern, intensive farming methods and the economy is threatened, the newsworthiness of the situation changes dramatically. Cassidy (2012) discusses the polarised discourses associated with bovine TB in the UK, where the badger is both admired as national icon (and should be protected) and despised as spreader of disease (and must be eradicated). Alternatively, in her article on ‘Foot in Mouth: Animals, Disease, and the Cannibal Complex’, Tiffin (2007) discusses how outbreaks of BSE or mad cow disease are “widely represented in the media as disasters or catastrophes” (p.11). And, as she suggests:

The world-wide panic occasioned by outbreaks of BSE was…incommensurate with the number of human fatalities incurred. This apparent over-reaction can in part be accounted for by BSEs simultaneous disruption of cherished “boundaries” between those categories…upon which our human self-definition depends (ibid.).

Outbreaks of BSE are also symptomatic of the risk society, as discussed by Beck and Giddens. This disease is not ‘natural’ but instead an inevitable consequence of modernisation and technological development and this situation must now be managed by society; these discourses and controversies play out in the news media. Of course, boundary-breaching nature does not only apply to nature as species. It also, often spectacularly, applies to non-living nature; to nature as extreme weather event or disaster.
c) Disaster: natural events as threat to human populations

Critical discourse analysis, together with theories associated with media framing and risk society are also used to understand the third theme associated with hazardous nature representations in the news media. Natural disasters and extreme weather events similarly breach the nature-culture boundary and are ideal content for the news. These events are intrinsically dramatic, often visually spectacular and frequently of limited duration, enabling the news to move on to the next new and exciting story. This section presents the newsworthy aspects of natural disasters and extreme weather events, highlighting how various representations of these catastrophic events are presented in the news media.

In his study which contrasts the framing of natural disasters in factual entertainment and the news, Campbell (2013) suggests that ‘natural disaster’ is a term generally used “to refer specifically to disasters relating to natural hazards, such as earthquakes and volcanoes” (p.1-2). Smith (2006) also points to the significance of location when considering whether a natural event is a disaster or not, “[a] large earthquake in the Hindu Kush may spawn no disaster whatsoever while the same intensity event in California could be a catastrophe” (p.1). For the news media, these natural events-as-disasters are significant and newsworthy and should be reported as widely as possible. More than this these—often highly dramatic and visually stunning events—also provide opportunities to attract large audiences and to boost TV ratings. The media must effectively sell news and it is this commercial imperative (Aoun, 2005) which drives the nature representations associated with natural disasters; the stories and images which are shared.

Natural disasters, such as earthquakes, tornados and floods have “spectacular and dramatic potential for the news” (Doring, 2006, p. 166). Most notable here, Nam (2013) argues, is Fox News, a major broadcasting network which packages coverage of international natural disasters in “spectacular fashion with fast-paced sound effects, stunning computer-generated images, and flying captions” (p.165). The spectacularisation of an already arresting catastrophic event which some critics argue transforms natural disasters and extreme weather events into ‘porn’ (Aoun, 2005; Campbell, 2013) is commonplace in disaster news reporting around the world. It is also one of several disaster motifs which make these natural events so visually engaging and widely appealing. Two other key elements which can impact on this mass appeal include
the human story (splicing more engaging and meaningful personal narratives into the disastrous nature space) and the location of the event (natural disasters often have a greater impact in remote, poorer areas, although natural disasters occur throughout the world). When natural disasters do strike ‘close to home’ images may still be spectacular but the media are also more likely to engage in dialogue around the underlying causes and implications of these major disruptive events and this may be reflected in the representations of ‘nature as threat’ which are shared. These discussions may now even challenge the naturalness of these so-called natural disasters.

While drawing a line between the natural world as threat, danger or risk and the society which is threatened, in danger or at risk may be becoming increasingly difficult to justify (in the news media and elsewhere) other lines are being drawn and these boundaries are very clear indeed. This is the world of the politically-charged, issues-based ‘nature as threatened and endangered environment’; the world of pollution, protest, conservation and protection. While nature as environment is beyond the immediate focus of this Nature 2.0 study (which attends to representations and conceptualisations of nature), it is a very visible part of nature in the news. As such, this other side of nature as risk in the news is addressed in the final section of this chapter, below.

**Nature at risk: endangered environment**

*Figure 14 I remember when there was no damn environment (Sipress, 2002)*
…humans are part of the material world. Yet what is this nature which embeds us within itself? Indeed, [many] now use the term environment in place of nature… (Lemoni, Stamou, & Stamou, 2011, p. 267).

Nature and the more problem-based environment are not equivalent concepts. The two words are, however, increasingly used synonymously and interchangeably in the media. This is most evident in news reporting, where nature is routinely packaged within the environmental discourses of pollution, protest, conservation and protection. Unlike news on threatening nature (as dangerous, disease and disaster), news about nature which is threatened is inherently political, with both a small ‘p’ (contentious arena, where different interests are represented and promoted) and a large ‘P’, political parties, NGOs and other politicised groups articulate formal and informal interests, strategies and policies.

While nature remains a difficult word to define, the idea of nature has existed in Western consciousness for centuries. In contrast, the environment is a much more recent concept; what Lester (2010) describes as “a later incarnation of nature” (p.18). Nature as environment moves beyond the focus of this study, so rather than attempt a detailed examination of environment in the news, this final section touches on two aspects of this topic: when and why the ‘environment’ arose in the public consciousness (emerging as the voice of a more ancient and silent nature); and environmental agenda-setting in the news, with regard to how certain representations are foregrounded over others.

When the environment emerged

The shift from nature to environment has been explored by a number of writers with an interest in the natural world including UK sociologists, Macnaghten and Urry(1998) in their acclaimed Contested Natures and Australian media theorist, Libby Lester (2010) in her more recent book on Media and Environment. Lester navigates through a sea of historical figures and events which might suggest the moment in which the environment entered Western consciousness. For some, she suggests, it began in the nineteenth century with the writings of American nature
writers, Henry Thoreau and John Muir or possibly “with romanticism and its reactions against the science of the Enlightenment (Hay 2002: 4)” (p.18). Alternatively, the environment may have emerged much more recently, along with the publication of Rachel Carson’s *Silent Spring* (1963), the Earthrise image, taken during the Apollo 8 mission in 1968 (figure 15), the international pollution incidents in the 1960s or the first Earth Day, held in 1970 (p.17-18). Macnaghten and Urry (1998) had earlier tracked a similar path in their examination of the “invention of nature as the environment” in Britain (p.51) and they write of this new entanglement of nature with urbanisation and modernisation:

…post-war policies were framed within the three durable discourses of aesthetics, amenity and science. Concerns about nature were perceived as largely distinct and separate from each other, as well as from broader economic considerations of progress and modernisation…nature was seen to exist away from cities and cites of production. It is significant that these priorities were embedded both in media and policy discourses and they remained largely unquestioned by the public. However, as we argue…a new discourse centred on what has become known as ‘the environment’ was rapidly emerging on the horizon in the early 1960s, particularly in North America (p.44-45).

Inextricably linked to this emerging concept is the dissolution of the human-nature boundary (Allan, Adam, & Carter, 1999; Lindahl Elliot, 2006) and also active concern for an environment now perceived to be under threat by the processes of modernisation. This active component is significant, as is evident in Macnaghten and Urry’s (1998) study. Their examination of the rise of ‘environment’ is founded on interviews with key British activists in the 1970s and 80s; for these writers the environment and environmentalism are inseparable. Also tightly bound to this concept is the idea of working to conserve the environment. The related ‘conservation’ concept broadly encompasses human concern with the health of the planet as realised through diverse plant and non-human animal communities flourishing within healthy, natural and sustainable environments. At its most basic, conservation is about humans living *with* (rather than endlessly exploiting and polluting) a finely balanced natural world in ways that are more connected and which enable a profoundly different planetary future.

*Environmental agenda-setting and influence*

Few would deny the powerful role that news organisations such as Fox, the BBC and the ABC in Australia, have in defining environmental problems and suggesting which environmental issues audiences should think about. As Dunaway (2010) argues:
...powerful media organizations define environmental problems to mass audiences and the interaction between multiple publics and counter publics in reinforcing or contesting dominant meanings (p.281).

Lindahl Elliot (2008a) provides an early but striking example of this power to influence a mass audience against the flow of mainstream opinion in his essay ‘About the Mass Media and Environmental Activism.’ He describes how a CBS interview subtly reverses the nation-wide (American) media assault on Rachael Carson who, following the publication of Silent Spring [in 1963], was being relentlessly mocked and ridiculed. The news programmers pitted her favourably against a chemical industry representative and in so doing, Lindahl Elliot suggests, they changed public perceptions of Carson and even more importantly, changed the way people thought about the environment.

While media organisations have the power to influence public thinking about the environment, news and other programmers do not have absolute and exclusive control over how environmental issues are represented to the mass audience. Lindahl Elliot further (2008a) outlines what he describes as being the (at times) “fraught and contradictory co-evolution” of media and environmental interest groups (para 29), leading to a more symbiotic-type relationship between environmental agencies and the news media. Environmental NGOs increasingly work alongside the media, not just to insure that their interests are represented on-screen, but to actively promote these interests. Greenpeace emerged in response to the conservatism of 1960s Britain and was one of the first groups to work successfully with the media to further its own interests; how, where and when its environmental concerns were to be represented in the media:

Greenpeace was the most successful and high profile of this new generation of groups leading the movement in its reorientation towards media... The media-movement relationship, if an uneasy one, was born (Lester, 2010, p. 33).

Whether the concepts of environment or conservation or any of the attendant considerations touched upon in this section are flagged by the student respondents in this ‘nature’ study cannot be known in advance. For now, therefore, it is sufficient to recognise and to reassert that nature as ‘threatened, in danger or at risk’ in the media is increasingly framed as the more politicised and problem-based environment.
In summary
As outlined in the chapter introduction, the focus of this Nature 2.0 study is on representations of nature and young adults’ conceptualisations of nature, as realised online. This chapter on nature as representation has attempted to contextualise understanding of the first part of this interest by providing an overview of the most significant and enduring cultural natures which have been and continue to be represented through different media. In responding to this research interest (and to research questions one and two), this chapter has explicated enduring cultural representations of nature (on canvas and in print) and also more recent representations as these have appeared and continue to appear on-screen. In total, five cultural nature themes have been identified and discussed. Three of these (Arcadia, wilderness and resource) are routinely addressed in research which examines the human-nature connection. Two further nature themes, which have largely been enabled and promoted by mass media were also identified and discussed. Nature as real is closely associated with the documentary genre and nature as risk similarly has a strong connection with one mass media genre in particular: the news.

These three + two nature representations—as suggested others researching the human-nature connection have yet to bring these themes together within a single study—are widely evident on television and in film and are culturally significant. As such, these enduring and more recent representations will be used to contextualise, but importantly not constrain, understanding of the nature representations which are selected and shared by the participants of the Nature 2.0 study; representations which approximate the students’ own conceptualisations of nature.
CHAPTER 4

CONCEPTUALISATIONS OF NATURE

4.1 Introduction

"What we think about the natural world is the most precious thing we have."
(David Attenborough cited in Hoare, 2012, p. x)

In this chapter attention shifts from how nature has been and continues to be represented through various media-ting technologies, to conceptualisation of nature; how people think about nature, in terms of these cultural representations. Conceptualisations of nature attends to a stage before more concrete or measurable human knowledge, attitudes or behaviours in response to nature. This chapter addresses three key areas of interest:

a. Conceptual considerations: discussing the challenges associated with terminology and language, in an area of research which is fraught with ambiguity. Also examined are the stability of nature visions (which ideas are being examined and why) and also linking thoughts to actions i.e. why research into ideas, visions or concepts of nature even matters in the first place;

b. Visions of nature studies: exploring interests which most closely align with the current study interest. These include images, concepts and most of all visions of nature, a catch-all umbrella term used for general and more nuanced research interests in this space. This section also responds to the previous chapter, examining how the three enduring cultural representations of nature have been used in different analytical frameworks within four significant Dutch studies;

c. Drivers of research: disciplinary interests impact on the research which is undertaken and the findings which emerge. This final section examines the differing drivers of research into the three key elements which are combined in this Nature 2.0 study, i.e. visions of nature (of interest to conservationists), young people (the concern of educationists and psychologists) and media as influence (primarily the focus of media scholars).
4.2 Conceptual considerations

Four conceptual considerations, based on those shared by de Groot (2006) in his essay with the same title, are significant. These are examined here, as they help provide clarity when researching within a landscape of ambiguity and complexity, i.e. when researching conceptualisations of nature. These considerations include:

- Terminology and language which can obfuscate or elucidate
- Epistemology, discipline and methodology: challenges for research
- Stability of nature visions: significance of the research method applied
- Why conceptualisations of nature even matter: linking thoughts to actions

4.2.1 Terminology and language

Clarity of language is crucial when working in an area of research where meanings can twist and bend, according to different interests and drivers. How others have variously framed conceptualisations of nature and other closely related concepts can obfuscate or confuse as well as advance understanding. Before attending to these nature framings it is helpful to restate the particular interest and focus of this Nature 2.0 study.

Conceptualisations of nature in the Nature 2.0 study

The current study interest is in conceptualisations or for variety and brevity concepts of, or ideas about nature. This very general framing of human-nature relations seldom appears within the human-nature research context, at least within the research literature which is pertinent to the current study. Conceptualisation, as this relates to the individual is, however, of interest to the psychologist, as is evident in the following observation:

The psychologist...is able to analyse the mode of operation of any sensory apparatus into a series of processes, namely, those of perceptual selection and organisation, perceptual generalisation, and, on the border between perception and thought, that of conceptualisation (Brosnahan, 1957, p. 8).

While psychological interests and concerns are beyond the focus of this Nature 2.0 study (despite environmental psychologists putting in cameo appearances), the idea that conceptualisation happens somewhere ‘on the border between perception and thought’ is
pertinent. Furthermore, this description is echoed by Dutch environmental theorists, van den Berg, de Vries and Vick (2006) who write about ‘images of nature’, a concept which approximates the current study interest. The authors suggest that images of nature can be defined as “people’s general cognition of what nature is (cf. Kaplan, 1983) …” (p.45), although the authors’ further modify this definition for their own study, distinguishing between the “rapid, unconscious cognitive evaluations” which typify landscape preference and the “higher-order cognitive structures that represent people’s conscious image of nature” (ibid.). While the current study is not framed around the inherently visual concept of images of nature, it does address a view of nature which lies somewhere between the perceptual filter (rapid, unconscious evaluation/cognition, akin to landscape preference or a nature blink) and higher-ordered evaluation, i.e. conscious, structured cognition. The rapid, perceptual aspect is relevant, as the students who participate in the online questionnaire are directed to ‘roam freely’ within an open, unbounded (inherently visual) digital environment, i.e. the World Wide Web. However, as the students are also required to select interactive websites and say why this content is indicative of nature for them, there is also a more reflective, considered and conscious component or dimension although this is not evaluative in the strictest sense; the students are not asked to reflect on the web content as being indicative of good or bad nature or to respond to nature sites that they either do or do not value.

In their article on the role of concepts of nature as communicative devices in Dutch public debates and political decision-making, Keulartz, van der Windt and Swart (2004) make the point that a common vocabulary is needed such that ideas about nature (including views and values) can be better articulated and communicated between different groups and individuals (p.81). This lack of a common vocabulary is challenging and for the current study it was vital to establish clarity around the various frameworks and concepts discussed and the interests shared. Explicating and untangling the various concepts and interests makes it possible to see where the different studies may (or may not) have value for the research and while, in the end, it is necessary to ‘step back’ from many of these other nature concept framings it was necessary to thoroughly examine these to better articulate and situate the current Nature 2.0 study within this broader human-nature research landscape.

Untangling related concepts and interests

“The words vision and image are in general ambiguous” (Settekorn, 2006, p. 174).

Four or five different, but at times overlapping, concepts which are routinely employed by human-nature researchers appeared to approximate the current interest in conceptualisations, ideas or concepts of nature. These are: (a) the Dutch natuurbeelden, variously translated as image, vision or concept of nature; (b) images of nature; (c) concepts or views of nature; and (d) visions of nature. While elements of each have informed understanding, none of these nature framings map precisely to the current study interest in nature as conceptualisation, particularly as this concept is linked to nature as representation, i.e. nature conceptualisations elicited within the media (representational) environment. Each of these related nature framings or concepts, which overlap rather than map directly to this study interest is outlined briefly, below.

(a) Natuurbeelden

‘Natuurbeelden’ is translated as either ‘image, vision or concept’ of nature (Buijs, 2009a). This concept is used by Dutch researchers writing in their own tongue (Buijs & Filius, 1998) and also in English (Buijs, Pedroli, & Luginbühl, 2006; Swart, van der Windt, & Keulartz, 2001). This initially appeared to be a useful concept; the English meaning is fluid and the various translations allow for a degree of ambiguity which could help distinguish the current study interest from that of others which use nature framings which already have established meanings. This ambiguity, however, is likely to be problematic and the Dutch term is likely to confuse the English-speaking reader.

(b) Images of nature

Like natuurbeelden, ‘images of nature’ initially appeared to be a useful concept. However, this concept is used in multiple ways by different authors and meanings shift. Images of nature can be defined as “people’s general cognition of what nature is” (van den Berg et al., 2006, p. 45) and they can be “culturally embedded and transformed through discourse and personal experiences with nature [shaping] actual nature experiences and nature-

---

34 This number is imprecise as certain framings can be difficult to separate, e.g. ‘concept’ and ‘view’ are used interchangeably within the same article.
related attitudes” (Buijs et al., 2006, p. 377). This approximates the images of nature which typically emerge through qualitative research. Images of nature can also, be portrayed as a particular conceptual structure which encompasses normative notions and values of nature (Buijs, 2000)\(^{35}\) or which links nature values, beliefs and value orientations (Buijs, 2009). Images of nature can also be a particular and well-defined component within a broader visions of nature framework, combining images and values of nature and images of the human-nature relationship. Just such a model was developed by van den Born, Lenders, de Groot and Huijsman (2001) and this framework has been used by others researching human-nature relations in the Netherlands and Germany (de Groot & van den Born, 2003; van den Born, 2008; Verbrugge et al., 2013).

**(c) Views or concepts of nature**

Buijs and his colleagues (2006) associate views of nature with images of nature, suggesting that views, “reflect the normative component of images of nature, describing views on the relationships between humans and nature” (p.377). Van Koppen (2000) takes a more generalised approach, suggesting that the term, “view of nature’ refers to any specific way of conceiving nature, including common sense concepts of nature” (p.314).\(^{36}\) Again, views or concepts of nature are applied in different ways, in different contexts and as is evident in the preceding quotation, are sometimes used interchangeably within the same study. Concepts may also be generalized nature framings, for example, Drenthen, et al. (2009a) discuss five concepts of nature derived from a New Visions Program in the Netherlands and represented on a Sciences to Humanities continuum. Similarly, the Dutch Nature Conservation Council (1993) list 11 concepts of nature, ranging from wild to modified nature (Keulartz et al., 2004). Alternatively, concepts of nature can be comprised of three distinct but interrelated elements including: cognitive beliefs (what nature is and how natural processes function); normative values (intrinsic or other value applied to nature); and aesthetic experiences about the beauty of nature (Keulartz et al., 2004). This is very close to the interests of Bang, Medin and Atran (2007) who examine the first two of these elements (cognition and normative value) in their study on mental models of nature. Finally, concepts of nature may be used to uncover people’s

\(^{35}\) Cited in Buijs (2009, p. 46), in Dutch; Buijs provides an excellent overview of images of nature studies.

\(^{36}\) While on first reading this appeared to be a useful concept, view of nature, as defined by van Koppen, conveys a more informed, considered/reflective opinion (involving higher order cognition) about the natural world than can be justified for the current Nature 2.0 study.
ideas about local, contextualised natures; ideas about routinely contested natures which are place-based and historicised:

We argue that ‘nature’ for the current delta residents is first of all a place concept, connected to an appropriation of the ‘Danube Delta’ concept, a novelty that arrived along with conservation discourse in the post-communist period (Van Assche, Bell, & Teampau, 2012, p. 170).

(d) Visions of nature

‘Visions of nature’ is increasingly used by Dutch and other European researchers working in this area of human-nature relations. Again, however, this concept can be applied in different ways and meanings which are derived can vary. Visions of nature may be used as an overarching framework, combining three discrete, but linked elements including: images of nature, e.g. as Arcadian or wild; images of human-nature relationships or worldviews e.g. dominion or stewardship; and values of nature, as either instrumental or intrinsic (van den Born et al., 2001). Visions of nature may also be used in a metaphorical and implicitly visual sense (Settekorn, 2006; Slater, 2002). Alternatively, the meaning of visions of nature may be much more open and/or contested and encompass a variety of ways in which human-nature contact has been and continues to be realised. In their book of the same title, editors van den Born, de Groot and Lenders articulate the challenge of researching in this area and they utilise the visions of nature concept to bring together the literature which responds to this challenge:

The term ‘vision’ of nature has been adopted for this book as a practical umbrella for what could also be called views on nature, implicit philosophies, ideas on nature or attitudes towards nature. These differences [which are largely the result of differing disciplinary interests] are not of great concern to us here (de Groot, 2006, p. 237).

Using visions of nature as an all-embracing umbrella concept (which includes, but extends beyond conceptualisations and other precise nature framings) is now well-established in the research literature. As such, this concept is revisited in this section where the key challenges and considerations associated with research in this area are addressed. Visions (and also images) of nature are also discussed later in this chapter, as it is the Dutch researchers who are most actively engaged in research which informs the current interest in conceptualisations of nature in the modern, digital world.
In the end, neither visions of nature (in the broadest or most articulated sense) nor any of these other nature framings precisely represents the interests of the current Nature 2.0 study. It is therefore not possible to directly compare findings from the current study with findings from any of the studies which have used these related nature framings. However, those writing about concepts or views of nature, natuurbeelden, images or visions of nature all speak to some aspect of the declared interest and, significantly, the majority are concerned with a phase of the human-nature relationship which precedes the more value-informed or active stages of knowledge, attitude and/behaviour (core interest areas of the environmental psychologist, rather than the social or cultural scientist). As such, these related research interests are significant and of value within the current study context, provided care is taken around the somewhat porous or fluid boundaries which exist between these interests and the current study.

4.2.2 Epistemology, discipline and methodology

In her essay on public visions, Anna Davies (2006) reflects on the ways in which nature-society relations have been variously diced, spliced, analysed and assessed. While she attends to the UK context, her observations are highly pertinent and thoroughly extensible to the interests and practices of human-nature visions research more generally:

As multi-dimensional constructs, environmental visions can, for example, be approached through a legion of methodological (i.e. qualitative or quantitative), epistemological (i.e. realist or social-constructivist) and disciplinary (i.e. economics, ecology or psychology) frameworks, which can appear incommensurable…Each approach defines its own context of sphere of analysis; it has its own vantage point and constructs its own vision…It is inevitable that every approach embodies a set of assumptions about what is being studied that shapes and defines a ‘research reality’ through its style and line of questioning, disciplinary traditions and individual research agendas. What is clear is that different methodologies create different conceptions of the human subject, of ‘nature’ and of nature-society interactions… (p.88).

In their Introduction to Visions of Nature, de Groot, et al. (2006) not only agree with Davies’ assertion that a variety of methodological, epistemological and disciplinary approaches to understanding visions of nature prevail but they further maintain:

Against [the] background of conceptual multi-dimensionality and fluidity, it is no wonder that scientists, too, vary much in focus when they study people’s ideas on nature…[This] volume embraces this multi-disciplinary richness. One reason is
that in the present state of the art there are no compelling reasons to consider one type of conceptualisation or one methodology superior to any other (p.10).

The introduction to this Nature 2.0 study touched on the question of what nature is, contrasting the realist/essentialist and constructionist perspectives. Realist and constructionist epistemological frameworks are invoked again here, to interrogate and better understand conceptualisations of nature or, as is more frequently discussed, visions of nature. As de Groot (2006) suggests, “[w]e may connect the concept of ‘visions of nature’ to the ongoing debate on realism versus constructivism” (p. 238).

Davies (2006) contrasts visions of nature research traditions in the USA (citing the anthropological/cultural modelling work of Kempton and his colleagues) and the UK, principally citing Burgess and others work at UCL in the late 1980s and 90s. The former, she suggests tends towards relatively stable cultural visions, which are linked to social values, although she concedes American visions are also linked to geography and ‘real nature.’ (cited by de Groot, 2006, p. 239). Davies contrasts this with her own research and that of others working in the UK where, she suggests, visions of nature are viewed as “much more socially constructed in the course of social interactions” (ibid.), although again she acknowledges that an external nature, independent of the social world, also prevails. So while constructionist approaches, such as those of Soper (1995, 1996), Macnaghton and Urry (1998) and Fine (1998) have largely attended to dynamic human action and socio-cultural practices (including interactions, experiences and institutions) together with more fluid contingencies of time and place (Davies, 2006, p. 101), American researchers, working within a culturalist paradigm, have focussed on more stable, enduring cultural frameworks and social values, such as “religion and parental responsibility” (Davies, 2006, p. 100).

These differing paradigmatic approaches which are more bound to discipline than continent are reflected in the different methodologies which are applied to understanding people’s ideas about the natural world. As summarised by de Groot (2006):

- Visions can be seen as present, implicitly, in everybody–rural or urban, adult or child, man or woman. The researcher may then elicit these visions, in surveys or interviews. This is a typical perspective of the social sciences…
Visions may also be seen as expressions in a society. The researcher may then gather (rather than elicit) these expressions, e.g. in art or the mass media. This is the point of view of the cultural sciences…

Visions may also be seen as contributions (of farmers, NGOs, local authorities etc.) to past or ongoing debate, e.g. about nature protection or agricultural development…the perspective of the political and policy sciences… (p.237)

This summary usefully aligns broad disciplinary perspectives with research interests and practices. Visions as contributions associated with discussion and debate (de Groot’s third visions framing) moves research into the realm of critical realism, where visions are now seen as “relational rather than inherently individual” (Thompson & Rayner (1998) cited in Davies, 2006, p. 101). This contested vision of nature framing is not an aspect which is explored in the current study, although few would deny the relational aspect of visions of nature as it is only through connections with ‘other’ (people, places and things) that people create meaning in their lives. However, de Groot’s framing of visions as something which is present in everyone and which can therefore be elicited (the domain of the social scientist) and framing visions as cultural/media expressions, which can then be gathered (the view of the cultural scientist) are both central to this Nature 2.0 study.

**Nature 2.0 study interest**

As Davies, de Groot and others have pointed out in *Visions of Nature* (2006) those aligned with different research traditions have sought to explicate visions of nature using a variety of theoretical and methodological tools. While this can present challenges, the very complexity and fluidity of human conceptualisations of nature (de Groot et al., 2006, p. 10) encourages, indeed requires or creates this need for multiple approaches to understanding. As Drenthen, et al. (2009a) suggest, there is a need for “a plurality of perspectives and epistemologies ‘through which the world comes to presence” (p.7). The point is, as Davies (2006) further describes:

… not to deny or try to eradicate [different visions of nature], a thankless if not impossible task, but to be explicit about the assumptions made and consider their implications for the results thus generated (p.89).

Within this Nature 2.0 study it is not only the assumptions which are brought to the research process which matter (although these must be thoroughly explicated) but also
the dual interest in nature as both conceptualisation and also representation–circulating on Web 2.0–which are significant. Within the context of this study, the constructionist/realist argument is largely redundant, as the research is undertaken within an environment of representation. Media–whether art, literature, mass or new media–are all about representations of the world around us, including the natural world. The current interest is in constructed visions of nature making this research inherently constructionist. The somewhat endless (even pointless) essentialist/constructionist debate around meanings of nature are foregrounded but this really stands apart from the interests of this particular study which explores Nature 2.0.

4.2.3 Stability of nature visions

Do people have a stable vision of nature, or do they construct visions every time anew, depending on the context (e.g. the social situation or the conflict situation)? Curiously enough, evidence for both alternatives is found, and this appears to be connected to the research method applied (de Groot, 2006, p. 239).

The evidence suggests that different methodologies evoke different visions of nature which tend towards either enduring cultural visions (as discussed in chapter three) or more dynamic, shifting visions which are contingent on place and time. Van den Born (2008) lists the three basic approaches applied to studying people’s visions of nature:

1. Quantitative approach using “pre-styled items that may generate overall clusters, levels of adherence and explanations...”
2. Qualitative approach, allowing respondents greater freedom to “describe and explain visions in their own words, thus allowing a deeper insight...”
3. Analyse and propose self-articulated visions… [used in Environmental Philosophy and beyond the focus of the current research] (p.88-89).

The following sections examine the qualitative and quantitative approaches to understanding visions of nature, demonstrating the likely visions which are associated with each of these methodological approaches.

Qualitative research and changing ‘surface’ visions of nature

Few would dispute the idea that people hold multiple, ever-changing, even contradictory visions of nature which are fluid and largely contingent on time and place; what Buijs et
al. (2012) describe as ‘cognitive polyphasia’ or ‘hybrid views’ (p.1172, 1175). And while different visions of nature can co-exist simultaneously, they are also likely to change and shift in different contexts. Different visions are likely to emerge when, for example, local interests are at stake, there is a crisis or economic interests are affected (de Groot, 2006, p. 240). In their article which addresses natural resource management, Buijs and his colleagues (2012) similarly suggest that groups negotiate nature meanings in relation to ‘complex issues’ including “invasive species and conflicts over protected forests, landscapes, and national parks” (p.1168). These dynamic and various ideas about the natural world can be represented as ‘surface’ visions of nature (Doring, 2006, p. 167).

Qualitative research, typically based on open discussion or semi-structured interviews with individuals or groups, tends to encourage these fluid and at times, heterogeneous nature visions. For example, Davies (2006) uses focus groups to reveal UK respondents’ understanding of ‘nature in place’, while Nevers, et al. (2006) use a “community of inquiry approach” (p.109) to uncover changing nature visions of young people in Germany. Doring (2006) attends not just to time and place but to a specific and notable event. He discusses how visions which coincide with a major disaster, such as the Odra flood, reflect this catastrophic event but also that these visions may not endure over time.

Other qualitative researchers, such as Macnaghten and Urry (1998) argue that it is context more than anything else which matters when it comes to visions of nature i.e. “it is specific social practices, especially of people’s dwellings, which produce, reproduce and transform different natures” (p.2). This link between context and ‘pluriformity’ (van Koppen, 2000) is enabled, even encouraged by qualitative research. As de Groot (2006) describes, more than any other research approach qualitative research, “taps into people’s capacity for contextual vision construction (in interaction with the researcher), and hence finds wide varieties and much contextuality” (p.241).

**Quantitative research and more enduring ‘deep’ visions of nature**

Few would dispute that there are differing and shifting ideas of nature, i.e. that people elicit different visions according to their unique experiences of place and time (ask about nature on a sunny day at the beach, during the Odra flood or following the Christchurch earthquake and responses will undoubtedly differ). However, few would similarly dispute that there is also a sub-stratum of more enduring cultural nature visions which inform
These relatively stable cultural visions are founded on deeply embedded (Western) cultural representations of nature which are both enduring and routinely manifest outside of direct, lived experience or physical contact with the natural world. These cultural manifestations are historically-founded and are evident in human discourse and representations of nature which are widely shared through a variety of media formats including art, literature, film, television and–the focus of the current study–Web 2.0. Buijs (2009) provides a useful illustration of a particularly enduring and pervasive cultural representation of nature which continues to inform deep visions of nature today:

[The] relative stability of social representations of nature can be illustrated by the persistence of the Romantic representation of nature that has been dominant in Western representations of nature since the 18th century. Although the details of this Romantic representation of nature have changed from time to time (e.g. between a wilderness and an Arcadian interpretation), in a very general sense it has shown the “remarkable stability” referred to by Moscovici (p.84).

In contrast to qualitative research, a quantitative approach (e.g. as used by Kahn, 1999; Kals et al., 2006; van den Berg et al., 2006; van den Born, 2006) is generally independent of context and characterised by structured, often closed questionnaires, which include pre-defined questions, scales and images, simple yes/no responses and box checking. This provides limited opportunity for the respondent to construct or negotiate a nature vision through discussion and instead the more distanced approach encourages the sharing of these more stable, enduring cultural visions of nature. As de Groot (2006) usefully articulates, quantitative research, “taps into the layer of more or less stable repertoire and leanings. The researcher then finds stability, even if visions of nature are constructed (by the researcher) out of the respondents’ answers” (p.240).

**Nature 2.0 study interest**

The surface and deep approaches to understanding visions of nature are not, as discussed, in conflict but rather they reflect different areas of interest. So while the current interest
in Nature 2.0 does not deny the significance of dynamic and ever-changing nature visions which are contingent on place and time, it is the more deeply-embedded, stable visions or conceptualisations–informed by enduring cultural, media-ted representations (as outlined in the previous chapter)–which are the focus of the current Nature 2.0 study.

4.2.4 Why conceptualisations of nature even matter

Visions of nature are fascinating [but] do these matter in the real world? After all, the future of nature does not depend on what we and other people think, but on what we and other people do. This question pushes us squarely into the murky pool of the discrepancy between visions and action… (de Groot, 2006, p. 241).

The fourth conceptual consideration attends to the connection between visions of nature and other human responses to the natural world, such as attitudes and behaviours. This is an important consideration with the potential to undermine or justify the value of visions of nature research as a meaningful research endeavour. Why do visions or conceptualisations of nature even matter; what evidence is there that they have any influence on human-nature relations at all? In his examination of this issue, de Groot (2006) suggests a fairly clear-cut response to the question of whether or not visions of nature research has value and asserts where this research has greatest significance:

It is in the collective arenas of rural planning, river management policies, agricultural policies, etc. that the fate of nature is sealed, and it is primarily there that visions of nature play a role (p.242).

The focus of de Groot, like many others writing on visions of nature (Buijs et al., 2012; Deliège, 2007; Kals et al., 2006; Keulartz et al., 2004; Newell & Osborne, 2009) is primarily on environmental planning, policy-making and conservation practice. It is therefore reasonable that they attend, first and foremost, to these collective arenas. However, it is argued here that visions of nature do not only influence environmental policy and planning. As illustrated below, a link can also be made between visions and other human outlooks including attitudes, values and even behaviours. This is evident in the research in one of two ways. Firstly, this connection may be articulated within the same research activity, i.e. an explicit connection made between visions and attitudes and/or actions within the same study. Alternatively, this connection may be indicated, suggested or signalled by the researcher in the course of their study, i.e. a connection is implied between visions, attitudes and actions (or some variant of these).
**Connection made between visions and actions in the same study**

In their article on the new biophilia, van den Born et al. (2001) developed a framework for understanding visions of nature in the West. This theoretical approach associates three elements within the same framework and a real world connection is realised between images of nature (e.g. Arcadia or wilderness), values of nature (instrumental or intrinsic) and images of the human-nature relationship or worldview; three discrete, but here connected areas of interest which are elsewhere addressed in isolation. Twelve years later, Verbrugge et al. (2013) revisit this framework and further extend the model to link nature visions with knowledge and perceptions of both non-native species and support for management activities of these species.

In his study on ‘public natures’ Buijs (2005) describes what he identifies as the three dominant views of nature (as Wilderness, Arcadian and Functional) and he similarly associates these with particular characteristics (e.g. naturalness and fragility) and also ecocentric or anthropocentric values. Buijs also visualises these connections between historical views of nature and the different values and characteristics (p.55), as shown in figure 16.

![Figure 16 Buijs' (2005) Historical views of nature](image)

Other studies also draw a connection between images of nature and human-nature values, value orientations and other human outlooks. Van der Windt, et al. (2006) align visions of nature with specific valuation arrangements and perspectives which, they argue “can be recognized in national papers of governmental and non-governmental organisations” (p.213). Nevers and her colleagues (2006) associate nature visions with value orientations of German children and adolescents, while van den Berg, de Vries and Vick’s empirical study with university students (2006) examines the interrelationship of images of nature,
environmental values and landscape preference. In their study on people’s thoughts on nature, Buijs and Elands (2013) point to other studies which link visions with attitudes:

Previous work has shown that representations [visions] of nature inform attitudes on e.g. nature restoration (Buijs et al., 2011), wolf protection schemes (Figari and Skogen, 2011) and invasive species management (Selge et al., 2011) (p.185).

Finally, education theorist, Pam Pointon (2013) links nature conceptualisations (either scientific or aesthetic) with school-age students’ environmental worldviews which, she suggests, include anthropocentric, biocentric and also human-related views.

Connection implied between visions and actions

For others working in this area of human-nature research, the connection between visions of nature and more concrete attitudes, actions or behaviours is asserted, assumed or implied, rather than a link directly made. Studies which address (rather than measure or assess) this connection do so from different perspectives. As is evident in the following summaries, human-nature researchers variously suggest or imply that visions of nature:

Reflect and inform sensibilities and guide human actions towards nature: As mental representations, visions of nature inform our personal and collective life (Settekorn, 2006). Nature visions are more than symbolic; they have real world outcomes which are linked to human-nature values and relationships. The Arcadian nature concept, for example, is linked to both weak anthropocentrism (van Koppen, 2000) and stewardship (de Groot et al., 2006), a more nature-friendly attitude than mastery or other worldviews.

Enable the exchange of ideas about the natural world: Visions of nature inform how people think about the natural world, including perceptions about and values towards nature (Buijs & Elands, 2013; Verbrugge et al., 2013). As such, clarifying these differing views can aid dialogue (Van Assche et al., 2012) and build trust (van den Born et al., 2001) towards enhanced decision-making and improved outcomes for both humans and the natural world (Keulartz et al., 2004; van der Windt et al., 2006).

Influenced early conservation thinking: John Muir and other nineteenth century nature lovers were inspired by the sublime wilderness visions which contributed to the establishment of the American Wilderness Act in 1964 (W. M. Adams, 2010). And just as Romantic visions inspired these early Americans, so too did they inform the rebirth of the environmental movement in the 1960s and 70s (Lutts, 1990). Van Koppen (2000) also
suggests that rather than the wilderness image, it was the Arcadian vision which influenced (and influences) the nature conservation movement in Europe.

**Inform government policies and conservation practice:** There is general agreement that visions of nature have implications for nature policy and practice (de Groot & van den Born, 2003; Macnaghten & Urry, 1998) and even that different visions are embedded in policy practices (van der Windt et al., 2006). As such, it is vital that there is understanding around both public visions (Davies, 2006; Van Assche et al., 2012) and those of experts (Lenders, 2006). And, as Swart et al. (2001) suggest, when it comes to ‘what is nature’ ecologist elitist ideas must be avoided; lay concepts matter.

**Have implications for environmental education:** Visions of nature inform how young people are educated about the natural world (Bonnett, 2004). Liu and Lin (2013) suggest that because of implications for environmental education, more studies are needed such that there is better understanding of how nature is perceived. Nevers et al. (2006) also argue that understanding children’s nature visions will lead to better education outcomes.

As these studies demonstrate, visions of nature matter. They reflect and inform how people think about, talk about, value and otherwise respond to the natural world. As suggested, different, at times conflicting visions of nature can influence policy-making at local and national levels and these decisions and practices have real world implications around education, health, economic development and, importantly, the natural world. However, visions of nature do not only influence perceptions, attitudes and behaviours within these formal and more limited collective arenas. They are also readily available, shared and exchanged within the unbounded digital world; the superfast highway that enables individuals and mass audiences to share ideas, to inform, inspire, connect and otherwise reflect the realities of a rapidly changing world, including the natural world.

The following section reviews four analytical approaches which have framed the dominant cultural visions of nature such that they can, as Bonnett (2004) suggests, ‘concretise’ these nature ideas and their potentials in the real world. As suggested earlier, this review of the visions of nature literature includes research which overlaps, rather than speaks directly to the current study interest. First, however, a brief overview is provided of those who have contributed most to this field of human-nature research: the Dutch.
4.3 Visions of nature research traditions, interests and themes

4.3.1 Dutch research tradition and interests

While there is some interest in visions of nature around the world, research into visions and images of nature is rapidly emerging as a research tradition in the Netherlands (Buijs, 2009a; Collado, Íñiguez-Rueda, & Corraliza, 2016). And, as van den Born (2008) suggests, “starting with Buijs and Volker (1997) …quantitative research on images of nature [has become] a research ‘tradition’ in the Netherlands” (p.86). This interest in nature visions may be partly explained by the Dutch environment, a landscape long marked by the presence of humans and forever vulnerable to the actions of the sea. As van den Belt (2004) points out in the Netherlands, “there is no recourse to an allegedly ‘pure’ and ‘untouched’ nature” (p.326) and he suggests why this might be so:

In the Netherlands, man has left his indelible mark on the landscape everywhere. Without dikes and pumping stations, more than half of the land would not even be there, as it lies below sea level or would be flooded during high tide. Also, in other parts of the country, agricultural practices, the expansion of towns and cities, the building of roads and canals and the canalization of rivers and brooks have changed the original natural environment beyond recognition (p.312).
It is impossible to know for sure whether or not the changed landscape has been the driver for interest in how people think about nature in the Netherlands but more importantly evidence of this interest is widespread. There is a wealth of quantitative research (as listed in van den Born et al., 2001) and increasingly mixed methodological studies undertaken by Dutch researchers. A number of these were brought together in two Visions of Nature collections, edited by van den Born, de Groot and Lenders (2006) and also Drenthen, Keulartz and Proctor (2009). Extracts from the former collection of essays are evident throughout this chapter.\(^{37}\) Dutch nature researchers are also active collectively though research clusters such as the Visions of Nature group at Radbound University and the Forest and Nature Conservation Policy Group at Wageningen.

In recent years the Dutch are also proactively engaging in a variety of high profile nature initiatives. In 1990 the Government established the Dutch Ecological Network to both “increase the total area of nature in the Netherlands and…improve the linkage between the different areas” (de Jong, 2009, p. 9). This policy resonated elsewhere in Europe and neighbouring countries continue to work with the Dutch towards the creation of a Pan-European Ecological Network (van den Belt, 2004, p. 312). The Dutch are also actively engaged in the reintroduction of species as part of the rewilding of Europe (Cossins, 2014); reintroducing large ruminants once indigenous to Europe but long since extinct from the region. Wild cattle, horses and bison are already roaming designated parts of the Netherlands and, more controversially, wild wolves are ‘expected to arrive’ sometime in 2015 (email communication with Martin Drenthen, Nov 2014).

Interestingly, Dutch concern for the natural world stretches far back in history to the realist landscape or *landskip* painting tradition of the sixteenth and seventeenth centuries (albeit this interest was driven by economic rather than environmental concerns). It is also Dutch researchers who are extending understanding of the human-nature connection into the digital future. Bram Büscher, in particular, is researching the use of social media as this relates to conservation practice in Africa (Büscher, 2014; Büscher & Igoe, 2013) a topic close to but beyond the particular interest in young adults’ conceptualisations of

\(^{37}\) Essays in Drenthen et al. (2009) *New Visions of Nature* extend beyond current interests. They explore micro natures (genomics) and other nature interests, e.g. landscape philosophy and environmental ethics.
nature as these appear online. It is also the Dutch who are driving the more controversial and extreme ‘Next Nature’ initiative:

This website will radically shift your notion of nature. Our image of nature as static, balanced and harmonic is naive and up for reconsideration. Where technology and nature are traditionally seen as opposed, they now appear to merge or even trade places.38

Figure 18 Nature changes along with us - Next Nature

In the following section it is the visions of nature research which is outlined; a wide ranging area of interest which commands the attention of Dutch and also other nature researchers, from within and beyond the low lands of Holland.

4.3.2 Visions of nature research

Visions of nature studies encompass a wide range of human-nature research interests, including, but extending well beyond, conceptualisations of nature as concretised online. And, as discussed, the more distanced methodological approach used in the current Nature 2.0 study encouraged respondents to ‘tap into’ and share concepts of nature which have been informed by enduring cultural representations, including those experienced through the media. Interest is therefore in those studies which examine visions which reflect enduring, cultural representations in the West. In the visions of nature research literature these enduring visions or ideal nature types invariably include one or more of the ‘iconic natures’ which were discussed in chapter three; namely Arcadia and/or wilderness (separately or now entangled) and nature as resource.

Having established interest in these enduring cultural natures, it would appear that the next step towards building a picture of research in this area would be to identify those studies which address people’s visions of nature and which incorporate these iconic natures within the research framework. However, as indicated earlier, assessing the value of research in this area of human-nature relations is inherently difficult, as the same

38 Next Nature FAQs www.nextnature.net/about/#frequently-asked-questions retrieved 15 Sept 2015
concept can mean different things when used in different studies (for example, in the studies by Settekorn (2006) and Korfiatis, et al. (2004) visions and images of nature are cultural representations, rather than individual’s own concepts of nature). Incorporating Arcadian, wilderness or resource visions within a study does not, by implication, indicate shared research interests.

What can be relatively easily dismissed are those visions of nature studies which both represent nature ideas as something other than those which align with cultural nature framings (as Arcadia, wilderness and resource) and which also apply a different theoretical framework and methodological approach. For example, de Groot’s (2006a) materialistic account of nature as concrete experience or Kals (2006) assessment of nature visions in terms of economic interests. And while it is possible to identify those studies which approximate the current interest in conceptualisations of nature (as visions or images) with reference to cultural representations of nature, it can be more difficult to recognise those studies which examine visions of nature as cultural representations and which are relevant to this Nature 2.0 study. As previously suggested, visions of nature studies range widely, in terms of the particular focus of the research and the frameworks and methodologies applied. These three elements need not coincide to make the research relevant. However, where one or more of these elements diverges significantly from the interests of the current study this may impact on the value of the research for the current exploration into conceptualisations of nature, as realised online.

In the end there is no easy way to readily establish which studies have significance. Visions of nature studies with a different focus (such as beliefs or value orientations) or which adopt a different theoretical framework (e.g. materialist or structuralist) or even a different methodological approach may or may not speak to the current study interest; knowing whether this is or is not the case, is not and cannot be, a straightforward exercise.

### 4.3.3 Recurring visions of nature as Arcadia, wilderness and resource

Researchers who attend to culturally-framed visions of nature typically reference three dominant nature ideas, i.e. Arcadia, wilderness and functional resource. These are, as Buijs (2009) suggests, “the most important views on nature that can be witnessed in Western societies [and] can still be witnessed in present-day views” (p.50).
In the previous chapter each of these historical nature views were discussed in some detail. Two further nature representations were also identified i.e. real nature and nature as risk. These representations, which are largely enabled by and promulgated through mass media, have not yet been the focus of those undertaking research on visions or images of nature. Rather, those attending to contemporary lay people’s ideas about the natural world in association with symbolic cultural constructs typically frame nature within one or more of the three iconic ideal nature types.

This section outlines four influential visions or images of nature frameworks which have incorporated these enduring nature visions (or some variant of each). The frameworks are associated with significant contributors to this field of human-nature research and the studies associated with these frameworks speak to some aspect of the current interest in Nature 2.0. The four analytical frameworks are presented below in ascending date order; these frameworks are not inherently linked, but earlier approaches influence later models:

1. **Historic images of nature: Arcadia and the ‘lifeworld’** (van Koppen, 2000);
2. **Historic images of nature: a three dimensional Visions of Nature framework** (van den Born et al., 2001);
3. **Historic images of nature as three dimensional concepts** (Keulartz et al., 2004);
4. **Historic images of nature within a social representations framework** (Buijs, 2009).

Notably, the upcoming sections do not aim to present a comprehensive review of the research literature in this area; for one thing the predominately Dutch studies are not always available in English. Rather, this overview of four visions of nature frameworks (all of which were undertaken by Dutch researchers between 2000 and 2009)^39^ aims to provide a foundation for understanding research interests and activities in this area of human-nature research; an area which most closely aligns with the current interest in young people’s conceptualisations of nature as realised on Web 2.0.

---

^39^ Researchers from other European nations also put in cameo appearances.
1. Historic images of nature: Arcadia and the lifeworld

In his theoretical examination of nature concepts in environmental sociology, van Koppen (2000) identifies three strands of nature conceptualization. The resource approach attends to nature’s instrumental values (material value to humans) and is largely driven by the natural sciences. Aesthetics are of ‘minor relevance’ within this approach which is typically employed by those examining worldviews (e.g. Pointon, 2013). This approach is routinely evident in conservation policy documents. In contrast, the Arcadian approach, which can be viewed as Utopian and ‘out of touch’ foregrounds non-instrumental, aesthetic and ethical interests and values. Thirdly the constructionist approach (regardless of nature’s instrumental, intrinsic or other value) views nature as primarily socially constructed. This approach is criticised as the constructionist world of “narratives, symbols and social relations” (p.308) is perceived to be far removed from biophysical reality and contact with the ‘real world’.

In his article, van Koppen attempts to “move beyond a ‘constructionist’ framing to more informative nature approaches; towards improved conservation…” (p.300). He kicks against the inherently instrumental resource approach to conceptualising nature, an approach which, he suggests, has dominated Western thinking (and Western science) for more than 200 years. This, he argues, was always a one-dimensional way of looking at something which is, in reality, an intrinsic aspect of the human lived experience. Building on Moscovici’s (1968) study of the human history of nature he proposes the concept of lifeworld which encompasses “interaction with material reality” (p.308). This, he suggests, is a more useful alternative to ‘nature’ which has become overly bound up with constructed, resource and Arcadian associations. By including the concrete reality of nature in this way, i.e. as ‘sensual experiences’ van Koppen develops a framework which:

…aims to bridge the gap between the constructionist approach and the arcadian and resource approaches. It stresses the importance of social practices of dealing with nature in the daily lifeworld of modern society (p.300).

Van Koppen concludes that this revised approach reveals the ongoing dominance of Arcadian thinking in the West today. And he further suggests that while Arcadian nature

---

40 Moscovici not only regards nature as a specific social construction within a specific social context, but also qualifies this context as one of interaction with material reality (van Koppen 2000, p.308).

41 The lifeworld concept was introduced by Husserl, then elaborated on/debated by others in sociology, e.g. Schutz, Luckmann, Berger and Habermas (van Koppen 2000 p.311).
may be essentially symbolic, this nature view has implications in the real world, including the world of nature conservation policy and practice.

Like van Koppen, Deliège (2007) also looks to the Arcadian approach (made flexible) as a useful alternative route to evaluating conservation practices. He responds to fellow nature philosopher, Martin Drenthen and his discourse on wilderness\(^{42}\) and further argues against the dismissal of the “social myths” [which] we deploy to mediate our relation with nature” (p.416), ultimately resulting in a ‘pining for the wild.’ Arcadianism, he points out, influenced how the early nature preservation movement (in the USA, Belgium and the Netherlands) envisaged nature preservation, hence the Arcadian approach–where nature as image is founded on more sensual experience of the natural world–is still a useful starting point for understanding human-nature relations today.

While van Koppen and Deliege argue for more grounded approaches to understanding concepts of nature, ecologists, Hovardas and Stamou (2006) empirically test this lifeworld framework in a qualitative study of rural residents in Greece. In their study they apply van Koppen’s resource-lifeworld-Arcadian model, together with a social representations\(^ {43}\) approach to “recover representational nature dispositions” held by those residents (p.1745). As the authors note, “the objective of this paper is the structural and narrative reconstruction of representations of ‘nature’, ‘wildlife’ and ‘landscape’, held by rural residents of the Dadia Forest Reserve” (ibid.). The study suggests the residents are sympathetic to ecotourism development; they are concerned with ‘perceived economic benefit’ rather than conservation or quality of life issues. While the findings are interesting, of greater significance within the current study context is the authors’ linking of values, beliefs and attitudes which they suggest, “can be seen as existing on a continuum rather than as separate ideas” (cited in Hovardas & Stamou, 2006, p. 1750).

Van Koppen, Deliege, Hovardas and Stamou support a nature framework which builds on historic images of nature, but which also moves beyond the abstract world of constructionism and which prioritises both concrete experience and the Arcadian vision

\(^{42}\) Drenthen frames wilderness as ‘non-appropriable alterity’ making it more difficult to attach ‘value’; this is less of a challenge when envisioning nature as ‘Arcadia’ (Drenthen, 2005: 333; cited in Deliege).

\(^{43}\) “...we define a ‘social representation’ as the elaborating of a social object by a social group for the purpose of communicating and behaving (Moscovici 1963)” (Hovardas et al., 2006, p.1750).
of nature. The driver for these studies is conservation and nature management and Hovardas and Stamou, in particular, assert the value of social and local/negotiated representations and their real life implications in this context.

2. Historic images of nature: a three dimensional Visions of Nature framework
Around the time that van Koppen and others are asserting the value of the lifeworld concept and the ongoing dominance of Arcadian thinking in the West, four other Dutch researchers–van den Born, Lenders, de Groot and Hujsman–published an article on the new biophilia (2001). In this empirically-based visions of nature study the authors suggest the emergence of a more nature-friendly vision in Europe. While the driver for this study is again nature management, the analytical framework developed to interrogate public visions of nature now combines three different elements: values of nature, images of nature and images of the human-nature relationship. By developing an approach which incorporates these three, interrelated components, the authors aimed to create a framework which will better appreciate public visions of nature, enabling more effective communication between groups. By developing this framework, the authors also hoped that findings could be replicated or compared with other studies. Interestingly, the authors also have a particular interest in the source of images of nature, although this interest does not extend beyond people’s nature experiences in childhood.

Visions of nature framework and images of nature
Van den Born and her colleagues (2001) utilise visions of nature as an umbrella term which incorporates three elements:

1. **Values of nature** are the reasons why nature is perceived to be important, and come in two types, namely instrumental and intrinsic values of nature, the latter being those that nature has irrespective of utility or beauty to people…

2. **Images of nature**, which relates to questions of what nature is and what the types of nature are that people distinguish, characteristic Western examples of such images being wild nature and arcadian nature…

3. **Images of relationship**, which are defined as images that people hold of the appropriate relation between humans and nature, characteristic examples being ‘dominion’ and ‘guardianship’ (p.66).
PART II: STUDY COMPONENTS, THE LITERATURE

While all three elements are implicated in the authors’ research into visions of nature, of particular interest within the current study context, are the images of nature categories which emerge in this mixed methodological study. These images of nature elements which align with the highlighted visions of nature segment (shown in figure 19) include five images: Arcadian; wild or elementary; penetrative; domestic; and nature as utility. The five images of nature elements do not map precisely to the three historic nature framings which have underpinned other human-nature research, but there is a strong degree of overlap. Furthermore, both the domestic element, which includes “potted plants, pets and aquarium fish” (p.71) and the utility element, including “the grain field, soccer field and hunting rabbits” (ibid.) map readily to representations of nature as functional resource.

![Figure 19 Images of nature (highlighted) within Visions of Nature framework](image)

In summary, van den Born and her colleagues suggest their empirically-based approach to understanding images of nature is both informative and revealing. While their interests and also questions to the study participants relate to ‘naturalness,’ their study findings also confirm the ongoing pervasiveness of certain images of nature over others:

On the whole, it appears that the respondents grouped the items of more or less natural things in a consistent package of images of nature, which was more consistent in fact than the listing of the Natuurbeschermingsrad [1993] that was

---

44 The authors use a combination of interviews and a multi-choice questionnaire with 200 adults.
45 Penetrative nature is akin to Maby’s (1973) ‘unofficial countryside’ i.e. wild nature in urban places, such as ‘weed in the garden’ and ‘rats in the shed’.
46 The Natuurbeschermingsrad or Nature Protection Council report (1993) - which is in Dutch - packages 10 nature images, i.e. nature as Wild, Secondary, Extraction, Production, Regulatory, Harmful, Healing, Aesthetical, Informative, Domesticated.
used as a source of the items, and also somewhat clearer and richer, in our view, than the set of images found by Buijs and Volker [1997]. The images of nature could be put on a smoothly decreasing scale of ascribed degree of naturalness, with wild/elementary nature in the lead (van den Born et al., 2001, p. 72).

The findings from this research point to a general trend towards a new Western biophilia; literally a new found nature-friendliness founded on “love of all that lives” (p.66). This finding is further examined with regard to the demographic variables of domicile, gender and age and also childhood experiences of nature. With regard to demography, women and rural dwellers were found to associate naturalness with Arcadian nature and men and urban dwellers tended towards wilderness, while young, educated individuals (of both genders) put more emphasis on the intrinsic value of nature. While the authors do not analyse attitudes towards nature they note that their findings echo those from studies on environmental attitudes. In terms of childhood-related impressions the authors suggest:

> Our qualitative research… indicated that adherence to a wild or to a more Arcadian image of nature in adulthood may be associated with more intense and direct, versus more utilitarian and distanced, experiences of nature in childhood (p.73).

Van de Born et al. further correlate these results with those of Kals, Schumacher and Montada (1999) on emotional affinity and nature protection and also Chawla’s research (1998, 1998a) on significant life experiences. The authors’ further suggest the need for more research on the origins of people’s visions of nature (i.e. childhood experiences); media are not considered as a potential and/or significant influence on public images of nature within this study. Finally, the authors suggest the value of research into visions of nature and argue the need for more cross-cultural research in this area.

Van den Born uses the Visions of Nature framework in a number of subsequent studies, including research which targets one or two, rather than all three elements simultaneously. For example, she uses a quantitative approach to study images of the human-nature relationship in combination with landscape preference (2006), utilising the Dutch SOCON measurement tool. The New Environmental Paradigm (NEP) scale, she suggests, is no longer up to the task as this is “too strongly orientated towards the master and steward-like images and seems to pay not enough or no attention to more ecocentric

48 Social and Cultural Developments in the Netherlands survey
images” (p.79) which now appear to be emerging in Europe. In a later study, van den Born (2008) again explores images of the human-nature relationship, but she also attends to what images of nature lay people have and whether or not these map to expert images and she uses in-depth interviews to “discover people’s own voice” (p.83). In both these studies the intrinsic value of nature and a new biophilic tendency is evident.

The focus of de Groot and van den Born’s study (2003) is again on landscape rather than nature, however the authors again utilise the Visions of Nature framework, including the images of nature component. Using factor analysis to analyse such nature themes as ‘mosquitoes and rats in the barn’ and ‘the North Pole,’ this quantitative study reveals three images of nature which include: Arcadian (mostly preferred by women, age and education irrelevant); nature as penetrative (mostly preferred by older, well-educated men); and wild/elementary nature (mostly preferred by well-educated men).

Others working in human-nature research also utilise the Visions of Nature framework. Verbrugge et al. (2013) undertook a quantitative study which uses two of the framework elements to explore public perceptions of invasive species in the Netherlands. The findings from this study suggest that while respondents’ images of the human-nature relationship were relevant around issues of engagement and control of invasive species, images of nature were most important when it came to perceiving risks to the environment. While the focus of this study ranges beyond images of nature in a more general sense, as in the other studies discussed in this section, Verbrugge and her colleagues’ research highlights the versatility of the Visions of Nature framework. It also reiterates the shift towards a new biophilia in the West and highlights the key driver for ongoing Dutch interest in images of nature, i.e. the need to better understand differing ideas about the natural world towards enhanced conservation outcomes.

3. Historic images of nature as three dimensional concepts
In their theoretical study on concepts of nature as communicative devices in relation to Dutch nature policy, Keulartz et al. (2004) also argue for a more values-based approach to framing concepts of nature. Their article builds on two earlier studies on valuation and

---

49 Three of the four questions concern landscape; interest here is on the question about images of nature.
historical visions of nature, also by the same authors, Keulartz et al. (2000) and Swart et al. (2001). In this later article, Keulartz et al. (2004) react against the Dutch Nature Conservation Council’s 11 concepts of nature (1993) which they describe as being too functional and which the Council themselves describe as being largely impressionistic, noting the lack of “hard research data” underpinning these nature framings (Keulartz et al., 2004, p. 86). While still referencing the historic nature visions the authors argue that a values approach more usefully shifts understanding of nature concepts from the prevailing, dominant functional nature discourse which is focussed on interests to a structuralist approach, where the focus is on values:

Although a functionalist approach to concepts of nature surely can be helpful, because of its one-sided emphasis on interests it runs certain risks, which can be avoided if it is supplemented by an approach that we will term 'structuralist'. In this approach, values, not interests, are emphasised. Values are not negotiable, as interests are; they cannot be justified by strategic means but only by argumentative means (Keulartz et al., 2004, p. 89).

This need to shift from a functionalist, interests-based approach echoes that of van Koppen (2000) and followers of his Arcadian/lifeworld approach, while the importance of a more values-based approach echoes that of van den Born et al. (2001) and others who have utilised the Visions of Nature approach.

**Values approach to concepts of nature**

Using a values approach, Keulartz et al. (2004) propose three revised concepts of nature. Each of these concepts is now comprised of three interrelated elements or dimensions including: a *cognitive* element (around nature relationships and beliefs); a *normative* element (with regard to the moral status assigned to animals, plants and systems); and an *expressive* element (concerning beauty, inspiring admiration or aversion). These revised functional, Arcadian and wilderness concepts of nature are readily recognisable as the much-cited enduring historical nature representations which are now thoroughly embedded and stabilised in the Western cultural canon. What the values approach does, however, is to expand and re-present each of these views of nature as a *three dimensional* concept. Using this “axiological infrastructure of concepts of nature” (Keulartz et al., 2004).

---

50 Buijs (2009b) summarises this article in English (p.56-57).
51 Nature as: Wild, Following, for Use, Production Resource, Regulating, Threat/Nuisance, Healing, Scenic, Intriguing, Informative, Modified (DNCC, 1993). This and other attempts to understand how lay people think about nature at a national/cultural level was a catalyst for theoretical and empirical studies in this area.
nature images are now articulated as valuation arrangements and each of these functional, Arcadian and wilderness arrangements is associated with: an ecological/cognitive perspective (concerning ‘truth’); an ethical/normative perspective (concerning what is ‘right’ with regard to human-nature relationships); and an aesthetic/expressive perspective (concerning beauty and other scientific and cultural aesthetic considerations) (Swart et al., 2001, pp. 231-232). Van der Windt et al. (2006, p. 220) tabulate these three dominant and interrelated perspectives within their study on valuing nature in the context of planning (as shown in table four). Keulartz, van der Windt and Swart (2000; 2001; 2004; 2006) re-present the three iconic, enduring nature conceptualisations as three-dimensional concepts. These expanded and interrelated conceptions reflect what people value about nature, in terms of what is ‘true’, what is ‘right’ and what is ‘beautiful’ (Swart et al., 2001, p. 231). This valuation approach, the authors suggest, enables those working in nature management to move beyond an ecological-only perspective and to gain a better understanding of different views of nature towards improved conservation outcomes.

<table>
<thead>
<tr>
<th>Valuation arrangement</th>
<th>Dominant ecological perspectives</th>
<th>Dominant ethical perspectives</th>
<th>Dominant aesthetic perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Dynamics; production and population ecology</td>
<td>Strong anthropocentric</td>
<td>Formal and functional aesthetics</td>
<td></td>
</tr>
<tr>
<td>Arcadian Structure; community and population ecology</td>
<td>Weak anthropocentric</td>
<td>Cultural and historical-cultural aesthetics</td>
<td></td>
</tr>
<tr>
<td>wilderness System; ecosystem ecology</td>
<td>Ecocentric</td>
<td>Science aesthetics</td>
<td></td>
</tr>
</tbody>
</table>

Keulartz and his colleagues do not empirically test their images of nature concept in the aforementioned studies but fellow conservation researchers, Buijs, Pedroli and Luginbühl (2006) do just that. Using a sociological approach, these authors combine social representation theory and the values-based framework to better understand complex, local images of nature in the Netherlands and France. Using data from an earlier French study they found that “a shift from a functional image of nature and landscape to a more hedonistic image like the Arcadian and wilderness images has taken place” (p.375). While these writers’ interest is primarily in social perceptions of landscape (suggesting that the more abstract notion of nature is more difficult to assess), Buijs et al. (2006) also,

52 1990s study, using quantitative data from 5,000 individuals and qualitative data from 250 interviews.
significantly, highlight the role of media in influencing contemporary images of nature.’ And, as they further suggest,

…for [the] urban population [in France], nature is the remote nature, where reference is made to Discovery-Channel-like images of the Amazon plain or the African landscape with its wildlife (p.379).

In his ‘Public Natures’, Buijs (2009) suggests that Keulartz, van der Windt and Swart’s framework is the “most comprehensive conceptualization of images of nature [that has] been put forward” (p.101). This values-based approach certainly provides the foundation for much of Buijs’ own, extensive research in this area, as is evident in the following and final section on images of nature within a social representations framework.

4. Historic images of nature within a Social Representations framework

Buijs applies a social representations approach to understanding the cultural-individual dimension of images of nature in a number of studies (2008, 2009). He suggests that while this approach has generally been neglected in earlier environmental research (Buijs et al., 2012), it is increasingly being applied by those in “conservation studies and environmental psychology (Buijs et al., 2012; Hovardas and Stamou, 2006; Selge et al., 2011)” (Buijs & Elands, 2013, p. 185). Buijs stresses the value of this theoretical approach which, as he and Eland suggest, “emphasizes the structure of people’s thoughts, in which knowledge, values, and beliefs are interrelated [Moscovici, 2000]” (ibid.).

Buijs and others writing in this area (Buijs et al., 2012) discuss how social representations theory (now applied within human-nature studies) describes how people’s thoughts about the natural world are cognitively organised into representations of nature, i.e. into individual images of nature. He and others point out that, as a result of this largely unconscious process, individual images of nature (which are the result of the individual’s cultural and own unique experiences) can never equate to social representations of nature.

Applying a Social Representations approach

In his essay on landscape, leisure and tourism, Buijs (2008) contrasts images of nature held by native Dutch people with those of immigrants from Turkey and Morocco.

53 This is a European collaboration, co-authored by researchers from the Netherlands (Buijs), Greece (Hovardas), Norway (Figari), Portugal (Castro & Mouro) and the UK (Devine-Wright, Fisher & Selge).
Applying a social representations approach he argues that ‘culture matters’ and that the differing socio-cultural experiences of these Christian Dutch native and Islamic immigrant groups impact on their perceptions and images of nature. Buijs notes that individual nature cognitions are drawn from circulating social representations and, significantly, these representations of nature include those in the media.

Representations are above all produced in our contacts with other people and institutions, such as the media, nature protection organizations and nature policy practices (p.45).

Buijs’ study findings suggest that while more functional, anthropocentric ‘managed landscapes’ (p.58) are favoured by the immigrant study populations, ecocentric Arcadian and wilderness images of nature resonate with the native Dutch respondents. This finding, which he suggests is largely the result of the enduring Romantic/Arcadian tradition which has permeated Western society since the eighteenth century, is echoed in the findings from two later studies co-authored by Buijs (Buijs & Elands, 2013; Buijs et al., 2012). In these empirical studies local, public images of nature are again centre-stage, but rather than contrasting perceptions of different cultural groups, these local images are valued for their own sake (Buijs et al., 2012)54 and also contrasted with expert images of nature (Buijs & Elands, 2013). In both these studies romantic images of nature endure for lay people (although the romantic is more easily assigned to landscape than images of wolves, where the wilderness image prevails) (Buijs et al., 2012). The following statement by Buijs and Eland (2013) addresses the enduring influence of the romantic painting tradition on public and expert images of nature. While these observations primarily concern landscape, the comments about the influence of early media on public perceptions of nature and the importance of the visual sense are pertinent:

Gobster et al. (2007) …criticize the influence of landscape paintings and the ensuing aesthetic preferences that have been dominant ever since the Romantic era. Scenic aesthetics are then disqualified as a ‘shallow’ or ‘hedonistic’ view that is based only on the visual perception of landscapes… (p.185).

The studies briefly outlined above illustrate how social representations theory has been used within images of nature research to improve understanding around complex issues, negotiated meanings and enduring interests in nature, particularly within the local

---

54 The 2012 study examines three case studies on wolf management (literature, art and media play a more significant role here), invasive species and conflict over landscapes and protected areas.
context. As outlined in the following section, this social representations approach has also informed the development of Buijs’ own social representations nature framework.

**Social Representations Nature Framework**

In his thesis (2009) Buijs situates what he describes as the three dominant Western, ‘white’ views of nature (as functional, Arcadian and wilderness) within a historic framework. He also links each of these views with values and inherent meanings. The functional view, he suggests, is linked to anthropocentric values where nature is viewed as a human resource. While the Arcadian and wilderness views are both linked to ecocentric values and nature as icon, the Arcadian view is also associated with the rural idyll, the picturesque and ‘fragile nature’, while the wilderness view is linked to naturalness, the sublime and an emotional and spiritual bond with nature. Buijs (2009) suggests that the Romantic view (which, for Buijs reflects both the Arcadian and wilderness views) first influenced the wealthy upper classes in Europe, but that this view has “gradually dispersed through all groups in Western societies” (p.55) largely as a result of mass media and that this view now dominates. Furthermore, Buijs’ primary interest is in conservation and he suggests that this enduring, relatively stable romantic view of nature has largely informed conservation practices in the Netherlands.

Buijs then develops his own ‘social representations of nature framework’ (combining elements from mainstream psychology and social constructivism) to better ground these nature views within people’s “real-life practices” (p.227) to gain a more complete understanding of “how social groups and individuals understand their natural environment and act upon it” (p.71). Buijs describes his intentions and his approach:

> Based on social representation theory I suggest that social representations of nature are not restricted to the individual realm of cognitions (as in environmental psychology) or to the social realm of discourse (as in many social constructivist accounts), but are developed in the encounters between individuals, the social group to which they belong, and the natural environments they encounter… [I argue] for a more holistic approach that integrates various attitudinal components into comprehensive frameworks or “images of nature” (2009, pp. 71, 99).

Buijs develops an image of nature framework which is comprised of three discrete, but inherently linked components which, he argues, informs people’s understanding of

---

55 Buijs did a thesis-by-article; the article here (2009a) is the same as the chapter in his thesis (2009).

56 Ecocentric “acknowledge the intrinsic value of nonhumans, independent of human interests” (p.102)
nature. Like the three-dimensional images of nature concept developed by Keulartz et al. (2004) and the three-element visions of nature framework developed by van den Born et al. (2001), these three interlinked elements include both normative (values) and cognitive (belief) components. These include: values (somewhat stable guiding principles, ranging from anthropocentric to ecocentric); beliefs, particularly concerning the human-nature relationship (e.g. closeness, separability, fragility of nature); and value orientations, i.e. “people’s more concrete views on nature conservation or wildlife management” (p.102). Buijs (2009) visualises these elements within a conceptual structure (p.103) (figure 20).

![Figure 20 Buijs' (2009) Image of Nature conceptual framework](image)

Based on the findings from semi-structured interviews with Dutch adults (which included 25 pictures of nature to stimulate discussion) Buijs suggests that five ideal types of images of nature can be identified in the Netherlands. Unsurprisingly, each of these ideal images has a different implication for conservation management: (a) Wilderness image—ecocentric values, ‘hands-off’ nature management (value orientations) and beliefs linked to nature’s fragility and the need for balance; (b) Autonomy image—biocentric values, hands-off nature management and beliefs linked to nature’s resilience and the need for change; (c) Inclusive image—biocentric values, limited management of nature and beliefs linked to nature’s fragility and the need for change; (d) Aesthetic image—weak anthropocentric values, limited management of landscape and beliefs linked to nature’s fragility and balance; (e) Functional image—anthropocentric values, hands-on management/agriculture and beliefs linked to nature’s resilience and the need for change.

While acknowledging the limitations of qualitative research, Buijs suggests that this empirical approach to understanding lay people’s images of nature broadens appreciation of the complexity of researching in this area and furthers understanding of how people

---

57 Rather than valuing entire species or ecosystems, individual plants and animals are valued (see p.109).
think about and value nature. His framework may also contribute towards a common
vocabulary for more informed discussion between public and expert groups, towards
better decision-making in conservation policy. As he suggests, “[i]ntegrating the
pluralism of cognitions into images of nature may help managers to understand conflicts
based on diverging opinions on local nature conservation practices” (2009, p. 99).

**Visions of nature research and the Nature 2.0 study**

While neither nature management, including lay/expert communication and conflict-
resolution, nor a need for a more value-based analytical approach is a driver for the
current Nature 2.0 study, these philosophical and empirical studies address a number of
elements which resonate. The need for a common nature vocabulary to enhance
communication about the natural world is an ongoing shared challenge. Van Koppen’s
(2000) *lifeworld* concept is a meaningful attempt to re-package nature such that
ambiguities and ‘loaded’ meanings fall away; although this concept is admittedly less
well suited to the constructed online environment which (arguably) widens, rather than
reduces the gap between concrete reality and Arcadian or any other nature vision. Of even
greater significance is these writers’ ongoing interest in historical cultural visions of
nature, interest that is shared by those researching representations of nature in mass
media, as outlined in the previous chapter. While the studies in the current section
examine these nature visions within multi-dimensional, values-based frameworks (not
something which is replicated in the Nature 2.0 study) the idea that nature visions and
images can be *associated* with related human attitudes, beliefs and values, is significant.

Deep and enduring cultural visions of nature which, “were often quite removed from
actual experiences of nature” (van Koppen, 2000, p. 305) continue to attract the attention
of human-nature researchers. And while many visions of nature writers say little about
the role of media in the construction of nature visions (Keulartz et al., 2004; van den Born
et al., 2001) those who do reference the role of media (Buijs, 2009; Buijs et al., 2006)
suggest these images of nature not only endure through mass media, e.g. glossy
magazines and TV commercials (Deliège, 2007), but that they continue to influence
responses to nature, informing human attitudes, beliefs, values and even behaviours
towards the natural world.
4.4 Visions of nature and related research on young adults & media

4.4.1 Nature research drivers: nature and young adults

Visions of nature research is largely driven by nature management and conservation interests and attention is routinely on the views and values of different adult groups. Any population or demographic analysis tends to concern not age but gender (de Groot & van den Born, 2003; van den Born et al., 2001), location i.e. rural/urban differences (Hovardas & Stamou, 2006), culture (Bang et al., 2007; Buijs, 2008) and lay versus expert nature views (Buijs & Elands, 2013; Lenders, 2006; Verbrugge et al., 2013). Van den Born (2008) suggests that human-nature luminaries, Peter H. Kahn and Stephen R. Kellert have attended to visions of nature and indeed both writers have undertaken considerable research on the human-nature connection with regard to younger people (Kahn, 1999, 2002; Kahn & Kellert, 2002; Kellert, 1985). However, like others who focus on young people, they typically attend to children or adolescents, i.e. to age groups which are associated with different phases of human development and which generally include populations younger than the young adults (aged 18-20 years) who are the subject of the current study. Those writing on the youth-nature connection include Eubanks Owens on nature values (Owens, 1988; Owens & McKinnon, 2009), Bixler et al. on nature fears (Bixler, Carlisle, Hammitt, & Floyd, 1994; Bixler & Floyd, 1997), Kaplan and Kaplan (2002) on preferred environments, Nevers et al. (2006) on visions and values of nature, King and Church (2013) on countryside experiences and Pointon (2013) on young people’s conceptions of and relationship with nature. In addition, when Kahn and Kellert examine young people and nature their research, like that of others working in this area, routinely attends to nature in relation to more concrete and measurable human knowledge, attitudes or behaviours towards the natural world.

Nature and young adults

Knowledge, attitudes or behaviours also tend to be the foci of those whose interests include young adults or tertiary-level students, addressing age groups which overlap with or are close to the age of students targeted in the Nature 2.0 study. Research in this area—again, like much of the research on children and youth—is often driven by environmental education interests, where the aim is less on people’s visions of nature and more on
assessing the human-nature (or human-environmental) connection in terms of knowledge, attitudes and behaviours. Research which attends to older students and which is driven by environmental education concerns is typically undertaken by environmental and educational psychologists. These researchers routinely apply quantitative methods to articulate and classify worldviews (van den Born, 2008) towards encouraging more nature or environmentally-friendly outcomes. While not wishing to examine these (largely) psychology-based, environmentally-focused studies in any depth there is value in highlighting some of the interests which predominate in this area of student-nature research. For example in the USA studies on college students include such diverse topics as: enhancing environmental sensibilities through online journaling (Arnold, 2013) or measuring nature sensitivity on the NEP scale (Bustam et al., 2003); interdependence with the environment as a predictor of pro-environmental behaviour (Davis et al., 2009); implicit associations with nature measured on the Implicit Association Test (IAT) (Verges & Duffy, 2010) or beliefs about self and nature using Flexitwins, a game version of the IAT (Bruni & Schultz, 2010); and investigating (through essay writing) what wilderness means to millennials (K. Smith & Kirby, 2015). In Taiwan, Liu and Lin (2013) examine the environmental worldviews of undergraduate students, while closer to home (in Australia and New Zealand) Blaikie (1992) assesses the ecological worldviews of undergraduate students in Melbourne, while Fielding and Head (2011) examine young Australian environmental attitudes as these relate to environmental action using measures of locus of control, knowledge and concern. Other ‘down-under’ researchers such as Kilbourne and Polonsky (2005) explore the environmental attitudes of Australian and New Zealand students in relation to the Dominant Social Paradigm (DSP). And more recently in New Zealand, Mann, Costello, Lopez, Lopez and Smith (2014) use the NEP to explore the link between ethics and sustainable practices of first year computing students with a view towards improved, sustainable practices.

Young adults can of course be represented within studies where the driver is nature management or environmental education or even both. However, there are surprisingly few studies by researchers of any persuasion which attend to young adults’ conceptualisations or even views, images or visions of nature, where these approximate

---

58 The term environment can prove challenging; it can be unclear if the writer is actually referring to ‘environment’ as distinct from ‘nature’ or whether they make no distinction between these concepts.
the interests of the current media/web-centred study. As such there is value in selectively attending to those human-nature studies which examine adjacent populations (such as Nevers et al., 2006; Pointon, 2013) and which also include research elements which overlap with the current study interest in conceptualisations of nature on Web 2.0.

### 4.4.2 Media research drivers: nature and young adults

Chapter three included an overview of the predominant cultural representations of nature in the media. These studies point to the mass media as a likely influence on how people think about and even respond to and engage with the natural world. Rather than empirically measuring these influences, however, this research typically addresses media as a potential source of people’s ideas about and responses to nature, as well as pointing to some of the likely effects of media in very general terms.

Those who attend more directly to the effects of representations of nature in the visual arts, print and mass media--empirically testing these effects on the human-nature connection--tend to respond, not to the drivers of conservation or environmental education (although these may be co-drivers within the study), but instead to the interests and drivers of media research. Once again, these studies typically apply quantitative methods to the objects of study but the target population now routinely shifts away from the ‘ready-made’ student population to either young people, at different stages of development or older adults who represent a cross-section of the mass-viewing audience. In addition, these studies again routinely analyse the influences of media on human knowledge, attitudes or behaviours rather than on visions or conceptualisations of the natural world.

A selection of these empirically-based studies which respond to likely influences of media on human-nature relations are outlined below. It is important to reiterate, that while these studies focus on media representations of nature and human knowledge, attitude or behaviours these studies speak to the declared interest in media representations of nature and young adults’ ideas about the natural world. As such, elements of these studies—including the inference that media matter in terms of how people think about nature—are relevant to the current Nature 2.0 study. The upcoming sections address:
a) Media as incidental study component or minor influence on knowledge, attitudes and behaviour

b) Media as significant study component or major influence on knowledge, attitudes and behaviours

c) New media as study component or influence on knowledge, attitudes or behaviour: environmental activism and the web as educational enhancement or assessment tool

---

**a) Media as incidental study component or minor influence on knowledge, attitudes and behaviour**

In contrast with media effects research, where the influence of TV or newspapers is the primary focus of study, other studies acknowledge media, but media may be only loosely described, e.g. “books and other media” (Chawla, 1998, p. 412), largely incidental within the research (Collado et al., 2016) or they may be shown to have a minor influence on human-nature relations. These studies are typically driven by those whose interests, again, concern conservation or environmental education rather than media effects. Selected studies serve to illustrate the main interests and observations here.

In their study on participation in nature, Bustam et al. (2003) usefully attend to a college population sample, but while the authors are interested in the influences on environmental sensitivity, their focus is primarily on the value of outdoor recreation. Not surprisingly, direct nature contact experiences including ‘being outdoors in youth’ and ‘solitude in nature’ rank highly with the students, while ‘books, magazines and movies’ (conflated as a single group) are perceived to be relatively inconsequential. This finding is in accord with the findings from earlier studies on SLEs and sensitivity towards nature. Other environmental researchers (such as Chawla, 1998; Palmer, Suggate, Bajd, & Tsaliki, 1998; T. Tanner, 1998a, 1998b) argue a strong correlation between direct nature contact in childhood and environmental concern in later years. Palmer and Suggate (1996) also, however, point to a growing influence of TV which, they suggest, is largely the result of increasing damage to the environment, and therefore something often featured on television. While many of these studies pre-date the digital era (there was a flurry of activity around SLEs in the 1980s and 90s) findings from more recent, environmentally-focussed studies continue to minimise the effects of (routinely conflated) media and also to assert the ongoing significance of direct contact with nature. For example, in their study
on SLEs, Chinese college students and environmental action, Li and Chen (2014) report the importance of ‘natural experiences’, while ‘media’ (including books, movies and/or the Internet) are found to have minimal influence on behaviour.

b) Media as significant study component or major influence on knowledge, attitudes and behaviours

While human-nature researchers note the generally positive influence of print media (in particular environmental or nature literature) on knowledge, attitudes and behaviour (Lutz & Collins, 1993; Mobley, Vagias, & DeWard, 2010)59 those who empirically assess the effects of representations of nature—or increasingly the environment—typically examine the effects of mass media. Those who empirically assess how ideas about the world—are portrayed on screen, This is then followed by empirically testing viewers’ knowledge, attitudes or behaviours in response to nature.

American social scientist, Jennifer Good, has done considerable research on what she describes as “the intersection of the mass media, materialism and our relationship with the natural environment” (2015). She draws a link between the materialistic images which are promulgated on TV and the consumer-orientated attitudes that people demonstrate towards the natural world (2007, 2009, 2013). And, as she further suggests, the more time spent viewing TV (which, she argues, ‘symbolically annihilates’ nature), the more viewers-come-consumers are likely to damage the environment (Good, 2014). Shanahan, et al. (1997) similarly carry out content analysis of (prime-time) television and they examine the relationship between TV viewing and environmental concern. They also measure the differences between heavy and light TV viewing but, unlike Good, their findings are inconclusive. Rather than critiquing the damaging or detrimental effects of TV viewing, others writing on nature and mass media attend to the effects of positive representations of on-screen nature. They discuss the influence of pro-environmental messages which can be correlated with pro-environmental attitudes and behaviours such

---

59 Many others discuss print media and nature, but their interests concern nature as representation, rather than the effects of these representations (e.g. Luke, 1997; Meisner, 2005; Lerner & Kalof, 1999).
as ‘green-buying,’ and ‘civic engagement behavioural intentions’ (Hartmann & Apaolaza-Ibanez, 2009; Ho, Liao, & Rosenthal, 2014; Holbert et al., 2003; Kil, 2016)

Those undertaking research with younger age groups include Hausbeck, et al. (1992) and Chan (1998), whose studies address the influence of TV news on adolescents’ environmental knowledge acquisition, in the USA and Hong Kong, respectively. Chan suggests a quantitative influence, i.e. the more often students watch the news, “the more general and local environmental knowledge they acquire” (p.302), while Hausbeck and his colleagues assume a more measured position. Referencing environmentalist, Bill McKibben (1992) they suggest that the students are exposed to “environmental awareness but little substantive knowledge” (Hausbeck et al., 1992, p. 31). This sentiment is echoed by Huang and Yore (2005), who compare the beliefs, concerns and behaviour of Canadian and Taiwanese children. In their study they note that:

Although TV is the major education source for children’s environmental learning, the information propagated by the media tends to be ambiguous, short, fragmented, and inevitably commercialized (Fortner, Lee, Corney, Romanello, Bonnell, Luthy et al., 2000) (p.442).

Examples of those writing on the effects of nature-specific media include studies by Eagles and Demare (1999), who positively correlate children’s environmental attitudes with three nature-media variables (talking about the environment at home, watching nature films and reading about the environment) and also Champ (2002) who explores the influence of ‘wildlife media’ (TV and magazines) on American families. Champ argues that while media entertain, they also ground nature values. He suggests that access to wildlife media “literally exploded” (p.282) in the late twentieth century and this media genre has contributed to the shift in wildlife value orientations from utilitarian to protectionist. As a result, Champ argues, policy makers should attend to wildlife media as a “potentially significant player in contemporary wildlife orientations” (p.284).

Finally, Lee’s (2011) study from environmental psychology uses an ‘attitude-intention-behaviour path model’ to show the link between (social and media) exposure to environmental messages and the biospheric value orientations, environmental attitudes and behaviours of over 2,000 Hong Kong students. He argues that mass media contribute to this process and hence “play a role in shaping adolescents’ biospheric values” (p.302).
c) New media as study component or influence on knowledge, attitudes or behaviour

Like many of those writing on the implications of media, Lee’s (2011) study on the role of media exposure attends to the effects of mass media on the human-nature connection; new media are not discussed. Where new media (or more usually the web or the internet) are a component within the research they may be either conflated with other media, as in Li and Chen’s (2014) study (where books, movies and/or the internet were found to have minimal influence on the students’ behaviour) or the same interests which concern mass media may be simply extended to include new media. For example, in their study which correlates pro-environmental media messages with pro-environmental behaviours, Ho et al. (2014) uncritically extend their hypothesis about mass media to new media. Similarly, Kil (2016) suggests that “literature and mass media, very likely including the Internet, can play an important role in distributing information about the environment” (p.12). More worrying than either openly assuming equivalence between media or the reapplication of hypotheses in old and new media domains, is the failure to differentiate (knowingly or otherwise) between media, leading to unsubstantiated assertions. For example, in his article on the ‘nature-disconnected digital generation’, Battisti (2016) writes, “…younger generations are developing digital-based behaviours that disconnect them further from nature (Mayer et al., 2009)” (p.1). This statement flags two concerns. Firstly, the article by Mayer, et al. (2009) contrasts the experience of walking in nature with watching the same setting on video; what they describe as a virtual rather than a digital experience. Secondly, while research may (arguably) substantiate the claim that mass media have contributed to a disconnect from nature the same absolutely cannot be asserted for new media; there is simply insufficient evidence to justify such a claim.

Generally, however, when the internet, web or new media do appear as the primary object of study in conjunction with young adults’ nature knowledge, attitudes or behaviour, this is usually in relation to one of two themes, namely environmental activism or the web as educational enhancement or assessment tool. These themes are outlined briefly below.

Environmental activism

Researchers writing about online experiences of nature increasingly examine how this user-friendly digital space makes it possible to connect and interact with environmental

---

60 The videotapes were made with handheld digital cameras but the process of watching the videos was passive, as one might watch a nature walk on TV (quite unlike an online, interactive digital experience).
groups and activities; encouraging more environmentally-friendly behaviours online and also potentially offline, in the real world. The focus may also be on young people, as in the study by Scherman, et al. (2015) on social media and student environmental protests in Chile and also Montgomery and Gottlieb-Robles’ (2006) examination of youth as e-citizens. More frequently, however, the research interest extends beyond students or youth and interest is in the web as a medium of empowerment, encouraging citizens of all ages to engage with a variety of social, political and environmental activities (Haider, 2015; Shirky, 2010; Wheeler, 2010). This focus on web-based environmental activism, moves increasingly into the area of new media studies, where the nuances of the web as ubiquitous medium, together with the power of the ‘user’ who is active in this online space, come to the fore. While nature and Nature 2.0 (rather than the environment and activism) are central to the current study, the subject of the web as an enabler of different ‘natures’ and nature-related activities is revisited in the following chapter which addresses nature within the new media environment.

The web as educational enhancement or assessment tool

Research on the human-nature connection which includes the web, together with young people, is still relatively uncommon. Where the web does appear, however, rather than the object of study it is more often a mechanism used to either enhance the human-nature connection or to gather and assess young people’s knowledge, attitudes or behaviours about nature or the environment. Studies which use the web as research assessment tool include a number of those already outlined in this chapter which use established survey instruments, such as the IAT (Verges & Duffy, 2010) or Flexitwins (Bruni & Schultz, 2010) or a variety of bespoke online questionnaires (Fielding & Head, 2011; Mann et al., 2014)

Those who use the web to not just measure but also enhance the human-nature connection (i.e. using the web as a tool to educate) do so in a variety of ways, with different age groups. For example, in his ethnographic study with younger children, Harrington (2009) compares a virtual field trip with a real field trip. Harrington notes that while his results show no appreciable difference in knowledge acquisition between the two student groups after these field trips the surprise appearance of a salamander on the real trip ‘made a difference’ to the students (although this finding, he concedes, is difficult to measure). Others, aim to improve the human-nature connection with older students. For example,
Arnold (2013) and also Champ and his colleagues (2013) use online journaling and blogs to encourage a stronger human-nature connection (the latter in terms of ‘self and wilderness’). Similarly, Smith and Kirby (2015) use the web to gather young people’s ideas about wilderness. Their study, ‘Wilderness 2.0: what does wilderness mean to Millennials’ approximates the current research interest, but the authors explore ideas about wilderness through essay-writing, rather than ideas about nature as realised through representations of nature on Web 2.0. While the authors conclude that future conditions matter to how people think about wilderness, media (in particular new media) are not addressed in their prediction, “[w]e conclude that the wilderness tradition remains vital and powerful, but we should expect it to evolve in new directions as social and environmental conditions change” (p. 1). Finally, others aiming to improve the human-nature connection within the digital space regardless of age, include Ahn, et al. (2014) who explore the benefits of growing a virtual tree and Kahn (2011) whose study on telegardening (tending a remote garden) suggest that such web-mediated encounters can impact positively on nature-related behaviours.

Studies which combine interest in visions of nature, young adults and either mass or new media are rare, if not missing altogether from the research landscape. Consequently, this section on media as research driver, together with the previous section where the focus is on nature as driver and younger populations, provide insights into some of the key interests and concerns of allied research. These interests which address such human outlooks and actions as knowledge acquisition, attitudes and even behaviours towards the natural world extend beyond visions and images of nature research, as discussed throughout this chapter. These studies also, however, address additional components which are significant within the current study into young adults’ conceptualisations of nature as realised on Web 2.0.

4.4.3 Combining interests in nature, young people and media

The reason why there has been so little interest in visions of nature, young adults and the media is unclear but one possible explanation concerns the driver for the research; different research interests focus on different aspects of the human-nature connection and research traditions become established, enduring and even entrenched. In terms of the current triumvirate of interests (in nature concepts, young adults and media) several
drivers-come-traditions appear to be evident which may, at least in part, explain why this research gap exists.

Firstly, conservationists and environmental researchers typically examine people’s visions of nature. Their interests are in nature policy and protection and they routinely explore the visions of general and specific adult populations. On the other hand, environmental psychologists and others in academia who have an interest in the natural world, are more concerned with young people’s responses to nature (or more usually the environment) in terms of students’ knowledge, attitudes or behaviours. Research interests are now driven, not by conservation but by environmental psychology and education and the need to enhance young people’s connections with and responsibilities towards the environment. Two population groups are generally of interest here: (1) younger populations (children and youth) who are undergoing their own development and who are subject to external influences (including environmental education) which are informing that development; (2) young adults, in particular undergraduate students who are also developing their own attitudes, values and behaviours towards nature and the environment but who are also, more significantly, readily available as a study population. Where studies driven either by conservation or environmental education also include the media, media (as books, newspapers and television or more usually a combination of all three) typically put in a cameo appearance. The driver for the research is still the natural world and media-as-influence takes a supporting, rather than a leading role.

In contrast, when media and their effects become the drivers to research, media take on increased significance. In new media studies, attention is primarily on the social, political and economic implications of new media technologies and unless nature is framed within the broader discourses around conservation or the environment, new media researchers have little to say about the human-nature connection. For those researching mass media, however, the situation is rather different. Television, in particular, may be seen as encouraging materialistic and consumerist attitudes (negatives, in terms of the natural world) and also to be an invaluable source of information about nature and the broader environment (although this positivity may be tempered by TV’s propensity for negative portrayals of nature-as-environment which is routinely populated with oil spills, air pollution and natural disasters). The underlying driver for these mass media effects studies is that media effect and the target study populations for measuring these effects
are typically impressionable young viewers (children and adolescents) and also adult TV audiences, whose attitudes and even behaviours are influenced, to a greater or lesser extent, by the nature images which are—or even are not—flowing into the living room.

It is reasserted at this point that the current study interest is not in media effects as this concept is conventionally applied within media effects research. A content analysis of interactive websites will not be undertaken nor will the effects of web content on the young adults, whose ideas are surveyed, be measured; to attempt such a thing would be virtually impossible. Rather, the web is used to both elicit and to gather young adults’ ideas about the natural world; ideas that had first to be represented online, such that they were available for the students to select. So while media may not ‘effect’ in the current study, they absolutely have a starring role to play.

In the following chapter attention turns to a third and final study component which is integral to this combined interest in representations of nature and young adults’ conceptualisations of nature, as realised online: Web 2.0 and the new media environment.
CHAPTER 5

WEB 2.0, NATURE AND YOUNG ADULTS ONLINE

5.1 Introduction

This chapter examines the literature on the new media environment, providing an insight into this hard-to-define, ever-changing digital arena. In the current study context, the new media environment includes Web 2.0 (the digital infrastructure) and the social media applications such as YouTube, Facebook and Flickr, which are enabled by this infrastructure. Web 2.0 and social media (these terms are frequently conflated and used interchangeably) are central to this exploration of nature as representation and also young adults’ conceptualisations of nature, as realised online. Web 2.0—together with the social media applications within this interactive, online space—is both study tool and research environment. In addition, the following sections address research on nature as this appears online and also young people, who are actively engaged within this digital space.

This exploration of the new media environment does not formally address other related and at times inherently interconnected fields of study, including mobile technologies, augmented reality (the digital layer over the real) or virtual reality; digital simulations which “allow you to put your arms around the Milky Way, swim in the human bloodstream, or visit Alice in Wonderland” (Negroponte, 1995, p. 119). Mobile technology, augmented and virtual reality do, however, put in cameo appearances either as points of contrast or comparison or as bleeding/leading edges for related or future research.

In summary, this chapter brings together research interests and findings associated with three significant areas of this exploratory Nature 2.0 study, namely Web 2.0, nature and young adults online.
5.2 The Internet and World Wide Web

...a couple of weeks ago… it was the 25th birthday of the internet being switched on here in New Zealand… April 16th 1989… a guy at Waikato University plugged in a modem (nearly broke it in the process) and for the first time connected to the US backbone. …and just a couple of months ago we had the 25th anniversary of the World Wide Web (Griffin, 2014, pp. 13:12–13:30)

New Zealand may have connected to the internet61 25 years ago but the genesis of the internet reaches back much further, to the early 1960s when the US Defence Agency’s Advance Research Projects Agency (ARPA) designed and built the world’s first ‘network of networks’, known as ARPANET (Blank & Dutton, 2013, p. 112). The idea of linking computers (beyond the military) happened almost simultaneously and as early as 1962 Licklider of MIT had documented his ideas about “linking computers worldwide” to create a ‘Galactic network’ (Gauntlett & Horsley, 2004, p. 5). Half a century later, Adams (2009) describes this ‘Galactic network’ as:

...a heterogeneous assemblage of codes, user-controlled hardware, shared infrastructure, protocols, files, codes, skills, task-orientated knowledge, “netiquette,” venture capital, corporate investment, consumer expenditure, and diverse other components…The bunch of hardware people often indicate with the name “internet” would not have any function or character without these non-technological elements (p.57).

The internet was without doubt a technological breakthrough, an unprecedented way of transferring data rapidly between ‘any two points in information space’ (Couldry, 2012, p. 2). It was the World Wide Web, however, conceived developed and launched by UK/CERN computer scientist, Tim Berners-Lee in 1991, which transformed this global network of networks into “an everyday phenomenon” (ibid.). The World Wide Web (WWW or simply the web) heralded a new era in communication technology; it effectively kick-started a communication revolution which was to impact on the way people would engage with one another and with the world around them. Three developments—a user-friendly, graphical interface or web browser, the ability to create webpages using hypertext and hyperlinks which connected these webpages via a URL—combined to create what Carr (2010) describes as an “ecosystem of interruption

---

61 ‘internet’ and ‘web’ are preferred to ‘Internet’ and ‘Web’ although other writers capitalise these terms.
technologies” (p.90). Today the words ‘internet’ and the ‘web’ are often used interchangeably but as Parry (2011) points out the two are not the same:

The web is an application that sits on top of the electronic network we call the internet. The words “web” and “internet” are not interchangeable, although many people use them as if they are. The internet is a technology, a network of networks. The web, email, video streaming, and social networks are examples of applications that use it. The internet is simply the mechanism by which individual computers are connected to one another (p.342).

While some may have difficulty distinguishing between the network and the applications more importantly perhaps, writers and critics have deliberated on the transformative potential of this digital infrastructure. Bryant and Oliver (2008) question the neutrality of “this seemingly benign monster” (p.xv), while the non-technological aspects of the internet—the social, cultural, economic and political dimensions—are simply a given starting point for many critics and popular media commentators writing on the topic (Arora, 2012; D. L. Hansen, Shneiderman, & Smith, 2011). In his analysis of how the internet is affecting our brains, Carr (2010) embraces the transformative power of the internet on the individual and further suggests that, “[w]ith the exception of alphabets and numbering systems, the Net may well be the single most powerful mind-altering technology that has ever come into general use…” (p.116). This is a powerful statement but even in 2003 the idea that the internet had the potential to transform the individual, and perhaps even the social world, was not new. As early as 1997, feminist scholar Donna Haraway proposed cyberspace as one of the “zones that scripts the future” (cited in Holloway & Valentine, 2003, p. 1) and two years earlier the transformative potential of the internet within society was being discussed at the highest levels of the British government. The following statement is from the UK Labour Party document, ‘Communication Britain’s Future’ (1995):

We stand at the threshold of a revolution as profound as that brought about by the invention of the printing press. New technologies, which enable rapid communication to take place in a myriad of different ways around the globe, and permit information to be provided, sought and received on a scale so far unimaginable, will bring fundamental changes to our lives... (cited in Holloway & Valentine, 2003, pp. 1-2).

Analysts, commentators and critics writing in government, academia and the media today would echo these sentiments, written and shared over 20 years ago. This ‘heterogeneous
assemblage’ (which we may know as the internet or the web) has undoubtedly changed and will continue to change the way increasing numbers of people think about themselves and others; how they communicate, shop, bank, study, how they manage almost every aspect of their daily lives. And few would argue as Carr (2010) suggests, that these changes will only strengthen as our dependence on these communication technologies increases.

5.2.1 The new media environment

The internet is fundamental to the new media environment and perhaps more than any other aspect it is the unprecedented convergence of communication, media and other technologies within a single connected, online digital space which enables this new media environment and which most defines the internet for many today. Within the context of the current research into Nature 2.0, this technological convergence is significant not just as an enabler of changing cultural representations of nature but rather as a mechanism with the potential to change the way people think about, appreciate and engage with the natural world. In their book on Mediated Society, Jackson, et al. (2011) address this powerful framing capacity of converged communication technologies. The authors’ interest is in the social world but their ideas are seamlessly extensible to include views about the natural world:

Today’s mediated societies have announced an unprecedented convergence of technologies of communications...this convergence implies ever more powerful instruments that carry and frame interpretation and representation. Representations saturate our way of thinking about others and ourselves. In and through these institutions, socio-political relations, and society itself, are constructed, imagined, and mediated in ways of thinking about others, our everyday social discourse, our sense of belonging, and our world views (p.2).

Representations of our world have always informed how we think about and engage with the world around us. As these powerful instruments of representation increasingly converge within the online, digital space and pervade more and more parts of people’s everyday lives it is likely that the influence of these technologies will become increasingly significant. As such, it is worth providing a little more context around the idea of technological convergence and also other features associated with communication and media sharing within the new media environment. Three characteristics are typically associated with this digital space, namely convergence, de-massification and user-centred
activity. Writing in the first issue of *New Media and Sociology* (1999) Silverston suggests that these characteristics enhance our capacities and pave our way to a different future. The following pages touch lightly on these three topics, providing a context for more detailed examination of the social media technologies which are premised on this media-scape. These technologies enable anyone to participate in the “framing of reality” (Ruddock, 2013, p. 20); to create and rapidly circulate ideas about the social world and importantly within the context of the current study, ideas about the natural world.

**Media convergence, de-massification and user-centred activity**

Media convergence or the bringing together of separate but ‘connectable and compatible’ media in a shared online space (Buckingham & Willett, 2006) blurs the boundaries between media formats and also media experiences. Communication networks become media networks and media networks are communication networks (Parry, 2011, p. 28). As Ruddock (2013) suggests, “when it comes to YouTube, there is no need to look for connections between interpersonal and media communication because they are one and the same (p.149). Chun too (cited in J. D. Jackson et al., 2011) describes this converged media landscape as an “interconnected mediascape” (p. 103), while Laughey (2009) suggests that convergence is so intrinsic to digital media technologies that ‘convergence’ and ‘multimedia’ have now become synonymous (p.137).

A further defining aspect of the new media environment is the de-massification of media; a shift from centralised broadcasting to the masses (one-to-many dialogue) to many-to-many communication, i.e. “individualised, focused dissemination, or narrowcasting” (J. D. Jackson et al., 2011, p. 103). Rogers (1986) describes the process of de-massification (a process which was already underway before the development of Web 2.0) and the implications of this shift in communication:

> The new media are also de-massified, to the degree that a special message can be exchanged with each individual in a large audience. Such individualization likens the new media to face-to-face interpersonal communication, except that they are not face-to-face. The high degree of de-massification of the new communication technologies means that they are, in this respect at least, the opposite of mass media. De-massification means that the control of mass communication systems usually moves from the message producer to the media consumer (p.5).
Moving control from mass media agencies to media users— from the message producers to the media consumers—has enabled hitherto unprecedented potentials in how ideas can be generated, framed, reproduced and shared. Concepts most readily associated with mass media and their effects such as ‘professional gatekeeping’ (Chaffee & Metzger, 2001), the ‘consumer as couch potato’ (Shirky, 2010) and ‘monolithic consciousness’ (Toffler, 1980, p. 405) have now been replaced with ideas relating to ‘power redistribution’ (Blank & Dutton, 2013) and the ‘democratisation of ideas and information sharing’ (Buckingham & Willett, 2006; Tapscott, 2008). As Chaffee and Metzger (2001) suggests, “on the Internet anyone can be an author” (p.370).

While the internet and the WWW have been fundamental in enabling the convergence and de-massification of media technologies, the third characteristic of the new media environment, namely user-centred activity, was only fully realised after 2005 when the web ‘went 2.0’ (N. Carr, 2010, p. 5). Goodchild (2007) describes the change:

…the early Web was primarily one-directional, allowing a large number of users to view the contents of a comparatively small number of sites, [whereas] the new Web 2.0 is a bi-directional, collaboration in which users are able to interact with and provide information to central sites, and to see that information collated and made available to others (cited in Singleton, 2011, p. 372). (p.27)

User-centred activity, Web 2.0 and social media are now so thoroughly entangled—Web 2.0 is largely defined in terms of ‘user engagement and connectivity’ (J. Ahn, 2011)—that it is increasingly difficult to discuss any of these concepts in isolation. That said, the following sections examine Web 2.0 (what differentiates this from the early web and why this matters) and also what is meant by social media; the many tools and applications that are enabled by Web 2.0. In the following section (5.3) the focus then returns to the user and the implications of user-centred activity within this new media environment.

5.2.2 Web 2.0 and social media

The technologies associated with the early days of the web (from the early 90s to the mid-2000s) enabled users to browse and read information online for the first time in history. At this stage user activity and interactivity was still relatively low; bandwidth was limited and the need for computer programming skills meant the web was more a “haven for technological geeks and millionaire hobbyists” (Laughhey, 2009, p. 140) than the high-
speed, user-friendly environment people are familiar with today. Web 1.0 (as this has since become known) was largely a system of bulletin boards (Shao, 2009) which grew to include a variety of mainly text-based “provider-generated applications” (Ritzer & Jurgenson, 2010, p. 19) which included personal web pages and commercial websites, such as the Encyclopaedia Britannica Online. As Tapscott (2008) notes, “[t]he old Web was something you surfed for content” (p.18).

For many, the Dotcom crash of the late 90s and early 2000s (Madslien, 2010) heralded the demise of the web as a socially transformative and economically lucrative phenomenon (for some). The euphoria associated with the Dotcom boom rapidly dissipated in the wake of the crash but far from disappearing from sight the web subsequently became “more important than ever” (O’Reilly, 2005, p. 1). The web survived and as Bray (2005) further suggests, there was a widespread sense that there was something qualitatively different about this new web environment, a revitalised digital environment soon to be recognised as Web 2.0.

The founder of O’Reilly Media Inc., Tim O’Reilly, is widely credited with popularising the concept of Web 2.0 although this term was initially coined a few years earlier in Darcy DiNucci’s short article, ‘Fragmented Future’ (1999). “The first glimmerings of Web 2.0 are beginning to appear” wrote DiNucci, “and we are just starting to see how that embryo might develop… (p.32). More than anyone else, however, it was O’Reilly, together with his colleague, Dale Dougherty, who projected the term onto the world stage initially during a MediaLive international conference held in Los Angeles in 2003. The conference, which later became known as the first Web 2.0 Summit, examined the shift away from the web as a network for distributing software applications and towards the web (or network) as platform. And importantly this reimaging of network-as-platform recognised the power of the web to harness, what O’Reilly and Battelle (2009) describe as ‘collective intelligence’:

…Web 2.0, the living Web, the Hyernet, the active web, the read-write Web. Call it what you like–this ain’t your daddy’s internet. It’s become a global, active, networked computer that allows everyone not only to contribute but to change the very nature of the beast” (Tapscott, 2008, p. 53).

Rather than being viewed solely in terms of technological developments, the web was now defined in terms of interactivity and participation premised on user engagement.
Web 2.0: contested meanings

More recent definitions of Web 2.0 build on O’Reilly’s emphasis on network-as-platform and the harnessing of collective intelligence to create value. Palfrey (2008) describes Web 2.0 as “highly interactive, ‘read-write,’ and user-centric web services” (p.351) while Beer and Burrows (2010) stress the significance of user-generated content, user participation and collaboration (p.4). Other media commentators counterbalance the user component (which is variously framed ideologically around ideas of community, group, individual or even business responses and behaviours) with the functional aspect i.e. around technical affordances or usability of systems. For example, Kaplan and Haenlein (2010) suggest Web 2.0 “represents [an] ideological and technological foundation” (p.61), Cormode and Krishnamurthy (2008) point to both “a particular set of technologies” and a “strong social component” (para 1), while Walther (2012) attends to the social, technical and economic dimensions of Web 2.0. The Research Information Network (2010) provides a useful and engaging summary of what is typically meant by Web 2.0:

While web 2.0 is…identified with particular technical forms, it may be more accurately characterised as the coupling of particular technologies and social practices (p.14)

New media commentators, such as Cormode and Krishnamurthy (2008) and Barassi and Treré (2012) are becoming increasingly uneasy with this simplistic linear representation of web development from the information-sharing Web 1.0 to the interactive, collaborative Web 2.0. Rather it is argued the web includes a mishmash of tools and services which includes those with limited or no interactivity (nothing to click on, no opportunities to upload or download information) and others such as Facebook, which are highly engaging and interactive. In reality, the web is more ‘fuzzy’ than these labels suggest. Other critics contest the validity of Web 2.0 altogether and Merchant (2009) points to the ‘utterance’ of the web’s inventor, Tim Berners-Lee, who argues that the web has always been about users and interactivity, “Web 1.0 was all about connecting people. It was an interactive space” (cited in G. Merchant, 2009, p. 108).

While differing representations of Web 2.0 can be confusing, a more significant danger arises when this confusion translates into uncritical use of the term within academic discourse. As will be evident even in this brief overview, Web 2.0 can mean and will
continue to mean different things to different people, according to their interests in the web as technological innovation, as platform for social transformation or, as conservation theorists are beginning to argue, as a neo-liberal environment for changing conservation practice (Büscher & Igoe, 2013). Despite these ongoing debates there is general agreement that there is value in the term Web 2.0. Bray (2005) suggests that it is a kind of faux-meme or pointer, “and as long as it points in the right direction, so that the listener recognizes what is being pointed at, it works” (para 6). Similarly, Cormode and Krishnamurthy (2008) view Web 2.0 as a useful ‘heuristic device’, a common sense aid to shared understanding about a modern phenomenon. Web 2.0, the authors suggest is simply about “richer methods of user interaction, new technologies, and [a] fundamentally different philosophy” (p.1).

Social media
Social media refer to a wide range of online applications and communication tools that “build on the ideological and technological foundations of Web 2.0” (A. M. Kaplan & Haenlein, 2010, p. 61). Like Web 2.0, the term social media is something of a catchall phrase (D. L. Hansen et al., 2011), another pointer which can mean different things to different people. In essence, social media are a group of online socio-technical systems (including social networking sites, blogs, wikis, photo and video-sharing sites) that are not constrained by time or place (Papacharissi, 2015) and which support two essential activities, namely social interaction between users (D. L. Hansen et al., 2011; Salmons, 2012) and the ability to create, modify and share user-generated content (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011; Regis, 2012). In summary, social media are online, interactive tools, whose underlying architecture is Web 2.0. And as is evident in the many studies, reports and statistical reviews produced around the world the significance of social media cannot be overstated. Haider (2015) argues that social media “are deeply embedded in the very fabric of everyday life” (p.13) while Kim, Jeong and Lee (2010) similarly suggest that social media are now “an integral part of [the] daily lives of hundreds of millions of Internet users all over the world” (p.234). A report from the New Media Consortium (2014) quantifies these assertions:

… a recent report by Business Insider reported 2.7 billion people - almost 40% of the world population - regularly use social media. The top 25 social media platforms worldwide share 6.3 billion accounts among them (p.8).
While the term social media is ‘disliked’ by an increasing number of new media theorists (Papacharissi, 2015) it serves a useful function. It flags those applications which include features which are most readily associated with the web as a highly social environment, namely user-generated content, collaboration and interactivity; key elements affiliated with what Gerlitz and Helmond (2013) call the ‘social Web’. At the most general level, the concept of social media helps separate at a glance the highly popular sites associated with Web 2.0, such as Facebook, YouTube and tumblr, from those tools and services more closely aligned with Web 1.0 or “the ‘old Web’” (Cormode & Krishnamurthy, 2008, p. para 1). Uncritical use of the term social media is, however, unlikely to be tolerated within the research context. Not surprisingly therefore scholars and other media commentators have further defined and categorised this ‘mercurial’ concept (C. T. Carr & Hayes, 2015) according to a range of criteria, dependent on their differing research interests or persuasions, theoretical approaches and methodological frameworks. Social media can potentially be diced and spliced in a number of different ways which will continue to change. However, researchers are often guided by the various technological platforms which underpin and characterise social media. At the very least, researchers typically identify or differentiate between:

**a) Blogs and Wikis**: the very early (but enduring) and generally more limited Web 2.0 technologies in terms of interactivity and multimedia content, although both blogs and wikis enabled content linking very early on (Gerlitz & Helmond, 2013) and increasingly both now include much richer media content (D. L. Hansen et al., 2011). Blogs (originally web logs) are online text-based narratives, journals or personal diaries which include posts in reverse date order (Bik & Goldstein, 2013; OECD, 2007). They are “usually managed by one person only [with] the possibility of interaction with others through the addition of comments” (A. M. Kaplan & Haenlein, 2010, p. 63). Wikis are web pages which can potentially be edited by any online users (Palfrey, 2008; Salmons, 2012). They are ideally suited to collaboration as they allow multiple authors to easily create topics and add or remove content to create what is effectively, “a shared collection of documents” (D. L. Hansen et al., 2011). The most famous public wiki is, of course the “vast, volunteer-written encyclopaedia Wikipedia” (N. Carr, 2010, p. 85).

---

62 Emerging in 2006 and more strongly associated with mobile media devices, the microblogging site ‘Twitter’ is a more recent development; what Regis (2012) describes as “a young upstart” (p.2). With no more than 140 characters, Regis suggests if a blog is akin to a diary, then “a tweet is a postcard” (ibid).
(b) Folksonomies and content-sharing sites: possibly the most difficult group to define as these photo and video sharing sites are seldom bounded or discrete. YouTube videos routinely appear within Facebook and while users of Pinterest primarily share images and videos, this web service is described as both a visual discovery tool and a “photo-only microblogging site” (Bik & Goldstein, 2013, p. 2). For the purposes of the current study, however, some general parameters can be useful. Folksonomies are described as “social-tagging sites [which allow] users to upload, index, search out and view their own content collaboratively” (Laughhey, 2009, p. 140). Users on content-sharing sites are typically “not required to create a personal profile page [beyond basic information]” (A. M. Kaplan & Haenlein, 2010, p. 63). Content sites include the hugely popular video-sharing site YouTube, which in 2010 was the “third most visited Web site” in the United States (Kim et al., 2010, p. 218) and also photo-sharing services such as Flickr, Photobucket, DeviantART and Shutterfly (D. L. Hansen et al., 2011; Palfrey, 2008).

(c) Social-networking sites (SNS): the growth and impact of social-networking sites since the early 2000s has been unparalleled. The most popular sites, what Harrison and Barthel (2009) term “the quintessential Web 2.0 applications” (p.160) MySpace and Facebook, launched in 2003 and 2004 respectively, each claimed “over 250 million registered users by 2009” (Kim et al., 2010, p. 215) and just four years later “more than 1.2 billion people [were using] Facebook regularly” (L. Johnson et al., 2014, p. 8). SNSs are typically defined as online networks that enable individuals to: (1) construct enduring personal profiles; (2) create lists of friends with whom they can connect; (3) view, and connect with others within the system (J. Ahn, 2011; Baym, 2010; boyd & Ellison, 2007). While content is shared on SNS more than anything else social-networking sites are about connecting people to people; they are about ideas around ‘community’.

(d) Virtual worlds and online games: Kaplan and Haenlein (2010) describe virtual worlds as “the ultimate manifestation of Social Media” due to their “[high] level of social presence and media richness” (p.64). Certainly the 3D worlds and personalised avatars that are created within The Sims, Second Life and the many fantasy MUDs and MMORPG’s such as World of Warcraft, create remarkably rich virtual environments,

---

63 “More video is uploaded to YouTube every month than has been broadcast by the three big [US] TV networks in the past 60 years” (Grossman, 2012, p.1).
64 MUDS are Multi-User Dungeons, Dimensions or even Domains. MMORPG means Massively multiplayer online role-playing game. “Massively multiplayer online games (MMOs) are video games
which are often highly collaborative (J. S. Clark, 2014; D. L. Hansen et al., 2011; Taylor, 2010). There can also be a ‘double dose’ of interactivity associated with online games when these systems become part of wider social-networking sites. For example, Farmville (which allows players to grow crops, raise animals and purchase machinery for their online farm) is accessed via Facebook (Parry, 2011, p. 317).

Social media - contesting categories and conflating concepts
As previously noted, different scholars writing about social media will categorise these tools and applications in different ways and SNS, such as Facebook and MySpace may even be represented, not as examples of social media but as the embodiment of social media or even of the web itself (see A. M. Kaplan & Haenlein, 2010, p. 60; TNS Global, 2008, p. 8). Differences around nomenclature and categorisation of social media however, are overshadowed by an even more significant reality which impacts on researchers and media analysts of all persuasions. Boundaries between social media categories are no longer simply disputed, they are fast becoming blurred and difficult to maintain or even justify. Ahn (2011) suggests that YouTube is “primarily a video sharing service, but [that] users can add others as their friends or subscribe to a member’s collection of videos” (p.1437). Boyd and Ellison (2007) similarly note that social networking sites support a “wide range of interests and practices [and also] vary in the extent to which they incorporate new information and communication tools, such as mobile connectivity, blogging, and photo/video-sharing” (p.210). Kim, Jeong and Lee (2010) tackle the boundary-breaching issue head-on, in their article on ‘social Web sites,’

…the distinction between social networking sites and social media sharing sites is fast becoming blurred… [and] is fast disappearing, as social networking sites are adding primary features of social media sites features, that is, the sharing of UCCs [user-created contents]; and social media sites are adding primary features of social networking sites, that is, personal profiles and forming communities… (p.233, 217).

Using concepts such as social web sites or even social web technologies may indeed be a better way to address the increasingly mixed-up, endlessly morphing social tools and applications that now populate the web. Within the context of the current research, however, what matters most is not how accurately sites are clustered or defined but rather
how these sites can be most usefully grouped to better understand the nature content which is circulating within these social media spaces. The focus of the current research is on the representations of nature which are being uploaded, viewed, tagged and otherwise circulated on social media and how these ideas may influence or reflect young people’s own ideas about the natural world. As such, it is important to take the students’ lead, to be sympathetic to their various understandings about what social media are, to respond to the content which appears on the applications which the students’ themselves select.

As a result, a pragmatic approach is taken to representing social media and this term (and even Web 2.0) will continue to be used as a *faux-meme* to point to the wide range of frequently overlapping web tools and services which are included under this umbrella concept. Rather than engaging in further discussion around website nomenclature or classification what is more important is the need to establish which aspects of social media are in scope and which fall outside the parameters of the current study. As already highlighted, interest is in the nature ideas which are circulating on social media. As such the focus is on the *content* which is shared via social media rather than the identity-making or relationship-building that is enabled by these applications. The current research interest is the green, elongated circle in the centre of figure 21; the nature text, image, video and audio content which is circulating on social media. In contrast to the majority of social media researchers, this study therefore says little about the social aspects of these inherently *social* online tools.

*Figure 21 Study focus: circulating nature content (green circle)*
5.3 The user in the new media environment

The social or participative web is premised on the user and the creation of user-generated content:

[The participative web] is based on intelligent web services and new Internet-based software applications that enable users to collaborate and contribute to developing, extending, rating, commenting on and distributing digital content and developing and customising Internet applications… (OECD, 2007, p. 17).

In his study of audience behaviour, Shao (2009) discusses not social media but user-generated media. This terminological turn more explicitly realises the centrality of the user and the user’s role within the new media environment. This section discusses the user and user-generated content or UGC and what is meant by these terms. This section then provides an overview of the main discourses around the user-centred experience including: (1) user power, to do what, when and where the user wants; (2) participation, user interactivity and making connections; (3) prosumption, the user as both producer and consumer of content; (4) personalisation, or user-centred interest. Each of these themes is significant and contestable within new media studies and more importantly here each (to a greater or lesser extent) is significant in terms of ideas about nature which are circulating on Web 2.0.

5.3.1 The user and user-generated content

In 2006, Lev Grossman, writing in Time Magazine (now famously) described how Web 2.0 was transforming society, empowering community and collaboration and enabling web users to create a new and better world:

And for seizing the reins of the global media, for founding and framing the new digital democracy, for working for nothing and beating the pros at their own game, TIME’s Person of the Year for 2006 is you (2006 para 3).

While few would embrace Grossman’s unqualified optimism, his focus on the user as the driving force within the new web environment is justifiable. As Johnson et al. (2014) suggest, “[t]oday’s web users are prolific creators of content” (p.8) and Dylko (2012) points out that, “blogs, wikis… discussion boards, social-network sites, and content-sharing sites [are all] …shaped to a significant degree by the users’ actions” (p.4). So who
is the user and how is the user defined? The user is perhaps best described in terms of their actions and behaviours around web content; something which is central to the current study on nature content on social media. As van Dijck (2009) notes, “[u]sers are generally referred to as active internet contributors…” (p.41). Van Dijck and others such as Shao (2009) take their lead from the OECD (2007) report which presents a useful portrait of the user-as-active-contributor through their explication of user-created content (UCC). The OECD report defines UCC as content which:

i. **Is made publicly available over the Internet**…[includes] websites and social networking sites with a restricted audience; excludes email, two-way messaging;

ii. **Reflects a certain amount of creative effort**…users add their own value by e.g. uploading original photos, commenting on blogs, editing websites; simply posting conventional media clips, such as TV shows is not considered UCC;\(^{65}\)

iii. **Is created outside of professional routines and practices**…no institutional or commercial context; motivations are around self-expression and connectivity with others rather than remuneration or profit (paraphrasing pp. 8-9).

The authors of the OECD report concede that the boundary around the third UCC characteristic is becoming difficult to maintain as there is a growing shift from grassroots movement to a monetisation of UCC on the Web. They argue that “[e]stablished media and Internet businesses have increasingly acquired UCC platforms for commercial purposes” (p.18). Ha, Leconte and Savidge (2013) and Hansen et al. (2011) also note how professionally made content generated by educational institutions, media and other commercial organisations is now routinely represented alongside user-generated (amateur-created) content on video-sharing sites such as YouTube and Vimeo. Perhaps Parry (2011), in his enthusiasm for the web, most clearly (albeit unwittingly) conveys the reality of this new media environment when he suggests that this ‘uber-medium’ is not only an enabler of those services which are underpinned by user activity but that the web is also a new business environment.

---

\(^{65}\) The authors make the point that it can be difficult to define the minimum amount of creative effort required to make content UCC and that this largely depends on context (p.18). Shirky (2010) defines the user-as-amateur in the web environment, “[a]mateurs are sometimes separated from professionals by skill, but always by motivation; the term itself derives from the Latin *amare*—‘to love’ (p.82).
In their attempts to understand the concept of the user within this new and rapidly changing landscape media commentators examine how content is produced and also consumed on the web. Processes of production and consumption are routinely represented as being either beneficial to the user (as Grossman suggests in the aforementioned article) or damaging to both the user and society more generally. This is particularly evident in the discourses concerning prosumption (conflation of production and consumption) and personalisation of websites. The former may be associated with user empowerment or Faustian bargain while the latter may be positively framed as user enrichment or in terms of the more insidious filter bubble. Prosumption and personalisation are examined below, together with the related concepts of user power (to do what, when and where I like) and also user participation or interactivity online. Prosumption and user participation, in particular, are significant in terms of the analysis and discussion of the nature content which is shared in the student selected websites.

5.3.2 Power, participation, prosumption and personalisation

Power: push to pull

While a number of social media sites were available prior to 2000, researchers, media critics and other social commentators only really began to take notice of social media after this time, following the appearance of popular sites such as Wikipedia, the social-networking sites, Friendster and MySpace and the professional networking service LinkedIn (all appeared between 2001 and 2003). But social media sites really took off on a truly grand scale around the mid-2000s, roughly coinciding with the first Web 2.0 summit in 2004, when content-sharing sites Flickr and YouTube and social-networking sites, Bebo and Facebook crashed onto the digital scene. Despite the ‘newness’ of new media, however, as early as the mid to late 90s media commentators Negroponte (1995), Jensen (1998) and Tapscott (1998) were anticipating how digital (social) media would change media consumption, putting consumer power in the hands of the user. Unlike ‘old’ media where users had little control over where or when media content could be consumed new media would, as Jensen (1998) suggests, “be characterised by a user pull rather than a producer push” (cited in Olsson, 2006). Jensen’s words echoed those of Negroponte who had earlier predicted a ‘content-on-demand’ digital future in his highly

---

66 Notable examples include the social-networking sites SixDegrees (1997), LiveJournal (1999) and the online game, World of Warcraft, first released in 1994.
acclaimed and ‘mordantly witty’ book, Being Digital. “Being digital”, Negroponte claimed, “will change the nature of mass media from a process of pushing bits at people to one of allowing people (or their computers) to pull at them… On-demand information will dominate digital life” (1995, pp. 84, 169).

Moving forward 20 years and the “martini media phenomenon,” i.e. media consumption “anywhere, any place, any time” (Parry, 2011, p. 370) is now a reality for many. Media users can select what channels to view, what content to watch and where and when to view this content. However, whether this shift from (analogue) push to (digital) pull has realised the hopes and expectations of those early internet enthusiasts—who suggested that putting users in control would improve the “watered-down, lowest-common-denominator content” which had traditionally washed over the masses (Pariser, 2011, p. 67)—now seems hard to imagine.

**Participation**

User participation is routinely presented as being the hallmark of Web 2.0 (Shirky, 2010; Tapscott, 2008) and as the defining characteristic which ultimately distinguishes Web 2.0 from the early web:

The early period of the web is often referred to as Web 1.0 or the ‘Web-as-information source’ and is commonly placed in a dichotomy with Web 2.0 as the ‘Web-as-participation-platform’ [citing Song, 2010] (Gerlitz & Helmond, 2013, p. 1350).

Web 2.0 has enabled people to create content and real-life, real-time connections which link people rather than simply webpages (through hyperlinks). As Harrison and Barthel (2009) point out, these services and applications made it possible for “more direct, interactive and participative user-to-user interactions than heretofore experienced on the web” (p.157). This bi-directional, increasingly multi-directional, de-centralised, collaborative communication environment (Goodchild, 2007; Neuman, 2010) is in sharp contrast to the mass media environment and also much of the early web, where communication typically flowed in a single direction.

As indicated, the focus of the current study is on circulating nature content (as image, multimedia and text) rather than on collaboration or community. So while acknowledging
the significance of the participative, community-building aspect of social media (most evident in the social-networking site, Facebook) of greater interest in terms of the Nature 2.0 study is the user as consumer and most importantly producer of nature content online.

Prosumption
A defining aspect of blogs, wikis, SNS and other Web 2.0 applications is their flexibility and ease of use, allowing ordinary users to “write, post and publish content without the need for special software” (Laughey, 2009, p. 140). This functional ease or ‘technological affordance’ (Best, 2009; Hartson, 2003)67 distinguishes Web 2.0 tools and services from those associated with Web 1.0, where content creators required a degree of technical competence and the majority of users were simply consumers of the content which others produced (Cormode & Krishnamurthy, 2008). In contrast, little technical knowledge is required to actively participate in the new web environment and ordinary users can engage online, not just as consumers but also as producers of content, ‘co-creating’ media, services and information. This alternative co-creation paradigm (Dick, 2011) is enabled by technology but it is the “users’ propensity to construct content” (Harrison & Barthel, 2009, p. 155)–users’ enthusiasm for uploading videos on YouTube, tagging photos on Facebook and revising entries on Wikipedia–which has fully realised the potential of the web environment. Users choose to add value to online media and information products thereby changing the way web content, products and services are created and shared (Beer & Burrows, 2010). This ultimately blurs the boundaries between the processes of production and consumption and gives rise to what is now generally known as ‘prosumption’ (Tapscott, 2008, p. 208).

Prosumption - genesis
The term prosumption is not new but the user-generated web has “given it even greater centrality” (Ritzer & Jurgenson, 2010, p. 20; see also van Dijck, 2009). American writer and futurist, Alvin Toffler first coined this term in Future Shock (1971) and McLuhan uses prosumerism a year later in his book, Take Today (1972) (Tapscott, 2008). However, it was Toffler who refined this neologism somewhat later in The Third Wave (1980) where he describes three periods of civilisation or waves within Western society: the agricultural

67 Donald Norman appropriated ‘affordance’ from Psychology and reapplied this to human-computer interaction. “To Norman (1999), the unqualified term affordance refers to real affordance, which is about physical characteristics of a device or interface that allow its operation” (Hartson, 2003, p.316).
(to the mid-1700s), the industrial and the contemporary period (from the mid-1950s onwards). Toffler suggests that prosumption was a feature of the first and is again a feature of the third wave. “Above all”, he argues, “Third Wave civilization begins to heal the historic breach between producer and consumer, giving rise to the “prosumer economics of tomorrow” (p.27). And, as Ritzer and Jurgenson (2010) further describe, it is the emphasis on both production and consumption–rather than either of these processes separately–that most defines prosumption.

Prosumption as liberating potential or Faustian trade-off

Increasingly, the discourse around prosumption is centred on what might be described as the liberating or emancipatory potential of the web and the Web 2.0 Faustian trade-off:68

On the one hand, Web 2.0 platforms such as Flickr, YouTube, Twitter and Facebook allow users to become so-called prosumers… the interactive features of Web 2.0 technologies offer unprecedented democratic possibilities for individual engagement and empowerment… On the other hand, as Zimmer (2008) explained, Web 2.0 technologies also enable an increased flow of personal information across networks, the emergence of powerful tools for peer surveillance, the exploitation of free labour for commercial gain and an increased corporatization of online social spaces and outputs…(Barassi & Treré, 2012, p. 1271).

The democratising potential of Web 2.0 has been evident throughout this overview of the new media environment. As already observed by Barassi and Treré (2012) the participative web “facilitates the co-production of information, social networking and rich user experiences” (p.1270). For many, the natural endpoint of this enriched information and communication environment is transformative and liberating: Web 2.0 enables a more informed and empowered community and ultimately leads to a new and better world. Barassi and Treré (ibid.) also, however, point to three Faustian trade-offs including the exploitation of labour, misuse of personal data and corporatization of Web 2.0. While Marxist and other economic theorists are concerned about labour relations online (Cote & Pybus, 2007; Ritzer & Jurgenson, 2010) and others highlight the misuse of personal data (Gerlitz & Helmond, 2013; Zimmer, 2008) these trade-offs are beyond the scope of the current study into nature ideas realised online. The corporatisation of Web 2.0 may, however, signify in terms of the websites which are chosen by the students’ as being representative of nature for them. As such this third Faustian trade-off is outlined below.

68 Zimmer called this double-sidedness the ‘Faustian bargain of Search 2.0’; later picked up by Langloise et al. (2009), who reframed this as the “Web 2.0 Faustian trade-off” (Barassi & Treré, 2012, p.1271).
Prosumption and professionalism

The third Faustian potential, identified by Barassi and Treré (2012) is described as the “increased corporatization of online social spaces and outputs” (p.1271). This business-orientated approach does not deny the overtly exploitative or more deceptive aspects of commercial and other interests but rather it presents Web 2.0 as a contemporary business environment where user-generated content is simply an integral component of revenue generation, ultimately contributing to the success or failure of the company. As Tapscott (2008) blithely explains:

Thanks to the Web 2.0, companies in just about every industry can turn their consumers into producers—that is “prosumers.” Prosumerism is more than an extension of mass customization, customer centricity, or any of the other terms that boil down to companies making basic products and letting customers tweak the details. It’s what happens when producers and consumers both actively participate in the creation of goods and services in an ongoing way (p.209).

Harrison and Barthel (2009) discuss why the Web should now be viewed as business model; a commercial environment which includes a “set of motivations for business advantage” (p.173). They cite the example of Amazon (the world’s largest online retailer) and this company’s use of UG reviews to leverage advantage over their competitors. This reimaging of the user as an unpaid contributor to the success or even the survival of the business (Kietzmann et al., 2011) is now commonplace and is most visibly evident in journals such as Business Horizons. In this and other commercially-focused publications the discourse has already shifted beyond whether or not Web 2.0 is a new business model to providing advice on how best to leverage business success within the new web environment which has at its core the user as creator of content. Tapscott (2008) more than many other commentator is a supporter of this user/business collaboration model so perhaps the last words on this subject should come from him:

[Facebook is] a prime example of the mass collaboration we were describing in Wikinomics. In the book, we wrote that “winning companies today have open and porous boundaries and compete by reaching outside their walls to harness external knowledge, resources and capabilities” Facebook is doing just that (p.64).

The fourth and final element which is routinely addressed in the context of the user experience is personalisation. This too has the potential for both positive and negative outcomes, either enriching or impoverishing the user’s experience, however, once again
these considerations are beyond the scope of this Nature 2.0 study. That said, the idea that particular web content is surreptitiously given priority over other content is noteworthy. This has implications in terms of the nature content that the study respondents not only search for (when asked to choose an online site which includes content which is representative of nature for them) i.e. the search terms used, but also the nature content which is prioritised by Google for that person. It is not possible to explore this particular aspect in any detail within the current study however, as the potential significance of personalisation has been noted a brief account of this user element is included below.

**Personalisation**

At the same time as Negroponte was predicting that on-demand information would “dominate digital life” (1995, p. 169) he also anticipated a post-information future where users would get only the content they wanted; what he called The Daily Me (p.153). Negroponte suggested that filters would enable digital information to be personalised such that everything could be “made to order” for an audience now reduced to “the size of one” (p.164). Pariser (2011) suggests that the ‘personalization era’ began more than 20 years later, when a post appeared (without fanfare) on Google’s corporate blog: “Personalized search for everyone” (p.1). Whether or not this announcement on December 4, 2009 really did mark the beginning of personalisation on the web it seems unlikely, as the blogger Danny Sullivan points out, that the personalisation genie will “go back in the bottle” (in Pariser, 2011, p. 13).

Personalisation is an integral part of the new media environment but it is also an aspect which is often overlooked by the user. The implications of this process can, however, be far-reaching. Using complex algorithms based on a combination of technical and personal information, including user behaviour (previous online searches, captured through keyboard clicks) and user profile information (such as IP address, music and viewing preferences, shared on Facebook), Google, Amazon, YouTube and a multitude of commercial media and other online organisations are able to provide the content that most closely matches the user’s requirements whether this be news about conflict in the Middle East or information about books or movies the user is most likely to enjoy. This data sharing between the user and the host may or may not be a transparent process but the benefit to the user is that he or she is likely to get what they want online and to get this very quickly. And from a business perspective, companies are not only boosting
readership or sales (and potentially getting ‘Very valuable data’ which can be on-sold to third parties) they are offering a much more responsive, user-centred service.

**Personalisation and unintended consequences**

For many web users personalisation is an added bonus when searching online; indeed, the idea of navigating through the vast quantities of information available without this filtering is almost unthinkable. Personalisation does the hard work of removing what is out of scope and the user gets ready access to what he or she wants or at least the user is directed to what the news organisation, retailer or search engine thinks the user wants (not necessarily the same thing). As author of *The Filter Bubble*, Eli Pariser argues:

> Ultimately, the proponents of personalization offer a vision of a custom-tailored world, every facet of which fits us perfectly. It’s a cozy place, populated by our favourite people and things and ideas. If we never want to hear about reality TV (or a more serious issue like gun violence) again, we don’t have to…If we never click on the articles about cooking, or gadgets, or the world outside our country’s borders, they simply fade away. We’re never bored. We’re never annoyed. Our media is a perfect reflection of our interests and desires (2011, p. 12).

Pariser’s observations may be extreme but his comments serve to highlight a very real concern for many. By filtering out unwanted information (knowingly or otherwise) users are creating their own ‘electronic fences’ (Cormode & Krishnamurthy, 2008) around preferred content. This ring-fencing reduces the likelihood of the user encountering content which is unfamiliar, unknown or felt to be unwelcome. Almost counterintuitively the web now becomes a mechanism for pushing preferred content to the user, rather than providing a gateway for users to pull new ideas and information (including new ideas about nature). And while it can be argued that this can be a good thing (the user quickly gets to the content he or she wants) this has a darker side; what might be described as the unintended consequences of personalisation. The preferred content which users are directed to is also content which is already familiar and which essentially reinforces the user’s ideas, perceptions and current bias. Personalised news feeds reflect and reinforce the user’s interests and their political views may not be challenged. Visits to Amazon will be accompanied by prompts such as ‘you liked this, so maybe you’ll also like (and want to buy) this,’ again referencing the user’s established interests and encouraging the reader towards the known, the already familiar. Similarly, a search on YouTube will take the
user (possibly unknowingly) to results based on previous searches directing them, once again, to the known, the familiar, the safe.

It can of course be argued that people already select content according to their preferred interests and persuasions; TV viewers choose which programmes to watch and readers attend to newspapers articles that interest them while ignoring others. However, it is the transparency (or lack of transparency) combined with the pervasiveness of the online environment (time spent and activities undertaken) which differentiates experiences of conventional and new media. The most concerning consequence of personalisation is, as Pariser (2011), Chaffee and Metzger (2001) and others suggest, that this impacts on how users see and make sense of the world. And importantly, online interests and activities about the social and also the natural world have real world consequences.

5.4 Nature and the new media environment

Over the last 30 years, web tools, products and services, together with other core elements and features of the web, have been the focus of study for political, economic, social and media theorists. The web has opened up countless areas of new research many of which conjure up visions of online realities which are situated somewhere between the magical utopian (Negroponte, 1995; Neuman, 2010) and the nightmarish or dystopic (Palfrey, 2008; Shao, 2009). But rather than ‘pure fantasy’, as Jackson et al. (2011) suggest, this overarching polemic discourse both “reflects the specific contexts of the time” and “delineate[s] our boundaries and the particularities of the social imaginary” (p.106-7). It is argued that this social imaginary relates not only to how the social world is represented and perceived but also to how the natural world ‘appears’.

5.4.1 Online research interests

The web has yet to attract the attention of those researching visions, images or concepts of nature. And, as discussed, those researchers with an interest in the human-nature connection who are beginning to attend to the online space as a significant component within their research typically focus on one of two topics. Interest is either in environmental education, where the web is used to measure and even change young people’s knowledge, attitudes or behaviours towards the environment or in environmental
activism, where the web (now the object of study rather than study tool) is examined in terms of empowerment, enabling and encouraging people of all ages to participate in activities which support positive outcomes for both people and the environment.

Others who are beginning to be active in this space explore the potentials and pitfalls of both real nature and a re-imaged natural world online. These related interests may also focus on education or activism (in association with young people or wider populations) but they also extend beyond these domains. As discussed, research into online nature is still scarce but three areas of interest are now beginning to emerge:

- New media-as-technology and nature: part of a wider human-technology discourse
- User-generated natures: referencing ‘uncut’ nature, animals and humour
- Nature conservation online: organisations and user participation

The following sections outline these online nature interests and their significance in terms of the current Nature 2.0 study.

**New media-as-technology and nature**

UK writer, Sue Thomas attends to nature within the new media environment. Her particular interest is biophilia—what she now terms technobiophilia—and she seeks to build, discover or rediscover human-nature connections via the web by identifying and engaging with, for example, nature-web language (such as bug and cloud) and idealised nature landscapes. Thomas is a technological optimist; she celebrates the positives associated with online nature as is evident in her book, *Technobiophilia* (2013) and also her website, launched early 2016: [www.technobiophilia.com/](http://www.technobiophilia.com/)

Others with an interest in human well-being and nature also examine nature on-screen, although these virtual nature representations are more likely to appear on video or plasma rather than computer screens. For example, Craig et al. (2015) examine the restorative effect of digital images of nature on patients with depression, while Benfield et al. (2014) explore the health-giving properties of virtual sound (to complement visual virtual nature studies). Kahn, Severson and Ruckert (2009) also explore the implications of virtual nature on-screen and suggest:
Results showed that participants enjoyed the plasma-display window and benefited from it in terms of their psychological well-being, cognitive functioning, and connection to the natural world (p.38-39).

Kahn has been researching nature and the technological turn since the early 2000s although his studies, like others in this area, generally move beyond the web and focus on nature and technology in the wider sense. For example, Kahn, et al (2009) bring together three nature-technology interests which examine: (a) a real-time plasma display of nature; (b) a telegarden via the web; (c) children’s interactions with AIBO, a robotic dog. Michael (2000) similarly attends to the nature-technology interweave and he explores ‘mundane technologies’ such as the car and TV remote control and the emergence of what he describes as new hybrid objects. His analysis draws on the philosophical insights of Serres, Latour and Haraway, signalling those interests which drift even further from nature and technology-as-digital to the increasingly entangled worlds of a “highly technologically orientated society… [concerned with] robotics, AI research, molecular biology, genetic engineering [and] nanotechnology…” (Guga, 2015, p. 45). These interests breach the nature-technology (or nature-science) divide and now explore notions of ‘interrelated nature regimes’ (Escobar, 1999), hybridity and even the image of the cyborg. As Drenthen et al. (2009a) suggest in their exploration of new visions of nature:

Donna Haraway… has shown that nature and the artificial today are intimately linked, questioning the very idea of nature as a realm that can be separated from the human and the cultural… [and the authors ask] if technologically mediated nature experiences like robots and plastic trees are becoming ever more common, then what can the term ‘authenticity’ refer to? (p.9, 10)

Nature’s authenticity is a recurring theme in the nature literature, appearing within and beyond the crumbling boundaries that separate nature from culture and nature from technology. In his essay in Reading Digital Culture, Markley (2001) picks up on the idea of authenticity, truth and fiction within ‘cyberspace’ where, he suggests:

The fiction of cyberspace is useful precisely to the extent that it allows its proponents to imagine an anthropocentric reality in which a threatening, messy, or recalcitrant…nature never intrudes (p.299).

69 “…an actual garden in Austria that allow[s] remote ‘‘gardeners’’ to plant and tend seeds by controlling a robotic arm through a Web-based interface” (Kahn et al., 2009, p.39).
The above quotation usefully anticipates the second emerging area of new media and nature research interests associated with the user and user-generated content in the digital space. This pulls back from the broader nature-technology entanglements flagged above and revisits the online world as a place where hybridity can be imagined for a variety of reasons, not least of which is human pleasure. This is about UG image-sharing for entertainment, sharing the funny, the freakish and also—as counterbalance within this open, unbounded virtual space—nature representations which can be the antithesis of funny; nature which approximates the real; raw nature or the natural world ‘uncut.’

**User-generated natures**

Another article written by Grossman appeared in *Time Magazine* (2012) entitled, ‘The Beast with a Million Eyes.’ Grossman noted that, “[i]n just seven years, YouTube has become the most rapidly growing force in human history” (p.1). And, as Johnson (2014), suggests just two years later:

> More people are turning to social media for recreational and educational purposes than to television and other popular mediums. YouTube, for example, reaches more U.S. adults aged 18-34 than any cable networks (p.8).

Few would dispute the significance of YouTube, Facebook and other high profile social media tools and platforms in the modern world. That said, research into representations of nature within these online spaces can be hard to find. The following section therefore presents two examples of how nature can appear in these user-generated, interactive web spaces, which are drawn from academic and also popular sources. In the current context to do so is not problematic, as rather than interrogate these nature representations the intention here is simply to provide illustrations of these changing representations of nature as they now appear within the user-generated, online space.

**Nature-centric: nature uncut**

The first new nature representation which has been enabled by social media in general, and YouTube and other video file-sharing services in particular, is ‘nature uncut.’ This references authentic or real nature (as discussed in chapter three) but it goes beyond the blue-chip veil of illusion. For the first time in history, social media make it possible for real nature (rather than reel nature) to be represented on-screen; raw nature which, while still framed, is captured by the amateur, side-stepping the high-end production values,
editorial and other conventions associated with wildlife films and nature documentaries. Blewitt (2010) discusses the hallmarks and impact of this raw nature through discussion of ‘Battle at Kruger,’ a short video of a predator attack on a buffalo calf, uploaded to YouTube in 2007. Not only did this amateur footage receive wide recognition, it was viewed nearly 50 million times over the next three years. In her Next Nature online essay Allison Guy (2011) also attends to this uncut nature and she does so head-on. While the following quotation is lengthy, it usefully articulates why these raw, unedited representations of the natural world are of a very different order:

On Youtube, there’s a whole sub-genera of safari videos that show, in gruesome detail, what exactly it means to live and die in Old Nature. [Wild dogs kill kudu]70 is a particularly stomach-churning example, depicting African hunting dogs that eviscerate and devour a kudu while the antelope is still very much alive. It’s the sort of material that winds up on the editing floor during the production of a typical nature documentary. Wildlife films sanitize the predator-prey relationship. Death occurs off-screen; if it is shown, it’s bloodless and quick. Amateur nature videos remove a layer of artistic interpretation between the audience and “authentic” nature. Without a sound track or a narrator contextualizing the hunt, death becomes neither triumphant nor tragic. It doesn’t impart any moral lessons. In nature, as in YouTube, death just happens (n.p.).

These nature-centric images of a raw, uncut natural world may be appreciated and condemned by online users in equal measure. A second loose grouping of new natures also enabled by new media technologies may be more entertaining but for many, these human-centric representations of nature can still unsettle as well as amuse.

**Human-centric: humorous nature, animals and memes**

The nature images shown in figure 23 (below) are examples of humorous nature representations; animal hybrids which have been spliced and recombined using photo manipulation tools, animal memes or advice image macros (Dynel, 2016) (such as LOlcats and Courage Wolf) and funny, talking animals which are widely evident on YouTube.

70 [www.youtube.com/watch?v=TrsGpeifqe](https://www.youtube.com/watch?v=TrsGpeifqe) Retrieved 30/1/1
PART II: STUDY COMPONENTS, THE LITERATURE

CHAPTER 5

It is hard to imagine that these images in any way fulfil the expectations of Tim Berners-Lee who, 25 years ago believed he had, “created an egalitarian tool that would share information for the greater good” (Jeffries, 2014). For many users, however, when it comes to experiencing nature content these are the types of images which are routinely—if not frequently—shared and viewed online. Significantly, what binds these and the countless other amusing, talking, joking and hybrid animal-as-nature images (which can attract millions of views) is the fact that these images have very little to do with the natural world. Instead these representations are all about culture—about humour, entertainment and social bonding (Dynel, 2016). Anthropomorphised animals have long been used to tell tales about people; Aesop’s fables and Disney narratives are obvious and enduring examples. They are used to explore human emotions, examine human behaviours and make connections between individuals and groups. Dressing animals in silly clothes and making them look and behave like people is nothing new. In the online world, however, these images can be readily generated, manipulated, uploaded and shared for the entertainment and amusement of multiple others (as well as for the promotion of self). So while these human-centric images of nature may not be a direct consequence of new
media technologies it is within this open, unregulated, unmanaged, interactive environment that such visual game-playing and truth-bending finds a natural home.

While there is still a paucity of nature research into online representations of the natural world, there is a growing body of new media research into online memes (including those with animal images), as part of a wider interest in global digital culture. In her review of Shifman’s *Memes in Digital Culture* (2013), Neville (2014) outlines the concept of memes within the digital arena:

“Memes” are small units of culture, such as songs, fashions and catch phrases that spread from person to person by copying and imitation; Richard Dawkins first mentioned them in his 1976 book, *The Selfish Gene*. Memes can be parodies of popular clips that are copied by amateurs and flow from one platform (such as a television news story) to another (like YouTube or Twitter): examples include “Gangnam Style”, LOLCats and “Leave Britney Alone”. Memes change as they spread over time and across the Internet and reflect social attitudes and form part of the sharing culture of Facebook and YouTube” (n.p.)

Memes have been variously described as ‘internet anaesthetic’ (Shafer, 2012) and ‘banal imagery’ (Moschovi, 2013). They have also increasingly become the subject of serious, academic interest. For example, Bauckhage (2011) examined 150 internet memes, including LOLcats and “I like turtles”, noting the significance of these images within popular culture. Myrick (2015) examines the LOLcat meme or macro in particular and suggests that viewing cats online may improve mood (emotional benefits) but other outcomes such as procrastination, are less beneficial. In her article ‘I has seen image macros’ [sic] Dynel (2016) attends to a ‘canonical’ group of image macros termed ‘advice animals’ such as Grumpy Cat and Courage Wolf (see figure 23 above) and the significance of these memes as visual-verbal jokes. She suggests that her study, “corroborates the claim that new media have induced societal changes and a bias favoring visual communication over verbal communication” (p.660).

In terms of the current Nature 2.0 study, representations of nature at the web-as-technology intersect, as raw and unedited, as photo-shopped hybridity, as comic animals, memes or macros or as something approximating any of these digitally-enabled, human-
centric visions may or indeed may not come to the fore. The point here is that these nature representations exist within the new media environment as they could not and did not exist previously in the mass mediated world of TV and film. Web 2.0 not only enables these new nature framings to be created, generated and uploaded but the all-pervasive nature of this ubiquitous medium means that such arresting, challenging, unsettling and entertaining images of nature are easily and rapidly shared, accessed and viewed by mass numbers of people in ways that were not previously possible. Again, whether young people will be drawn to raw or humorous nature or even techno-nature hybrids, as being representative of nature for them, is not something that has previously been explored.

**Nature conservation online**

The third nature theme to be discussed in this overview of online nature interests has received (and is likely to receive increasing) research attention, is the conservation of nature, in particular the organisations and groups which use the web to actively support initiatives around the world. This topic emerged in the earlier chapter on ‘mass media and nature’, with reference to environmental groups (in particular Greenpeace) and the role that ENGOs play in re-imaging nature as the environment in the media. In the current context attention shifts slightly and is now on those writing about the groups and activities who highlight the potentials (and also unintended consequences) of this interactive, connected digital space which brings like-minded users together to, “share information, collaborate on projects of mutual interest, and create new ways to solve some of our most pressing problems” (Tapscott, 2008, p. 40). In their study, Royan and Metherall (2013) focus on how media can be used in the service of conservation education and they articulate the benefits of the new media environment:

> The geographical and temporal accessibility of the internet facilitates the dissemination of wildlife imagery to a worldwide audience. The internet offers a dynamic and interactive experience to users, thereby engaging audiences more effectively than passive forms of media… the internet is now a crucial tool in communicating knowledge on the Earth’s biodiversity and reconnecting people with the natural world (p.79)

The authors’ address the many benefits of social media which they suggest include: reach, ideas and images are easily conveyed to more people more quickly; conservation focus, opening up new opportunities for sharing and reinforcing interests; rapid distribution, through multiple channels, reaching people across boundaries; participation, dialogue is
enabled, encouraging public engagement and ‘activism rather than voyeurism’; and information, which can now be easily discovered and rapidly shared. Many of these elements appear in other studies which examine growing conservation interests around the world and the potentials of online user engagement towards enhanced conservation outcomes. For example, Grano (2016) examines the role of social media in environmental protest in China, while Yang (2007) and also Mol (2010) examine the internet and Chinese ENGOs such as Green-web and Greener Beijing, which “publicize environmental information, set up discussion groups, mobilise volunteers, organize grassroots organizations…” (Mol, 2010, p. 390). Similarly, Takahashi (2015) explores the benefits and challenges of collaborative communication around the Intercambio Climático (climate change) website in Latin America.

Others studies address specific conservation initiatives which may highlight more local concerns. For example, science communicator, Simon Morton (2011), reported on a citizen science initiative which used public sightings of the shining cuckoo (an invasive species in New Zealand) to discover changes in the bird’s nesting behaviours. As one of the project participants exclaimed, this is the “first time this has been observed in New Zealand, so we've got some real science happening here...” Another crowdsourcing initiative in the UK—also seeking the support of the wider general public (who may or may not have an interest in the natural world)—sought to rename an endangered species in the interests of its long-term survival:

...however dark its new moniker, the future may be bright for the endangered Queen's executioner beetle. With its profile raised as a result of the competition, the hope is that the public will form a 'cultural connection' with the bug, caring more about its future. And with care, comes conservation, so Mother Nature's axe may not be allowed to fall on the 'Megapenthes lugens' just yet (BBC, 2010).

Once again, whether participants in the current Nature 2.0 study will respond to conservation initiatives, such as those outlined above or to other online representations which reflect nature within a conservation context, as nature and new media commentators are now beginning to do, remains to be seen.

---

72 These birds normally lay their eggs in the nests of grey warblers in New Zealand but one was spotted targeting a starling’s nest (the location of the nest was also mapped on Google Maps).
The following and final section on ‘online nature interests’ touches on some of the negative consequences which can result within the new media environment for both nature and people. While these outcomes may be unintended or merely assumed, other consequences (some argue) are merely reflections of, or the result of, existing behaviours and expectations which have become normalised in the Global North in terms of what ‘nature is’ and how this should be conserved.

5.4.2 Online nature concerns

For others writing about conservation in this online space the benefits may be outweighed by other, negative consequences for the natural world. For example, webcams can be used to unobtrusively observe “nesting birds or savannah waterholes” allowing the viewer an experience which is “the next best thing to being there” (Guy, 2011). On the other hand, as Watson (2011) argues in his paper on the use of digital technologies and field birding, there is also the potential for unintended and unwanted consequences when the web is used to share sightings of birds:

> While the adoption of new immaterial technologies promises to improve the ease with which birding is practiced, their use leads to new ethical considerations. Using the Internet to share bird sightings, for example, lowers the barrier of entry to access this information. Therefore, bird sightings proliferate, often with little thought to the consequences of birders visiting the reported birds’ location (p.789)

Others view the potential for negative conservation outcomes somewhat differently. Conservationist, Bram Büscher (2013) suggests that conservation organisations encourage the online user to help conserve nature, but it is a particular, idealised, Western mediagenic nature which is to be conserved. The interests of Büscher and other writers in this more challenging area of conservation engagement and practice (Büscher, Dressler, & Fletcher, 2014; Büscher & Igoe, 2013) extend beyond the philanthropic aspect of user engagement and the perceived nature benefits which can ensue and instead questions which ‘nature’ is being conserved (and commodified) and for whom.

Attending to the negative implications of screen-mediated representations of nature is, of course, nothing new in human-nature studies; those with an interest in nature as mediated through earlier, analogue media, have long argued how such experiences have the potential to distance humans from the natural world. So while it is argued television can
enhance understanding (Eagles & Demare, 1999; Horak, 2006), motivate travel to connect with nature (T. E. Adams, 2005; Mitman, 1999) and even make audiences more sympathetic towards the natural world (Bousé, 2000; Lee, 2011), television also has a darker side. Screen representations abstract and decontextualize nature (Ivakhiv, 2008; Lindahl Elliot, 2008c) and abstraction displaces emotions (Kellert, 2002; Pyle, 1993). TV can also sensationalise and distort reality, even falsely reassure about the natural world, as was discussed in the earlier overview of blue chip nature documentaries and wildlife films. Ultimately and worst of all, perhaps, media-ted nature wraps the viewer in “a cloak of abstractions” (Everden, 1992 cited in R. Johnson, 2009, p. 64), not merely distancing humans from nature but potentially supplanting the need for ‘real nature’ altogether.

Such dystopic visions are also applied within the new media environment, although many of those nature experts making such observations routinely conflate media or fail to distinguish the particular features of the web which engender such negative outcomes; these outcomes are simply and uncritically associated with all screen media. This is most likely (at least in part) the result of both the ‘newness’ of new media and also the absence of nature researchers with a deep understanding of the human-nature connection, working within the new media research space. The interests of nature researchers are more likely to be on getting people outside into nature rather than critically assessing the implications of another, potentially nature-distancing screen technology.

New media increasingly permeate the lives of ordinary people everywhere, often seamlessly integrated into their daily routines and social activities. The following and final section in this chapter examines young people as the focus of interest within the digital landscape. Young people, in particular those aged between 18 and 20, are also central within this Nature 2.0 study. As both early adopters and high users of digital media young people, perhaps more than any other group are at the forefront—the bleeding/leading edge–of the changes brought about by new media technologies.

5.5 Young people and the new media environment

Young people are popular targets for researchers. Sitting in classrooms and lecture theatres their opinions, attitudes and behaviours are readily available and can be “easy to ‘capture’ in experiments and surveys” (Ruddock, 2013, p. 27). Furthermore, children and
young people are of particular interest to those studying the effects of digital media as these groups typically include the innovators and those “in the vanguard of new media adoption” (Livingstone, 2010, p. 362). More than other population groups, children and young adults, have adapted to the new media environment and as the evidence suggests their uptake and engagement with social media is significant (J. Ahn, 2011; Subrahmanyan & Greenfield, 2008). As a result, young people are of key interest to researchers working to understand the online world; how the new media environment is “changing the ways in which we work and play, influencing culture, media, and social rituals, and maybe even changing who we are” (Weber & Dixon, 2007, p. 1).

**Research interests**

The MacArthur Foundation has undertaken numerous projects on young people and digital media and produced a series of publications exploring such topics as civic life, games and learning, credibility, identity, race, ethnicity and innovation (Xenos, 2009, pp. 758-759). While topics can be wide-ranging, Subrahmanyan and Greenfield (2008) suggest that research on young people and digital media typically focuses on the “key developmental tasks of adolescence…identity, autonomy, intimacy and sexuality” (p.124); namely those tasks associated with bodily changes, gender and class. Baym (2010) similarly suggests that the three major themes which characterise new media research more generally are “identity, relationships and community” (p.385) and this observation also typifies research where the focus is younger people (Buckingham, 2008; Dretzin & Maggio, 2008; A. Thomas, 2007). And just as new media commentators incline towards the utopian-dystopic polemics for the general population, so too do those writing about younger age groups and new media incline towards framings of the web as both a mechanism of empowerment (around identity-making and relationship-building) while also, at times, a danger to the most vulnerable members of society, including such threats as cyber-bulling and the spectre of sexual predators (Dretzin & Maggio, 2008).

### 5.5.1 Digital generation

Chances are you know a person between the ages of 11 and 30. You've seen them doing five things at once: texting friends, downloading music, uploading videos, watching a movie on a two-inch screen, and doing who-knows-what on Facebook or MySpace. They're the first generation to have literally grown up digital - and they're part of a global cultural phenomenon that's here to stay (Tapscott, 2008 book promotion).
Young people are routinely defined in terms of their relationship with and experiences of new media technologies; they are routinely described as the ‘digital generation’ (Battisti, 2016). Whether there is any validity in such a label, i.e. that as a result of growing up in a digital world, young people have “a different orientation to the world, a different set of dispositions or characteristics, or in Bourdieu’s terms, a different habitus” (Buckingham & Willett, 2006, p. 6) is, and will continue to be, debated. The reality, however, is that researchers and media commentators more generally find it useful to define young people in terms of their age; to distinguish them from the rest of the population in order to better understand their (apparently differing) characteristics, influences and experiences. As most students in the Nature 2.0 study are likely to be aged between 18 and 20 years when surveyed (born between 1993 and 1995) it is helpful to identify the labels which have been frequently assigned to this age group and also to highlight some of the key arguments (and assumptions) which are at times hotly debated about people who stand on the threshold of adulthood. Young people, particularly those aged between 18 and 20 have been (inconsistently) labelled within four broad categories:

(a) **Generation Y or Gen Y**: Those born after 1979 up until the mid-2000s (although this close-off date is contested) are routinely identified as Gen Y. This group is described by Montgomery and Gottlieb-Robles (2006) as the first generation to “grow up in a world saturated with networks of information, digital devices, and the promise of perpetual connectivity (p.131).” Preece and Shneiderman (2009) describes this group as “technically-savvy people under the age of 30” (p.14).

(b) **Millennials**: This group includes those born between 1982 and 2004. In their book *Millennials Rising* digital optimists, Howe and Strauss (2000) argue against the earlier Gen Y label which they describe as being no longer adequate for describing this new powerful generation; a generation which they suggest will “recast the image of youth from downbeat and alienated to upbeat and engaged” (p.4).

(c) **Digital natives**: The idea of the digital native was developed by educational software designer and founder of *Games2Train.c* Marc Prensky. Prensky (2001) noted that those born after 1980 have been surrounded by digital technology in a way that previous generations were not. “Our students today are all “native speakers” of the digital language of computers, video games and the Internet” (p.1). He characterises the digital native (in
contrast to the older digital ‘immigrant’) as wanting quick, random information fast, expecting to multitask, preferring play, and someone who thrives on rewards and instant gratification.\textsuperscript{73} This concept has now been widely debunked by digital researchers.

(d) \textit{Net-generation, Net-gen or N-geners} (aka the Echo Generation): Management consultant and entrepreneur, Don Tapscott coined the term ‘Net-generation’ to describe those born between 1977 and 1997 and who were the focus of the Net Generation Project.\textsuperscript{74} The findings from this large study of 11,000 young people were published in the hugely successful \textit{Growing up Digital} (1998) followed a decade later by the equally popular \textit{Grown up Digital} (2008). In the books Tapcott defines Net-geners in terms of their (largely) utopian attributes and also in opposition to the norms and characteristics associated with the TV generation or the Boomers (those born, between 1946 and 1964):

As the first global generation ever, the Net Geners are smarter, quicker, and more tolerant of diversity than their predecessors. They care strongly about justice and the problems faced by their society and are typically engaged in some kind of civic activity at school, at work, or in their communities (Tapscott, 2008, p. 6).

Tapscott characterises Net-geners as wanting freedom to innovate, customise and personalise technology. They also, he suggests, care about corporate integrity, openness and collaboration and, again like Prensky, he claims that young people prioritise entertainment, not just in play but also in education and at work (Tapscott, 2008). Tapcott’s only concern for Net-geners appears to be their lack of understanding around privacy, not in terms of surveillance issues, but their inhibitions in sharing inappropriate images that may come back to haunt them in later life. Tapscott does, however, recognise and articulate (before subsequently dismissing) further concerns held by other commentators. These critics, he notes, believe Net-geners to be dumber than earlier generations (N. Carr, 2010; Hassan, 2008); they are unhealthily addicted to technology and are ‘coddled and adrift’. Net geners, it is suggested, are narcissistic bullies, with no shame, in short they “don’t give a damn” (Tapscott, 2008, p. 6).

Like Prensky (2001) and also Howe and Strauss (2000) Tapscott is a digital optimist. But his assertions around Net-geners’ abilities to filter information appropriately, manage

\textsuperscript{73} Prensky later moved away from the idea of a digital cohort, finding this term less than useful.

\textsuperscript{74} Most students in the Nature 2.0 study will be at the tail end of Tapscott’s N-Generation.
multiple screens and think smarter than earlier generations are all highly contestable. More than this, Tapscott’s unflagging optimism around Net-geners’ abilities and dispositions enabled primarily by technology situates him firmly within the technological determinist camp. As Buckingham (2006) argues:

According to Tapscott, the Boomers [1946-64] are the “TV generation,” who are defined by their relationship with that medium, just as children of the Boom Echo [1977-1997] are the net generation... Tapscott’s oppositions between these technologies are stark and absolute. Television is a passive medium, whereas the Net is active; TV “dumbs down” its users, whereas the Net raises their intelligence; TV broadcasts a singular view of the world, whereas the Net is democratic and interactive; TV isolates, whereas the Net builds communities; and so on... Like the technology they now control, the values of the TV generation are increasingly conservative, hierarchical, inflexible and centralized. By contrast, the N-Geners are “hungry for expression, discovery and their own self-development”: They are savvy, self-reliant, analytical, articulate, creative, inquisitive, accepting of diversity, and socially conscious (p.6).

The conceptual appeal and dangers of labelling

Gen Y, Millennials, Digital Natives or N-Geners... differentiating people by age makes it possible to put boundaries around the research, enabling research clarity and the potential to compare findings between different studies, where groups have been similarly defined. The emphasis on age or generation as a way to understanding human characteristics, attitudes and behaviours can also be problematic, as Shirky (2010) argues:

One of the weakest notions in the entire pop culture canon is that of innate generational difference, the idea that today’s thirty-somethings are members of a class of people called Generation X while twentysomethings are part of Generation Y, and that both differ innately from each other and from the baby boomers (p.121).

As Shirky further argues, prioritising generational difference creates the potential to ignore, deny or simply miss the significance of other factors most notably that of context. In social psychology this is known as the ‘fundamental attribution error; 75 where human behaviour is attributed to innate characteristics rather than other internal or external factors or influences. The fundamental attribution error can be a real danger when studying any particular population group and something which was considered within the context of the current study. Are those who suggest that young people (as digital natives

75 A concept attributed to Stanford Professor of Humanities and Sciences, Lee D Ross (1967).
or N-geners) are disconnected from nature making a fundamental attribution error about a group of disparate individuals (responding to a range of motivators and drivers) who just happen to be born around the same time? Will the respondents-as-millennials capitalise on the potentials brought about by the new media environment and if they do does this then imply all millennials’ willingness and ability to be similarly predisposed and empowered? Or might it simply be that anyone would respond in the ways described (including, but beyond this age group) should the question be posed?

In terms of the current study and the (mainly) 18 to 20-year-old students who responded to the online survey, age is one of a number of factors which must be understood; age neither implies certain attributes or behaviours nor is this factor more significant than other factors, such as research context or gender or ethnicity. Within the current study, age is a useful rather than a defining filter within the wider research.

### 5.5.2 Young adults are thoroughly online

As suggested in the previous section, young people are significant users of new media in general and social media in particular. The degree of uptake and engagement with these new tools and services has been the subject of countless studies and reports which variously compare and contrast the socio-demographic elements of age, gender, ethnicity and socio-economic status with ever-changing behaviours around media, including uptake and use of different media technologies. Even more significantly, as early as the 1990s, it was being argued that young people were not simply using the web but that they were thoroughly embedded within the new media environment. As suggested in the trade publication *Youth Markets* (ALERT, 1999) young people have not simply, “adopted online technology… [they] have internalized it” (cited in Montgomery & Gottlieb-Robles, 2006, p. 132). The reasons for this wholehearted embracing of or dependency on new media technologies has been widely discussed in academic research and two themes typically dominate; young people have no choice but to be online and young people are at home online; this is simply a new space in which to connect with like-minded others.

**No choice: peer pressure and the ‘network effect’**

Researchers present various arguments around the so-called pressure to be online. Some point to the development of insidious online addiction often associated with social
networking sites or online role-playing games, such as World of Warcraft and other virtual worlds. In his study which aims to better understand young people’s ‘emphatic embrace’ of new media technologies, Watkins (2009) documents the voices of young people who describe their experiences of what they perceive to be addictions to online web applications (the quotation is lengthy but highly revealing):

> When we asked young twenty-somethings to describe life in the digital age, the word *addiction* came up frequently. Users of social-network sites like Facebook and MySpace consistently told us that these digital destinations are impossible to resist. “Oh my God, I check Facebook at least ten times a day,” said Debra, a nineteen-year-old psychology major, “I have to admit that even when I’m in class, I have Facebook open. It is totally addicting.” Similarly, in our conversations with users of MMORPGs, the spectre of addiction is never too far away. Many users of virtual worlds believe they have either experienced or witnessed first-hand how the intense compulsion to play games can lead to serious personal disruptions. “I definitely feel like I was addicted to World of Warcraft,” James said. “When I first started playing the game, it was so fun and exciting that I basically gave up everything and everyone around me (p.133).

This quotation illustrates how irresistible SNS and social gaming sites can be for young people. It also highlights what may become a problem for an increasing number of people (not just for the young), particularly as these interactive sites become ever-more realistic and alluring. Other researchers point to a more direct pressure that has been identified by young people as influencing their online behaviour. Peer-pressure, like addiction, can drive certain behaviours and for many the fear of becoming socially isolated can become the primary motivation for being online (Watkins, 2009); to be offline is to be alone or even worse out of the loop. This point is again articulated by young people themselves:

> A few years ago, one student who sat in the back of the class and rarely spoke a word the entire semester, perked up when I asked who had a *Facebook* page. He bluntly pronounced, “If you don’t have a *Facebook* page, you’re a nobody.” The rest of the class agreed. There wasn’t a single student in the room who was willing to report that they weren’t on *Facebook* (Sparks, 2012, p. 259).

In his book on *The Information Society*, media effects theorist, Robert Hassan (2008) views this pressure to participate online as being an intrinsic aspect of the ’need for speed’ in the digital world. Members of the new information society are compelled to participate due to what Hassan describes as ‘the network effect’:

> The network effect…presents us with a choice: which is either to get connected and speed up your mode of communication - or be left behind. To ignore the
network effect is to miss out on what might be important information, to lose out on opportunities or to be ignorant of changes that can affect us in our everyday lives. In the information society, to be in the position of unconnectedness is to run the risk of sinking rapidly from the social, economic and cultural radar (p. 9).

Simply at home in a new social space

Young people may indeed feel compelled to participate online; to upload videos, to blog, to post comments on the most popular social networking sites. There are also, however, more mundane reasons for their enthusiasm for being online. Palfrey (2008) suggests that the technology design itself encourages media uptake, as young people can now easily “rework media, using off-the-shelf computer programs, in ways that would have seemed impossible a few short decades ago” (p.6). Others, such as Tapscott (2008) and Olsson (2006) build on this technological ease and suggest that young people’s use of media technologies has been naturalised in the same way as any new generation accommodates the strangeness of the world into which it emerges. As Tapscott (2008) suggests, to the net-generation “digital technology is no more intimidating than a VCR or a toaster…” (p.2).

The evidence also suggests that for many young people, media technology itself is “a relatively marginal concern” (Buckingham, 2006, p. 11); most people “are simply concerned about what they can use [this technology] for” (ibid.). And as Watkin (2009) discovered in his study on young people and new media, digital does not equate to tools and technology, digital is simply a ‘way of life’:

…I was fully aware that teens and young twenty-somethings were shifting much of their leisure activities online. But as we began to analyse the data from the surveys we collected and transcribe the stories young people shared with us about their technology-rich lives, it was vividly clear that digital is more than the tools and technology they use—it is, quite frankly, a way of life (p.xiv).

In the end, why so many young people live so much of their lives online is probably a combination of all the factors discussed in this section (and more). Web technologies are undeniably easier to use than they were, even ten years ago. Being online can be empowering; it can be a place to share ideas and connect with like-minded people. The web can also be a place to satisfy interests (however appropriate); even to indulge in personal fantasies. It can be a place to have fun, to be entertained. People may also feel pressured or bullied or addicted online or they may discover the web as a place to learn,
about themselves and about the world around them. In the end, the web may simply be a place to do what people have always done, only now they are doing these things online.

Within this Nature 2.0 study, the significance of living in, rather than with the media (Courtois & D'heer, 2012, p. 153) comes to the fore. Increasingly, young people in particular are likely to become ever-more deeply involved in new media technologies (regardless of their location in time and space), consuming but importantly also creating and sharing representations of the world around them and this includes representations of the natural world. Those who feel compelled to post messages, to blog, to ‘check Facebook at least 10 times a day’ are within easy and constant reach of the natures which are circulating online (including those that they and their friends may have created) in a way they may or may not be close to real nature outside. Like other media commentators, the current Nature 2.0 study attends to the worldviews that are routinely encountered and shared within this new media environment. Unlike the majority of media commentators however—whose interests are in economic, political and cultural effects and transformations, i.e. the social world—the current interest is in the worldviews as conceptualisations or ideas about the natural world.

The third part of this study (Part III) now moves beyond examination of the research literature associated with nature as representation, conceptualisations of nature and the web environment (as outlined in this and the previous two chapters) and attends to the representation and analysis of the data gathered through the Nature 2.0 survey (online questionnaire and focus groups) and the findings and recommendations from this empirical component of the wider Nature 2.0 study.
CHAPTER 6

SURVEY ANALYSIS AND STUDENT CHARACTERISTICS

6.1 Introduction

In PART III the Nature 2.0 study now moves beyond a critical review of the research literature in the three key areas of nature as representation, conceptualisations of nature and the new media environment (which make up PART II) and attends to the survey component of this study, as outlined in PART I. The current chapter addresses the overarching approach used to analyse the upcoming survey information and presents an insight into the main characteristics of the students who responded to the online questionnaire. Chapter six is divided into two main sections:

- **6.2 Nature 2.0 survey: overarching approach**—outlining the analytical approach (articulating the different datasets which will be combined) and the survey phases (the data are presented and analysed in three chapters);
- **6.3 Nature 2.0 survey: student characteristics**—presenting and analysing the data associated with the 504 students who completed the online questionnaire.

Three further points are highlighted in this opening section of PART III. Firstly, section 6.3, which attends to the student characteristics and also the following two chapters, which present and analyse the student responses, address the second part of the main research aim, which is, ‘to explore young adults’ conceptualisations of nature in the interactive, online world’. In combination, these three chapters also empirically address key research question four which asks:

RQ4: Which representations on social media typify ‘nature’ for young adults; does Web 2.0 enable particular or changing ideas about the natural world?

It is also noted that the analysis in all three chapters is primarily at the macro scale or whole population level. Where sub-populations are examined this is limited to gender,
ethnicity and domicile. Where individual voices appear, either from the focus groups or the questionnaire (used to highlight or illustrate salient points) these will be anonymised.

Finally, while there are discrete analytical phases which draw on particular datasets (in the first instance) relevant qualitative and quantitative data will appear throughout the survey analysis, in all three chapters. Where different datasets are used in combination (a feature of mixed methodological research) signposts will be used to guide the reader. For example, when focus group comments are included alongside particular nature website content to aid understanding about the nature representations which were chosen.

6.2 Nature 2.0 survey: analytical approach

6.2.1 Four datasets, three study components

Four dataset types were captured via the online questionnaire and the three focus groups. In combination, these datasets make it possible to build a picture of: (A) who the students are; (B) what the students choose and: (C and D) what the students say. The data collection techniques, resulting data types and survey components are shown in figure 24:

Figure 24 Four datasets and three study components
A. Who the students are (purple quartile, counts)

All quantifiable multi-choice responses were coded and graphed towards building a picture of the students who completed the online questionnaire. The four categories are:

1. **About you**: giving an insight into the characteristics of the student respondents.
   Four questions relating to gender, age, ethnicity and family home;

2. **You and social media**: towards understanding the students’ use of social media.
   Two questions about access to, and time spent on social media, and a further eight Likert scale questions concerning student activities on social media (e.g. do you talk with friends or family—weekly, monthly, occasionally or never?);

3. **You, family and nature**: building a picture of the students’ preferred way to experience nature (one question about direct versus computer-mediated contact) and their engagement with nature-related activities, such as tramping and gardening (nine Likert scale questions). One further question addresses family interest in nature (measuring from very interested to have no interest in nature);

4. **Nature and social media**: gaining an insight into the students’ thoughts about and experiences of nature via social media. Two questions about the perceived benefits and dangers of these mediated experiences (including yes/no responses and free-text comments) and four further Likert scale questions which attend to how aware students are of nature online and how actively they engage with online nature content (e.g. looking for information weekly, monthly, occasionally or never).

The characteristics of the student respondents are examined within four profiles:

- Demographic profile: gender, age, ethnicity and family home
- Social media profile: access, activities and time spent on social media
- Nature profile: access, activities, time spent and family interest in nature
- Nature 2.0 profile: awareness of nature on social media, activities associated with nature via social media and time spent
The characteristics of the students who completed the online questionnaire are presented in the upcoming section (6.3, below). This information about the 504 students is then integrated in chapters seven and eight, where the nature website content chosen by these young people is presented and analysed.

B. What the students choose (red quartile, social media sites)

Question seventeen in the online questionnaire asks each student to cut and paste the web address of a social media site which contains a representation of nature which approximates their own ideas about the natural world. Five hundred and four first nature website selections were shared and subsequently themed and analysed. Notably, all nature themes which emerged were derived from the websites chosen by the students.

*Website content:* The content of the 504 websites is of central interest within this survey and the wider Nature 2.0 study. This content provides a snapshot of prevailing nature ideas and ideals online (nature as representation) while simultaneously providing an insight into how young New Zealanders conceptualise nature in the modern, digital world. Screenshots of student-selected nature websites appear in chapter seven, together with the nature themes which emerged from the websites. This content is described and discussed (together with focus group and other online comments) in chapters seven and eight.

*Website container:* The need to also examine the containers of this nature content was not identified in the original study design. This emerged, however, as a result of the ‘social media sites’ which were chosen by the students, many of which could not be classified as social media, i.e. included no user-generated content or any ability to interact with this content. This study component is discussed in chapter eight.

In summary, the student-selected websites provide a bank of online natures which are also indicative or reflective of students’ conceptualisations of nature. This simultaneous, seamless data gathering is a key aspect of this Nature 2.0 survey. Other data gathered through the questionnaire and focus groups (discussed below), contribute to the analysis of this nature content. The resulting themes which emerge are then analysed with

---

76 136 students chose at least two nature websites and, of this group, 77 chose three nature websites (711 websites were selected in total, by 504 students).
reference to the cultural and mass media-ted nature representations, outlined in chapter three, together with lay peoples’ contemporary conceptualisations of nature, identified in recent literature and discussed in chapter four (importantly existing concepts and frameworks will inform but not constrain understanding of any themes which emerge).

The 504 nature websites are presented and analysed in chapters seven and eight. As indicated above, the need to also analyse the websites as containers was not anticipated in the methodology but emerged during preliminary analysis of the websites. The websites-as-containers are analysed in chapter eight.

C. What all students say (turquoise quartile, free-text comments) and D. What selected students say (green quartile, verbatim transcripts)

In the online questionnaire the students were asked questions which prompted free-text responses. The free-text comments were themed and analysed. Themes are:

1. **Nature words**: three words or phrases which the students would and would not associate with nature (these were themed and coded);
2. **Family interest in nature**: students’ comments in support of their families ranked interest in nature, represented on a Likert scale;
3. **Nature website choice**: students’ comments in support of the websites which they selected as being representative of nature for them i.e. ‘this is nature because…’;
4. **Nature via social media**: what might be beneficial or detrimental about nature via social media. The yes/no responses were quantified, while the free-text comments were themed and general observations made;
5. **Other comments**: appearing at the end of the questionnaire, students were encouraged to provide further comments about the survey, social media or nature.

When analysed this data adds depth to understanding the quantitative data captured online. The full questionnaire (including all themes) is shown in Appendix two.

**Three semi-structured focus groups** were also held with 16 self-selected students, all of whom had earlier completed the online questionnaire and intimated their interest in follow-up group discussions. During these sessions the interviewees were encouraged to discuss some of the questions posed online and to reflect further on the responses they
had provided. The focus groups were an opportunity to capture deeper reflections; individual student voices and a range of themes derived from but extending beyond the interests and concerns articulated in the online questionnaire. Anonymised quotations from these taped and transcribed focus groups appear throughout the data analysis (in both the current and forthcoming chapters) in particular where they serve to highlight or illustrate a particular phenomenon, interest or issue. The semi-structured focus group questions and themes are included in Appendix three.

The 504 free-text comments on nature and nature online, together with the 90 (optional) general reflections, add another dimension towards understanding the students’ conceptualisations of nature. Additional observations, made by the 16 students who participated in the three focus groups add further depth to understanding the questionnaire responses, in particular the students’ thoughts about nature and the websites which they chose as being representative of nature for them (a representative selection of the student-selected websites circulated and were discussed during the focus groups).

6.2.2 Three survey phases

The previous section has outlined the four different datasets which were gathered via the questionnaire and the focus groups and also the three survey components which are informed by these datasets, i.e. who the students are, what they say and the representations of nature which the students choose as being indicative of their own ideas about the natural world. This information is presented and analysed in three phases (shown in figure 25, below) in this and also the following two chapters:

1. Presenting the student characteristics: Particular attention will be given to the student demographics (gender, age, ethnicity and family home), together with an overview of student access to, activities and time spent on social media and also preferred access to, and engagement with, nature activities (including family interest in nature). This information is presented in the following section, 6.3, below.

2. Presenting and analysing the nature content of the student-selected websites: The social media and other website content is themed into discrete categories, such that these nature representations/conceptualisations can be analysed. The website presentation and
analysis is informed by other datasets which have been gathered, including the student characteristics, free-text comments shared through the online questionnaire and student observations made during the focus groups. This second phase, presenting and analysing the nature content, appears in chapters seven and eight.

3. Presenting and analysing the nature containers which house the selected content:
As noted earlier, this third phase was not anticipated but was incorporated into the study in response to the nature websites which were chosen; many of these sites could not reasonably be described as social media. To fully appreciate the significance of the nature containers, two additional analytical steps were included which examined the ‘social media-ness’ and ‘authority’ of the websites which were selected and shared. Analysing the nature selections through these prioritisation lenses adds additional layers of complexity and also understanding to the nature ideas which typify both representations of nature online and the students’ conceptualisations of nature. This third phase, presenting and analysing the web containers, appears in chapter eight.

Referencing the student reflections which emerged through the questionnaire and the focus groups throughout this and also the forthcoming chapters, not only enhances understanding of the data presented but also enables deeper understanding of what can be complex and challenging issues. Significantly, once the data are presented, combined and analysed, it will be possible to respond to the second part of the research aim, i.e. ‘to explore young adults’ conceptualisations of nature in the interactive, online world.’
Analysing the data in this way also makes it possible to empirically address research question four which asks:

RQ4: which representations on social media typify ‘nature’ for young adults; does Web 2.0 enable particular or changing ideas about the natural world?

As stated earlier, the analysis in both this and the upcoming chapters, will focus primarily at the macro scale, attending to whole study population findings and to a lesser extent to the findings relating to particular sub-groups. Where individuals do appear, these are as anonymised voices used to highlight, illustrate and generally add depth, colour and understanding to the issues discussed. Importantly it is the research aim and research question four which drive the research interest in the upcoming three chapters. Attention in the current chapter now turns to assessing the characteristics of the 504 students who responded to the Nature 2.0 survey.

6.3 Nature 2.0 survey: student characteristics

Chapter two of this wider study provided overviews of both the location of this Nature 2.0 survey activity\(^\text{77}\) (in Dunedin, New Zealand) and the university student population, from which the online questionnaire respondents would be drawn. This earlier methodological chapter also outlined the purposive sampling approach which was to be used to identify a representative survey population from this wider student body. As discussed, this approach included engaging the support of four lecturers-as-gatekeepers (one from each of the four University Divisions), who would then provide access to their first year students. As described, these gatekeepers have access to disproportionate numbers of students, however, the diversity of students who responded to and completed the online questionnaire was ‘good enough’ and ‘fit’ for the purposes of the current Nature 2.0 survey (May, 2011, p. 100).

Student survey respondents

The lecturers-as-gatekeepers generously provided access to students studying in one of four 100-level papers. In total, the questionnaire was presented to students in nine classes:

\(^{77}\) The ‘online questionnaire’ and the ‘Nature 2.0 questionnaire’ are used interchangeably. Information gathered in the focus groups enhances this much larger, primary corpus of data. The ‘Nature 2.0 survey’ (or simply ‘the survey’) incorporates information captured via both data gathering techniques.
The questionnaire was then made available over a period of two weeks to students enrolled in each of these four papers through Blackboard, the University’s online learning management system. Five hundred and sixty-nine completed, written questionnaires were returned, representing a preliminary response rate of 21.4%. While this response rate may appear low, it is in keeping with the expectations and indications from research into online surveys (Crawford, Couper, & Lamias, 2001; Yetter & Capaccioli, 2010). More importantly, the survey delivered a study sample which is adequate (Nulty, 2008) for the challenge ahead, i.e. to explore young adults’ ideas about nature, as realised on Web 2.0.

Closer inspection of the 569 responses revealed that 65 of these were incomplete as the students had failed to include at least one valid nature website (many other responses included two or even three websites). As a result, 65 responses were subsequently rejected, including:

- Those which did not include at least one website - 60 students
- Those which included pornography - one student pointed to three such websites
- Those which included comments opposing the inclusion of a nature website—four students refused to include a URL and two included reasons why they would not do so. While these observations cannot be combined with the valid questionnaire responses, they remain noteworthy.

The two students who completed the written component of the questionnaire but refused to include a link to a nature URL inserted the single words ‘no’ [9g] and ‘sorry’ [400c], while the other two students justified their refusal to include a link to a nature website:

- ‘really? Nature on the web is not nature. You can look at pictures of cars; talk about driving cars; and ride as a passenger in a car; but that’s not’ [32g]
• I WILL NOT TALK TO THAT ALIEN. I would rather he discover it for himself…

These refusals to include a nature website in the questionnaire point to a difficulty with associating the idea of nature with social media, a theme which is echoed in a number of the responses which did include links to one or more websites. In total, 504 students completed the questionnaire, including pointing to one or more valid nature website.

### 6.3.1 Student demographics

The students who completed the online questionnaire were aged between 16 and 20 years. As discussed in chapter five, these young people (born between 1993 and 1997) are the first to grow up with—or at least had the potential to grow up with—social media as an unexceptional part of their everyday lives. Of the 504 questionnaire responses received from students within this age bracket, most were from students aged 18-20 years and the majority of all respondents were female. As anticipated, the majority of the students who responded are studying within the Sciences or Health Sciences Divisions (see figure 26).

![Figure 26 Students by gender & age (bar) and study domain (pie)](image)

**Family home and ethnicity**

As is the case in other countries in the Global North, New Zealand’s population is largely urban-based. This is reflected in the questionnaire responses where less than 15% of New Zealand (NZ) students indicated their families lived in rural locations. Twelve percent of the students are from overseas and these students’ families are also largely urban-based;

---

78 This student revisited their personal concerns and their final comments suggested that their strong Christian beliefs (rather than indifference) meant they could not complete the online questionnaire.

79 Any responses from older students were discarded prior to analysing the completed questionnaires.
more than three quarters of the students indicated they are from urban areas. Only 13% of students identified their family home as Dunedin, either suburb or satellite (figure 27).

![Figure 27 Family home](image)

The majority of students also identified as NZ European, i.e. 69% are of European descent and resident in New Zealand/Aotearoa. In addition, most of these students come from urban centres other than Dunedin. Figures 28 and 29 (below) combine information about the students’ family homes with their self-identified ethnicities.

![Figure 28 Family home and ethnicity](image)

Removing the majority NZ European sub-population from this table makes it easier to view the number and make-up of the other groups who completed the questionnaire.
Figure 29 draws attention to the second and third largest respondent groups (orange and green bars), i.e. NZ Asian (49 students) and non-New Zealand Asian (43 students). Both groups are predominately urban-based either in New Zealand (largely in centres outside Dunedin) or overseas. Two further non-New Zealand groups are also represented, i.e. European (21 students; purple bar) and other (13 students from Africa, America, Australia, the Middle East and Eurafasia; blue bar). Other NZ/Polynesian groups include New Zealander (five students), Pasifika (nine students) and Māori (17 students).

The number of NZ European and Asian student responses fairly represent these groups, as they appear in the national and local University populations (see table five).\(^80\) Fewer questionnaire responses were returned by Māori and Pasifika students than was anticipated, hence these populations are somewhat under-represented. In contrast, more ‘other’ non-New Zealand groups responded to the questionnaire than expected, potentially adding further cultural diversity to the interests and responses shared.

Table 5 University student versus student respondent ethnicity

<table>
<thead>
<tr>
<th>Ethnicity: 2013</th>
<th>% Otago students</th>
<th>% Survey students</th>
</tr>
</thead>
<tbody>
<tr>
<td>European/ Pākehā</td>
<td>74.3%</td>
<td>69%</td>
</tr>
<tr>
<td>Māori</td>
<td>8.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Asian</td>
<td>18.6%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Pacifika</td>
<td>3.2%</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown/other</td>
<td>3.3%</td>
<td>7.5%(^{81})</td>
</tr>
</tbody>
</table>

\(^{80}\) Students may self-identify with more than one ethnic group

\(^{81}\) Includes non-NZ students (other than Asian) and ‘New Zealanders’ (unspecified)
Dunedin is a small city by world standards and its location in the deep south of New Zealand is remote. However, the city’s University has a reputation for excellence in research and teaching, both nationally and to some extent internationally and students are attracted from other New Zealand centres and also from overseas. As a result, the student survey population includes a reasonable cross-section of young people from different parts of the country, including urban and rural areas and from other parts of the world.

6.3.2 Students and social media

This section presents a picture of: (a) how the 504 students routinely access social media; (b) how much time they typically spend on social media; and (c) what the students are doing and not doing on social media.

Connecting to social media

Students were asked how they usually access social media and they were able to select more than one device. As shown in figure 30, many indicated that they access social media via multiple devices with half of the students preferring a combination of laptop and mobile and 15% opting for a combination of all three devices. Twenty-six percent of students indicated that they access social media via laptop only.

In light of the meteoric rise of hand-held computer tablets and smartphones in recent years–mobile usage surpassed that of PCs in New Zealand in September 2014 (M. Wilson & Spinks, 2014)\(^{82}\)–the above statistics may appear surprising. It must be remembered, however, that this survey was carried out in mid-2013, just prior to the ‘explosion’ and

---

\(^{82}\) The balance tipped slightly earlier on the global stage, in January that year (Internet Society, 2014).
mass uptake of mobile devices. It is expected that for young people in 2016 the figure for mobile use will be considerably higher; see, for example the Pew Internet report on increased internet use (Lenhart, 2015) which notes that “much of this frenzy of access is facilitated by mobile phones - particularly smartphones…” (para 3).

The other noteworthy statistic is the ongoing dependence on laptops. This can, at least in part, be explained by the study context; students must write essays, fulfil assignments and undertake other academic activities which are more suited to the larger screen. For young adults outside higher education, laptop (and also desktop) access to social media is likely to be a less favoured option than using more portable (and often cheaper) smartphones and other mobile devices.

**Time on social media and preferred activities**

Just over half the students indicated that they use social media for one to two hours a day, while almost a third use social media for three hours or longer, and a further 41 students are connected all day (making it difficult to estimate their daily usage pattern). Only one student does not spend time on social media (figure 31).  

![Figure 31 Time spent on social media](image)

83 Five of the six ‘don’t spend time on social media’ responses were subsequently converted to the lowest connection option (<1hr/day) as these students later demonstrated that they were active on social media.
frequent activity reported was talking with friends and/or family—87% of students did this at least once a week. Other favoured activities (done at least at least once a week) included listening to and sharing music (300 students) and posting comments (282 students). The least popular activity undertaken on social media was work; 86% of students never do work, either paid or voluntary, on social media.

![Activities on social media](image)

**YouTube Generation**

Students’ engagement with two activities are worthy of further comment, i.e. playing games and making/sharing videos on social media. For both these activities, reported engagement appears to be low. Almost 50% of students claim never to have played computer games on social media and a further 28% have done so only occasionally (i.e. less than once a month). With regard to making/sharing videos on social media the statistics indicate even less engagement; 63% of students never make or share their videos on social media (such as YouTube) and 26% of students only do so occasionally.

Lack of engagement with online games and the creation and sharing of videos may, once again, be a reflection of timing; this Nature 2.0 survey was carried out prior to the mass uptake of mobile devices with their free game apps, forward-facing cameras and ‘selfie’ mania. Lack of engagement with computer games may also be attributable to a gender bias. Almost 70% of questionnaire respondents were female and only 16.5% of these young women indicated that they play computer games, either weekly or monthly,

---

84 Students may use other media, e.g. Xbox to play digital games; this was beyond the survey scope.
compared with 40% of the (smaller cohort of) young male students. This gender bias does not appear to be a factor when it comes to making/sharing videos however; just over 10% of male and female students do this at least monthly.

The level of engagement on social media with the various activities suggested—or rather the lack of engagement with activities beyond talking or sharing music—adds weight to the scepticism around the so-called digital or net generation; a concept which implies that those born in the last 20 or so years have an inherent understanding of the internet and are particularly adept within this environment (as discussed in chapter five). The current results suggest a preference for doing what web users of all ages prefer, namely communicating with friends and family and, to a lesser extent, listening to music and posting comments. Almost two thirds of students never make or share videos on social media, so much for the oft-cited YouTube generation!

6.3.3 Students and nature

This section aims to gather insights into how nature-friendly the students and their families are, by: (a) ranking family interest on a 1-5 scale, together with supporting comments; (b) exploring any sub-population differences in nature interest; and (c) taking a snapshot of students’ engagement with selected nature-related activities, such as talking about nature and watching nature programmes on TV.

Family interest in nature

Students were asked to rate their family’s interest in nature (using a 5-point scale) and to justify this rating, i.e. I gave this response because… Almost three quarters of all students indicated that their families were either quite (52%) or very interested (21%) in nature. Twenty-three percent suggested their families were neither interested nor uninterested in nature. Only 4% of students’ families were not very interested or had no interest in nature.
The 504 free-text comments accompanying these nature interest ratings provide further insights into how these differing family interests are realised. A representative selection of the free-text responses, which were shared by the students, is shown in table six.

**Table 6 Family interest in nature: selected comments**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Family interest in nature: selected/indicative quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very</strong></td>
<td>• My family support environmental sustainability; enjoy outdoor activities; and routinely watch nature/animal documentaries [16m]</td>
</tr>
<tr>
<td>[107]</td>
<td>• My parents have a business where they sell vegetable plants; herbs and Certified Organic Produce at the local Farmers market. They also enjoy watching documentaries on plants and nature [31g]</td>
</tr>
<tr>
<td></td>
<td>• my family likes spending time in the Marlborough Sounds; enjoying all the wildlife in the trees and the ocean [265c]</td>
</tr>
<tr>
<td><strong>Quite</strong></td>
<td>• I grew up on a farm and so my family therefore loved being outside with the animals and doing anything that involved being outdoors. We often went to the beach and had picnics in parks etc [13m]</td>
</tr>
<tr>
<td>[261]</td>
<td>• My family enjoy spending time outdoors at weekends and during holidays; and our lifestyle revolves around outdoor activities. [18g]</td>
</tr>
<tr>
<td></td>
<td>• My father has a fully self sufficient home which he grows his own food; and sources his own power from sunlight. [61g]</td>
</tr>
<tr>
<td></td>
<td>• My family in the islands have a plantation as well as having an extra large garden [96e]</td>
</tr>
<tr>
<td></td>
<td>• Certain family members are extremely interested (eg. members of greenpeace) whereas others prefer to not think about it [11c]</td>
</tr>
<tr>
<td></td>
<td>• my family are eco-friendly. [189c]</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>• We go camping and do lots of things outside but they don't go out of their way to experience nature [5g]</td>
</tr>
<tr>
<td>[117]</td>
<td>• They are not exactly nature junkies; but they do enjoy tramping or walking in the bush occasionally and being outside in general. [66e]</td>
</tr>
<tr>
<td></td>
<td>• I am the most interested in nature out of my family. [116c]</td>
</tr>
<tr>
<td><strong>Not very</strong></td>
<td>• Whilst interested in domestic animals; my family do not extend an interest in nature beyond this. For example; nature documentaries are often switched to another channel when on. [2m]</td>
</tr>
<tr>
<td>[17]</td>
<td>• My family are not an outdoors kind of family. [84e]</td>
</tr>
<tr>
<td><strong>No interest</strong></td>
<td>• My family are veryindoorsy. Dog is rarely walked etc [62c]</td>
</tr>
<tr>
<td>[2]</td>
<td>• I love to look at the beauty of nature but don't really care about how it occurs. [495c]</td>
</tr>
</tbody>
</table>

The responses highlight the inherent difficulty in representing differing perceptions of what may be similar activities or experiences. The students’ observations about their families’ interest in and engagement with nature illustrates how the boundaries between differing levels of interest (leading to different nature ratings) can be contested. For example, student [16m’s] family who “…support environmental sustainability; enjoy outdoor activities; and routinely watch nature/animal documentaries” are rated by the student as being very interested in nature, while student [18g’s] family who “…enjoy
spending time outdoors at weekends and during holidays; and [whose] lifestyle revolves around outdoor activities” rates their family as being only quite interested in nature.

The students’ free-text comments justifying their families’ interest (or disinterest) in nature include many similar examples of boundary-breaching, making this exploration into perceived family interest difficult to quantify precisely. Interestingly there appears to be a tendency to underrepresent family interest in nature rather than the reverse. However, what can be discerned from the students’ responses are general trends. What is evident from the combined qualitative and quantitative feedback is that the students’ families are generally and significantly interested and engaged with the natural world.

**Family sub-populations - home and identity**

While the majority of both urban/satellite and rural families are reported to be at least quite interested in nature, there was a slight, but notable difference in the nature friendliness of these groups.\(^85\) As shown in figure 34, 76% of the 421 urban families are reported to be very or quite interested in nature, while the figure for rural families is even higher; 85% of the 80 families living in rural areas are reported to be very or quite interested in nature and none of these families are reported to have little or no interest in nature (unlike 4% of the urban families).\(^86\)

![Figure 34 Urban versus rural family interest in nature](chart.jpg)

The finding that rural families may be more interested in and engaged with nature appears to contradict the findings from other human-nature studies, where urban dwellers are

\(^{85}\) Three responses are excluded as these could not be coded as either urban/satellite or rural.

\(^{86}\) These sub-populations are not equivalent in size.
identified as being more nature friendly. For example, Van Liere and Dunlap’s (1980) review of 21 studies which empirically tests the social bases of environmental concern (a ‘kissing cousin’ of interest in nature) endorses what they term the Residence Hypothesis, i.e. “urban residents are more likely to be environmentally concerned than rural residents” (p.184). This view is supported two years later by Lowe and Pinhey (1982) writing on environmental protection, and much more recently by Pointon (2013), in her study on young people’s ideas of nature (a combination of conceptions of and relationship with nature). Pointon suggests that rural boys (13-14 years) are the least nature friendly (in contrast with rural girls and urban youth of either gender) but further suggests that while locational context may impact on ideas of nature, the situation is not straightforward and further research is needed.

In terms of ethnicity, the most nature-friendly families are those connected to students who identified as Pākehā or NZ European; 78% of these students indicate their families are either quite or very interested in nature. The NZ European group is the largest group (by far) and as such this significant response cannot be directly compared with the other somewhat less nature-friendly family responses which were shared by the much smaller groups. These ‘other’ groups, together with nature interest, are shown in figure 35.

Comparing the same information as percentages (figure 36, below) highlights the differing nature interests of these six ‘other’ groups.

---

87 This does not include the five students who identified as New Zealanders, i.e. ethnicity undetermined
While the number of responses received is considerably lower when NZ European responses are excluded (the largest group is NZ Asian, with 49 students) the findings from this subset are noteworthy. Non-NZ European families appear to have the strongest interest in nature. As Europeans, these families share a similar cultural heritage (in part, as least) as NZ Europeans, which may contribute to these comparable responses. Non-NZ Asian families appear to be more nature-friendly than any of the four other groups, including NZ indigenous Māori and NZ Asian. Pasifika families (from NZ and elsewhere in the Pacific) appear to be the least nature friendly of all the other groups.

In summary, it appears that the majority of students who responded to the online questionnaire are from families who have at least some interest in nature and many come from families with a clear interest in the natural world.

**Student engagement in nature-related activities**

In addition to questions about family interest in nature, students were also asked about their own interests in and engagement with a range of nature-related activities. These include relatively sedentary, characteristically indoor activities, including reading and talking about nature, viewing nature programmes and playing online nature games. They also include more overtly outdoor activities including participation in nature-based sports (such as hunting, fishing, tramping, cycling and horse-riding), engagement in more leisurely pursuits (such as camping or going for a picnic) and working outdoors, either gardening or doing farm work. Students were also asked about their interest in and
engagement with nature groups. The responses to these questions and the frequency of engagement with these activities during the last three years is shown in figure 37.

![Figure 37 Engagement with nature-related activities](image)

What is most striking about these responses is how interested and engaged the majority of students appear to be with regard to many of these nature-related activities. Fifty-five percent of students indicate that over the last three years they have talked about nature with friends or family at least once a month and almost half of these say they have done so weekly. Just 8% of students indicate that they have never talked about nature and, of this group, only four students’ report they never intend to do so.

Many students have also done other sedentarymediated activities such as reading and watching programmes about the natural world. Just 11% of students indicate that they have never read about nature (and don’t intend to do so) and 10% say they have never watched a nature programme (and don’t plan to do so). Few students play online games which include nature elements; 62% have not and do not intend to do so. This statistic is in keeping with the response rate to the earlier question about playing computer games on social media (almost 50% of students said they never play computer games on social media and 28% indicated they only did so occasionally).

The responses to these questions suggest that students are active in the outdoors. Eighty-seven percent have done gardening or farm work at least occasionally, almost 90% have
tramped, cycled or been horse-riding (at least occasionally) and an even higher 94% have occasionally or more frequently camped or picnicked outdoors. While fewer students have been hunting or fishing (36% have never been and don’t intend to) almost two thirds of students have engaged in these activities at least occasionally. Finally, less than half of all students have not and do not intend to help a nature organisation.

The responses to this section of the online questionnaire suggest that the 504 students are in general positively pre-disposed towards the natural world. This is despite the differences in ethnicity, family home and experiences of and interests in a variety of nature-related activities. Urban-based European New Zealanders make up the most numerous sub-population in New Zealand and, as expected, more questionnaire responses were received from this group than any other. While a strong nature-friendly view can be associated with this particular group, a nature-friendly perspective is echoed by the majority of students in all other sub-groups, albeit to varying degrees or extent.

6.3.4 Students, nature and social media

This final section, on the characteristics of the student questionnaire respondents, combines aspects of both previous sections, on social media and nature to produce further insights into how nature experiences may or may not be ‘touched’ by computer technology. Do students prefer to experience nature with or without computer technology (in general) and are students aware of nature on social media (in particular)?

Experiencing nature—with or without computer technology?

One of the more surprising results emerged in response to the question: ‘how do you prefer to experience nature [with or without computer technology]’? Students could choose just one response and there is virtually a 50:50 split in the responses. Forty-eight percent of students indicated that they preferred to experience nature ‘without any technology’ at all while a similar percentage had no preference, checking the option, ‘with or without computer technology, both are fine.’ The 1% of students who selected ‘no technology/qualified’ includes just three students who preferred to experience nature without technology but who also suggested that safety devices (such as GPS) would be

88 Nine unsolicited comments point to the need to be outside, walking or alone in nature.
89 Two of the unsolicited comments suggest the value of relaxing in nature with music, e.g. using an iPod.
an exception. Only 10 students preferred to experience nature ‘with technology’, i.e. via desktop, laptop or mobile device.

Figure 38 Preferred nature contact

Almost half of the students who responded to the online questionnaire indicated that they have no preference at all when it comes to experiencing nature (either with or without computer technology, both are fine). This response is somewhat surprising, particularly in light of the students’ reflections on the potential ‘benefits’ and/or ‘problems’ associated with connecting to nature via social media, as is discussed further below.

Sub-population gender difference

There appears to be a gender influence on this nature experience preference. Figure 39 (left) shows a gender preference with regard to the two major categories only—‘with or without technology, both are fine’ (shown as either on the graph) and ‘without any technology at all’ (shown as no technology on the graph).

Moving from the blue to red columns (in figure 39) it appears that while more female students prefer to experience nature with no technology, the situation is reversed for male students. To quantify this result, 54% of all female students indicate that they prefer to experience nature with no technology, while only 37% of all male students indicate this
to be their preferred way of experiencing nature. It would appear that young men are more comfortable with computer-mediated nature experiences than young women.

**Experiencing nature on social media**

The last component which contributes to a profile of student respondent characteristics moves the nature experience even further from the realm of the physical and now addresses nature as experienced within the interactive, user-generated world of social media. Students were asked four questions: (1) were they aware of nature on social media (e.g. tourism advertising); (2) did they look for information about nature on social media (e.g. on Wikipedia); (3) did they post comments and share stuff about nature (e.g. ‘like’ on Facebook); and/or (4) did they create/share their own nature content (e.g. upload their own videos to YouTube).

![Figure 40 Nature awareness, interests and activities on social media](image)

The responses (shown in figure 40) suggest that the students are generally aware of nature on social media. Only 10% indicate they are unaware of nature on Web 2.0, while a quarter of all students say they are aware of nature on social media on a weekly basis. A significant number of students also look for information about nature on social media; 9% do so at least once a week and a further 68% do so either monthly or occasionally.

Finally, there appears to be less interest in active online engagement with nature such as adding comments about nature, although while 36% never do this, 64% do engage in this
way at least occasionally. Few students actively create or share their own nature content, such as upload videos to YouTube; three quarters of students have never done this.

6.3.5 Student characteristics: reflections and summary

In chapter two, two methodological caveats were discussed. These concern the university context where the survey is deployed (and giving the ‘right’ answer) and the nature-friendly (Dunedin/New Zealand) survey location. These caveats are revisited here, in combination with two additional research considerations, i.e. engagement with social media (in terms of who does what) and social media and nature as ‘odd bedfellows.’

A university context - giving the ‘right’ response

As discussed in the methodology, the online questionnaire was to be made available in a university context where it was possible the students would feel encouraged to give the ‘right responses,’ particularly about nature, i.e. responses which they think their teachers expect, rather than sharing their own thoughts and ideas about the natural world. While this concern is valid and the students may indeed have been predisposed to give nature-friendly answers, a number of the final free-text responses suggest otherwise:

- I don't understand what the intention of this survey is [311c]
- The definition of nature is very indistinct; this survey could have been improved by giving the concept of nature more specificity. [36c]
- Pretty hard to exactly define nature; never really thought[t] about it much [22g]
- I'm not sure what you're trying to get at with this survey or study so when you're finished I would like to see it. [328c]
- … I thought it was quite interesting to think about nature; and found that I was questioning my own understanding of the word nature. [47c]
- Different survey - bit of an unchartered field in my opinion it was good [2c]

These comments about the questionnaire suggest that rather than simply sharing what might be considered to be the ‘right responses’ (what might be expected within a university environment) the students were unclear about the intent of the questionnaire and what was expected of them; some even dispute particular elements, most notably combining nature and social media within the same questionnaire. In the above instances,
at least, it would be difficult for the students to provide what they believe to be the ‘right’
nature-friendly responses when they are uncertain what those responses should look like.

**Dunedin and New Zealand nature-friendly context**

It was further noted in the methodology that Dunedin and New Zealand are perceived as
being nature-friendly locations. While marketing hype and on-the-ground reality are not
necessarily the same thing, the questionnaire findings appear to endorse this wider nature-
friendly perspective. This interest in and engagement with nature is evident in the
previous section which explores students’ family interest in nature and the accompanying
free-text comments illustrate the many ways that New Zealanders engage with the natural
world. One of the students encapsulates the sentiments of many in their final comments:

> We live in New Zealand; there is nature literally almost anywhere you look. I could
take [the alien] to the Botan[ics] at the very least. If I had a car I could take them
to the beach; or Moeraki; or even as far as the Canterbury Plains… [43e]

New Zealanders’ awareness and appreciation of the local natural environment in
particular, also emerged during the focus group (FG) discussions.\(^\text{90}\) These conversations
are reproduced in full, as they address a range of issues which are pertinent to the current
research reflections:

**FG discussion about ‘New Zealand and nature’ in response to a selection of the
student-selected nature websites which were circulating on a PPT slideshow**

Tina: I guess one thing more I was going to say was even just living in New Zealand, I
think because we’re known for having such beautiful landscape makes us kind of more
aware of nature, coz people are always like asking us, you know, or saying, or tourists are
saying, you live in such a beautiful place, ‘specially in Wanaka people are always like,
you live in such a beautiful place–do you ever take it for granted, and I’ll be like, you
know, like yes, it does kind of become a backdrop to your life but I think you constantly
kind of keep going ‘wow, I am lucky to live here’, like, even in Canada, where I lived in
Canada I lived in a big city and I, yeah, maybe they don’t have as much awareness of
nature because I think in New Zealand we’re just more …

---

\(^\text{90}\) Focus group comments have a shaded background for ease of reading. As noted earlier, all names
which appear with the focus group comments are pseudonyms; no students are identifiable.
Facilitator: Waiting for the [website slideshow] loop to come round you’ll notice the two Milford Sound and [other images] … in the middle of the ‘Pure’—that came through quite a lot, or that idea of New Zealand as somehow pure …

Tina: Well I think they really push it…

Munro: It’s expected…

Tina: … they really push the clean, green New Zealand…

Munro: … as far as that goes… New Zealand does put, like more effort into, like preserving nature and, um, promoting nature and that, than a lot of other places might…

A different ‘NZ and nature’ discussion emerged in another FG, in response to the PPTs

Charles: I think New Zealand as a whole kind of does pride itself generally on the fact that it’s not ignorant to the fact that nature exists and our main exports are from nature sort of thing. We’re reliant on the fact as a country as a whole but I mean, not all people are. As you said [turns to another FG participant], you had a friend in Year 9 who didn’t know where milk came from, but I think in general most parents if they found out their children didn’t know that, they’d be ashamed of themselves or something, coz they’ve generally strived to make those sort of things aware.

Kelly: I think we’re all so used to nature being around us that what we see we don’t take as absolute. Coz we’re so used to seeing it every day or, throughout our lives really.

Charles: I think you would have a different representation if you were in a different place because with New Zealand you can go to bush and just walk through it sort of thing and see and experience it, whereas you may not have those opportunities without having to drive or go for a long period of time out of your way to get that sort of thing.

Charles’ point about not having the same opportunities in a different place was a theme which was picked up by two students in the same focus group and also by two other students in the third group. Again, these short dialogues are revealing and highlight a number of salient points.

FG discussion about ‘the Netherlands and nature’ in response to the nature websites which were circulating on the PPT slideshow

Adele: Holland—it’s just concrete.

Alice: We’ve had exchange students from Holland stay with us and like, they just couldn’t believe that there were hills and that sort of thing and it were so close—and like we took
them for a tramp and they couldn’t believe the views and that sort of thing and so their experience was definitely, probably a lot different to my experience.

**FG discussion about ‘Asia and nature’ in response to the nature websites which were circulating on the PPT slideshow**

Anna: Pure, yeah. I think it’s like, clean—not exactly cleanliness, I mean here is clean but like, the air is fresh and it’s like you walk out, it’s refreshing, instead like being smoky or crowded, yeah. I think sound has a lot to play a part in it. Because I’m from Singapore and so it’s very crowded there—there’s a lot of vehicles, and yeah, nature there isn’t really a big thing because you have to keep clearing land to build buildings and stuff so, ah, this is why—irrelevant - but I like New Zealand because it’s like nature around me all the time and this feeling good feeling.

Celia: I definitely agree with that since I come from Beijing, which is—ohhhhhhh—it’s horror … walk down the street and you start coughing, coz it’s so polluted and there’s literally no green anywhere; the sky is never blue, it’s this pale, pale greyish colour because of all pollution—it’s just …

Andrea: I know how in New Zealand, like we have a big focus on like trees and stuff in public areas, and planting all over the place, do you have anything like that?

Celia: No–I think–I think in China it’s much focused on other areas, such as, business, mainly business I think, just coz it’s that kind of city.

Andrea: They don’t have space, where you just kinda have like, trees and stuff there.

Celia: No. I don’t think so. If there is any, it’s quite limited and there’s usually for show.

These student observations suggest that in terms of interest in nature the questionnaire responses reflect a wider New Zealand interest in the local, natural environment. Whether or not the questionnaire responses are also reflective of wider New Zealand engagement with social media is examined briefly below.

**Engagement with social media - who does what?**

The questionnaire responses suggest that the students are well connected to social media; three quarters are on social media at least 1-2 hours a day, a further 8% are connected all day\(^1\) and only 6% are connected for less than an hour a day. While these figures are likely

---

\(^1\) Reasons include having a tab open, even if the student is not looking at social media (223c) and keeping social media open so the student can be messaged by others (327c)
to have changed more recently, with increasing dependence on mobile devices (as discussed in the previous section), how do these statistics compare with those of other groups accessing social media around this time?

**New Zealand social media use: 2013-14**

In mid-2014, Head of Digital Communications with Vodafone NZ, Mike Wilson and Rowan Spinks, NZ Client Partner with Facebook (2014) visited the University of Otago and presented statistics about New Zealanders’ use of social media. This information, together with statistics from *Insights* (Singh, 2014) and the *World Internet Project NZ* (Gibson, Miller, Smith, Bell, & Crothers, 2013) help to situate the social media use statistics gathered through the questionnaire within the wider New Zealand context.

With regard to general social media engagement, New Zealanders appear to be reasonably well connected. Sixty-three percent of the population accessed social media in November 2013 (Singh, 2014) and this figure climbed to 68% less than a year later (M. Wilson & Spinks, 2014). The Otago region is even more connected, with 74% of adults visiting social media sites during the same period—an anomaly described by Wilson as ‘the student effect’. Facebook was New Zealand’s number one social media site in 2013 (Gibson et al., 2013; Singh, 2014) and Wilson and Spinks (2014) suggest that not only do 51%+ of New Zealanders visit Facebook each month, 1.8 million New Zealanders visit Facebook every day and that the “average person checks Facebook 14 times a day.”

The *World Internet Project New Zealand* report (2013) further suggests that two thirds of New Zealanders use Facebook (and other SNS) as an information source (p.7). These ‘engagement’ statistics suggest that the students who responded to the questionnaire reflect the increased social media activity that is typical of Otago users, which in turn is generally higher than the national norm.

**World social media use: across generations**

Looking at the uptake of social media or networking sites beyond New Zealand, the pattern appears to be close to that of the student respondents:

---

92 *The World Internet Project NZ* (2013) give the lower figure for use of “several times a day” (p.10)
93 The terms social media and social networking sites are used synonymously here. Duggan and Smith’s report is ‘Social media update 2013’. The NextAdvisor poster (below) similarly conflates these terms.
Some 73% of online adults now use a social networking site of some kind... As in previous Pew Research surveys of social networking usage, Facebook remains the dominant player in the social networking space. Some 71% of online adults are now Facebook users, a slight increase from the 67% of online adults who used Facebook as of late 2012 (Duggan & Smith, 2013, pp. para 1, 3).

Furthermore, while the evidence suggests that “young adults are more likely than others to use social media” (Duggan & Brenner, 2013 para 1), as indicated in the Next Advisor poster (2013) users of all ages are active on social media. And, as suggested earlier in this chapter, the majority of users appear to be active in the same online social spaces—in particular Facebook and other social networking sites—regardless of age.

Social media and nature: odd bedfellows

Connecting to nature via social media

As reported earlier, almost 50% of students who responded to the questionnaire indicated they had no preference when it comes to experiencing the natural world and either with or without computer technology is fine. While there appears to be a gender influence (proportionally more young men than young women selected this response) this figure still seems surprising, particularly in light of later responses to questions about whether or not experiencing nature via social media is a good or a bad idea. When asked, ‘Can it ever be ‘good or even better’ to experience nature via social media?’ a third of those who had indicated that experiencing nature either with or without technology was fine (i.e. the ‘computer-neutral’ students), now appear to contradict this earlier response by arguing that nature should not or even cannot be experienced via social media/Web 2.0. Observations by this (earlier) computer-neutral student sub-group include:
• I can't think of when it would be good or better to experience nature via social media - I would think it would be better just to get outside and enjoy it! [29g]
• No; you have to experience nature in a non technological way [81e]
• No; nature is nature and cannot be truly experienced in its fullness via social media. You need to get out there among it. [22m]
• No as you must experience nature first hand [18g]
• Not really. Nothing ever really beats physically experiencing nature. Ie; ACTUALLY going outside (shock horror) [91e]
• I believe not; the beauty in nature is that it is a system that acts autonomously. This leads to it having a powerful presence when experienced in a raw form; like climbing a mountain. A personal and individual would be more impactful and more likely to be memorable or leave a positive experience. [24g]

When the question was reversed as, ‘Can it ever be bad or unwise to experience nature via social media?’ this same computer-neutral sub-group again appear to have significant reservations about experiencing nature via social media. An even larger percentage–more than 60%–share concerns about how social media experiences are unhealthy (for humans) and lesser, unreal or distorted experiences of nature, which may disconnect humans from the natural world. Selected observations from these students include:

• If it is instead of experiencing nature outside; then this could be detrimental to the user's health [24g]
• when you spend too much time on [SNS] it can prove detrimental [339c]
• Ur not actually experiencing it [45g]
• .... nature is outside. not inside. [238c]
• You cannot sense it (smell; touch) [362c]
• Creates unrealistic view of nature. Not a complete experience. [352c]
• It could be framed in a negative light as social media is largely uncensored and other's opinions have huge influence over us. [28m]
• We shall become estranged from what properly constitutes nature; and so; we shall forget our complete dependence upon the natural world. [323c]
• Experiencing nature by social media alone is a bad idea as it could desensitize people to the importance of nature and in doing so diminish the ties we have and protective feelings we have over it. [97e]
All 504 free-text responses to these questions about the benefits or problems associated with experiencing nature via social media (including the computer-neutral responses) were collated and themed. The twelve themes which emerged—six each for benefits and problems—are presented, from the most to the least selected theme, in table seven. While the students appear to be well connected to social media and almost half even indicate a preference for experiencing nature via computer technology, the students also appear to be aware of the issues and challenges associated with this kind of mediated nature experience. The students’ observations (only a fraction of which can be shared here) indicate a very real understanding of the potential benefits, risks and other concerns that already occupy those examining media- ted contact with nature in the modern world (S. J. Ahn et al., 2014; Drenthen et al., 2009; Kahn, 2011; D. F. White & Wilbert, 2009).

Table 7 Nature on social media: student response themes

<table>
<thead>
<tr>
<th>Benefits of experiencing nature via social media</th>
<th>Problems associated with experiencing nature via social media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising awareness and understanding of nature</td>
<td>These experiences cannot be compared, nature must be experienced first-hand</td>
</tr>
<tr>
<td>A great information source</td>
<td>This is a reduced nature experience, senses are not stimulated</td>
</tr>
<tr>
<td>Overcoming human limitations e.g. physical, financial</td>
<td>Unhealthy for humans e.g. physically, mentally</td>
</tr>
<tr>
<td>Overcoming nature limitations e.g. vulnerable or dangerous</td>
<td>Unrealistic representations distorts nature</td>
</tr>
<tr>
<td>Sharing love of nature and connecting towards common goals or actions</td>
<td>Virtual nature substitutes nature and the human-nature connection may be lost</td>
</tr>
<tr>
<td>Other benefits</td>
<td>Other problems</td>
</tr>
</tbody>
</table>

As illustrated throughout this section the students are thoroughly online and engaged with social media but as these and other, often strongly worded, free-text comments and focus group observations illustrate, the students are also thoughtful, reflective and fully conscious of the online/offline world in which they live.

When social media and nature do combine

The students were also asked about their awareness and experiences of nature on social media. While the students’ responses indicate limited active engagement, in terms of creating, posting or sharing stuff about nature (including posting comments and uploading user-generated videos), 90% of students do appear to be aware of nature on social media/
Web 2.0 (at least occasionally) and three quarters of students look for information about nature on social media during the same period. These figures are significant and suggest that while social media undoubtedly and irrefutably concern the *social world*, they also concern the *natural world*.

As discussed in chapter five there appears to be little research on where or how the natural world is represented on social media. The few researchers who are working in this area tend to focus on what has been referred to as either Conservation 2.0 (Büscher, 2013; Büscher, 2014; Büscher & Igoe, 2013; Oosthoek, 2008), Evolution 2.0 (Aupers et al., 2012; Stinson, 2014) or Techno-nature 2.0 (Bogdanov & Van der Putten, 2014; Kahn, 2011; Kahn et al., 2009; R. Thomas, 2014). Even those exploring the statistics associated with social media and nature (for more general, popular consumption) tend to focus on environmental issues, such as climate change (Bawden, 2014) or extraordinary nature, such as the lunar eclipse as top story on Twitter (Guskin & Tan, 2011). The lack of research into social media and nature, is, of course, central to the current Nature 2.0 study and as such, is a recurring topic. Perhaps, however, it is best to conclude this *student-centred* section with comments about the prevalence of nature on social media which were made by the students themselves. In all three cases the observations emerged while the students were talking generally about the nature images which were circulating:

Bonny: Yeah, when I did it I think I tried to go on stuff like instagram and pinterest that would have heaps of like very specific sort of term like nature you would have heaps of photos that heaps of people would put in and stuff like that, so 

Susan: Like wandering through a social media site you’re bound to come across nature in some shape or form, be it a picture or a video or something.

Alice: Definitely on Facebook, like even the advertising and that if you’re looking at someone’s page and they might not be kind of, it’s not right there but it’s always…there’ll be something on the side, like Camp America or something and there’s a picture of it.

The final section below summarises the student characteristics which have been discussed throughout this chapter. In the upcoming chapters (seven and eight) this demographic and other student information—about interests and engagement with nature and social media—will inform the analysis of the 504 nature websites which were selected by these students as being reflective of their own ideas about ‘nature.’
Summarising the student characteristics

Context and student demographic
The student survey population is resident in Dunedin, a small university city in the deep south of New Zealand/Aotearoa. Urban-dwelling New Zealanders of European descent whose homes are outside Dunedin, make up the largest sub-population, mirroring both the University and wider New Zealand demographic. Other ethnicities are also represented within this study, including Māori and Pasifika (numbers are below the national average), Asian and also other non-New Zealand ethnicities (both groups at levels well above the national average). Students are drawn from all four University Divisions and the majority of students are studying in Sciences and Health Sciences. Most students are between 18 and 20 years and more young women than young men responded to the survey; more than two thirds of students are female.

Context and nature-friendliness
Those of European descent are routinely represented in human-nature studies as nature-friendly and New Zealanders of European descent, together with other locally-resident ethnic groups, are similarly generally well disposed towards the natural world. This is reflected in the students’ reported family interest in nature (two thirds of families are quite or very interested in nature) and also in the students’ own reported interest in and engagement with nature-related activities. Approximately half of the students talk or read about nature at least monthly and only 10% claim never to have watched a nature programme. The students are also active in nature; the majority have either worked or undertaken sporting activities in nature and almost all students have either camped or picnicked at least occasionally. While the students appear to be overwhelmingly nature-friendly less than half have not, and do not intend to, help a nature organisation.

Engagement with social media
The students are also engaged with social media; just over half claim to use social media 1-2 hours a day, almost a third use social media for three hours or longer and a further 41 students are connected all day. Only one student claims not to spend time on social media. Students connect to social media in a variety of ways including via desktop, laptop and mobile devices; almost half connect using a combination of laptop and mobile. Significantly, the most preferred social media activities appear to be the same activities
which engage users of all ages, i.e. talking with friends and/or family—most students do so at least weekly. Other favoured activities include listening to and sharing music and posting comments; activities undertaken weekly by more than half of all students. While it seems likely that these statistics will appear, over time, to over-represent desktop activity and under-represent activity on mobile devices, at the time of writing these statistics fairly represented the levels of social media engagement when the online questionnaire was undertaken (in 2013).

**Social media and nature**

Almost half of all students indicate no preference with regard to how they engage with the natural world (at ease with or without computer technology), however, many of these computer-neutral students (a disproportionate percentage of whom are male) also express concerns about the dangers—for both humans and nature—of experiencing nature via computers and social media in particular. All students were asked about the potential implications of such mediated experiences of nature and many echo similar concerns (about the dangers to human health and discouraging engagement with and understanding of real nature) as well as pointing to similar possible benefits of such experiences (such as awareness-raising and enhanced understanding about the natural world).

The majority of students engage with nature on social media; most indicate they are aware of Nature 2.0 and three quarters actively look for information about nature on social media, at least occasionally. While fewer students routinely post comments or create/upload nature-related material (students are more aware of than actively engaged with Nature 2.0) these figures suggest that while social media matter in the social world they also have implications for how people think about and potentially engage with the natural world. It is this question—how young people conceptualise nature in the user-generated online world—that is the focus of the following chapters.
CHAPTER 7

PRESENTATION AND ANALYSIS OF SEVEN NATURE THEMES

7.1 Introduction

A key aspect of this Nature 2.0 study has been to gather and analyse social media and other websites which include images, text and sound which young adults readily associate with nature. This chapter presents the website content which was shared by the 504 student questionnaire respondents. Identifying this nature content—the ideas encapsulated in the various online sites, in combination with the students’ own comments in support of these sites—makes it possible to begin to address research question four: which representations on social media typify ‘nature’ for young adults; does Web 2.0 introduce particular or changing representations of the natural world? This chapter presents and analyses the seven nature themes which emerged from the student-selected websites:

1. **Culture over nature** (CoN): emphasis on culture, rather than nature;
2. **Entertaining and Stunning Nature** (EaSN): media-ted nature documentaries;
3. **Beautiful and Relaxing Nature** (BaRN): primarily photos of unpeopled nature;
4. **Pleasure in Nature** (PiN): typified by having fun or holidaying in the outdoors;
5. **Conservation, Action, Responsibility, Education, Science** (CARES): the focus is on interest in and caring for nature;
6. **Nature Information** (NI): predominately textual facts about nature;
7. **Gateway to Nature** (GtN): online entry points to nature.

While the website content informed the nature themes which were assigned, other information including free-text comments and focus group observations also enhance understanding of the particular content which was chosen. Furthermore, in the methodology section, some of the challenges associated with theming website content were anticipated and discussed. The upcoming section (7.2.1) addresses the process of theming the nature websites and also revisits the challenges associated with theming website content. Particular attention is given to those challenges which were subsequently
informed by the websites which were chosen. Section 7.2.2 then presents focus group reflections on the nature content which was chosen, in terms of the representativeness of this content (website content circulated during the focus groups). The remainder of this chapter (7.3) presents and analyses each of the seven nature themes which were identified.

### 7.2 Identifying nature content themes

Braun and Clark (2006) describe thematic analysis as a “method for identifying, analysing and reporting patterns (themes) within data …[it] involves the searching across a data set…to find repeated patterns of meaning” (p.79, 86). The authors note that while this process can be linked to a particular theoretical or epistemological position (e.g. interpretative phenomenological analysis) it is not inherently connected to any position:

> Through its theoretical freedom, thematic analysis provides a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex, account of data (ibid., p.78).

Thematic analysis can be applied in qualitative analysis, where the process of ‘inductive theming’ allows the research question to emerge from the data. Alternatively, the data can be coded “for a quite specific research question…” (ibid., p.84), as was the case here. The students were asked to select websites which were indicative of nature for them. The resulting nature content was then themed with reference to the research literature (a highly iterative process, moving between the data and the literature), i.e. theming was associated with known and theorised cultural ideas of nature, as outlined in chapters three and four. The seven themes which were ultimately applied to the website content could not be mapped precisely to existing themes, but rather these frameworks and theories were used to guide understanding of the themes which emerged. Moving between the data and the literature did not constrain the theming process but rather it provided an analytical framework within which to position the website content which was shared.

#### 7.2.1 Theming nature website content

**First impression as content and first stages of theming**

The very first step towards theming the 504 websites was to know what to theme, i.e. which website content to assess and compare. This aspect was addressed in chapter two, where the importance of establishing criteria which would bring a degree of consistency
to the assessment of the nature content was discussed. Two factors—the limited time people spend on webpages and the significance of first impressions—informed the website content assessment. It was therefore reasonable to prioritise the website content which appeared on the first page, i.e. the first impression-as-content which appeared prior to scrolling or clicking beyond this page. This is the nature content which was captured as screenshots and subsequently themed in conjunction with the other datasets.

It had also been anticipated that it may be necessary to ‘click for first content’ beyond the first screen when the content is audio-visual and this proved to be the case in practice. For example, The Tree of Life on YouTube is very different from Tree Porn on Facebook, something which is only revealed by clicking for video content and contrasting this content with the Treeporn image, appearing on the first page of Facebook.

Having established what website content to theme the next step towards theming this content was to become thoroughly familiar with the nature content which was shared. All 504 websites, now captured as screenshots with supporting text, were thoroughly examined. Notes were also attached to each image (within Word) and any notable image, text or sound was recorded. This initial clustering of website content made it easier to code the websites, i.e. to identify prominent elements and features of interest (such as the absence or inclusion of people) and also prevalence of these features. This step was then followed by more systematic analysis of this broadly coded content, such that preliminary themes could be identified. The comments in association with the websites were also taken into account, but it was primarily the website content—the on-screen nature images, text and sound—which was the main focus of interest.
Defining and reviewing the nature themes
The next stage involved defining and refining the nature themes to ensure the ‘essence’ or story of each theme was clearly identified (Braun & Clarke, 2006, p. 92). While there was an initial attempt to map any themes to those already identified in the literature (i.e. nature as Arcadian pastoral and/or romantic wilderness, resource, real and risk) it readily became apparent that to do so would constrain rather reveal understanding of the nature content which had been shared. Consequently, these five cultural nature themes helped contextualise the analysis of the themes which were identified rather than provide an existing framework into which the nature content could be inserted.

In terms of defining and refining particular nature themes the important thing was to be clear about what each theme included and what it did not include. For example, the Culture over Nature (CoN) theme included content which was ‘loosely anthropocentric,’ i.e. the human element featured more strongly than any nature component. In contrast, content themed as Beautiful and Relaxing Nature (BaRN) included beautiful, emotive ‘Edenic nature’; typically, an un-peopled landscape but where humans are evident, they are in harmony with the nature around them. The ability to summarise the scope and content of each theme in no more than a couple of sentences was, as Braun and Clark (2006) describe a good test that the nature content had been clearly and justifiably themed.

While the process of theming was time-consuming, the seven nature themes which were identified did not change substantially throughout this process, although several themes were subsequently broken down into separate themes and overlapping sub-elements meant that certain nature content was moved between themes. For example, a ‘wilderness’ theme was ultimately replaced with two different themes: Entertaining and Stunning Nature (foregrounding action-packed nature in spectacular wilderness settings, as favoured by the nature media) and Pleasure in Nature (which foregrounds human pleasure in pristine nature spaces). Overlapping sub-elements proved even more challenging and this ‘thematic benchmarking and boundary-breaching’ is addressed below, in conjunction with use case examples.

Thematic benchmarking and boundary-breaching
As outlined, it is important to clearly define the nature themes which have been applied. It is also useful to include benchmark content as exemplars of these themes. For example,
as suggested, the defining aspect of the Pleasure in Nature (PiN) content is that nature is integrally associated with human pleasure (routinely through recreation or travel) in a typically attractive outdoor location. Unlike the other highly visual, nature-centric representations (Entertaining and Stunning Nature and Beautiful and Relaxing Nature), the explicit or implicit (and also benign) presence of humans is an intrinsic element within the wider nature representation. This nature representation may resemble either of the exemplar benchmarks shown in figure 43.

100% Pure New Zealand national park               Catlins, New Zealand

Figure 43 Website: benchmarking and boundary-breaching

Each of these Pleasure in Nature exemplars promotes nature as a place to visit, explore and enjoy. Visual representations, such as the climber foregrounding spectacular mountains and words such as pure, National Parks and Great Escape signal nature as a pleasurable place to be. While these websites are in many ways dissimilar (amount of text, colour, visibility of humans) the overall ‘essence’ of both sites is that nature is outdoors and a place of wonderment; a place to be enjoyed by humans. In fact, it is the differences between these websites which serve to highlight the greater similarity that binds the two, i.e. human pleasure in nature.

These particular benchmark websites usefully illustrate the similarities that unite websites and also the ambiguity which is inherent in many of the nature websites which were chosen. This highlights the difficulty in absolutely categorising any website as one nature theme rather than another; ideas within websites compete and boundaries between websites are often fluid and can be hard to define. While the 100% Pure New Zealand National Park site (prominently featuring a dramatic mountain range) is categorised as Pleasure in Nature, other mountain-centred websites (such as the those shown below) are themed elsewhere. This is not because these other nature representations are any more or
less focussed on nature as dramatic mountain landscape but rather because a crucial element, in this instance human pleasure *in* nature, is no longer an integral feature.

A similar challenge also exists with the text-heavy Catlins, New Zealand benchmark website (shown in figure 43). While other text-based sites about nature may appear with the Nature Information (NI) theme, again what is significant is the balance or the overall composition of the website coupled with particular defining elements, such as the foregrounding of pleasurable human engagement with nature. In the final analysis there will always be websites that defy simple classification. However, provided the analysis of these nature websites is as open as possible and any conflicting or ambiguous thematic coding is clearly addressed, this should not prove an insurmountable challenge.

### 7.2.2 Nature content as representative

The neutrally-framed web activity encourages the students to select an interactive website containing content which approximates nature *for them*. This content gathering activity is notable for its open design and any analysis will reference, but not be constrained by existing nature framings, typologies or classification schemes. As discussed, assessing website content (on both interactive or non-interactive sites) can be challenging in terms of the number of websites and the representativeness of these sites. With regard to the number of websites, the total number captured in this survey was manageable; 504 first websites from 504 students (plus an additional 207 second and third website selections).94 Whether these websites were a fair representation of nature was a question that was put to the students who participated in the focus groups (while a slide-show of many of the

---

94 As not all students chose multiple nature websites, these additional sites were useful for confirming saturation only; otherwise these were not included in the study.
websites circulated on a large screen). Comments shared during these sessions suggest that the nature content which was chosen was reasonably representative for this age group. Observations by the focus group participants can be grouped within several themes which emerged during these discussions. These include that this content is: (a) fairly representative; (b) reasonable, but idealistic–very few humans; (c) reasonable, but unrealistic–absence of death/food chains; (d) reasonable, but most websites are stunning:

(a) The websites are fairly representative

FG1 Munro: But I think that as far as the requirements for being interactive were, I think it’s a pretty good representation about sort of the collective thoughts of what most New Zealanders think about nature. I mean, like you said, there’s quite a lot of different sorts of people who come to Dunedin [from] sorts of different backgrounds like we’ve got in the room, and who would have different thoughts and things, and I think it’s a pretty, like, even though it was a fairly small selection thing, it was a fairly like, good representation, and the different websites and social media that have been collected are diverse enough…

FG1 Carla: Most of them kinda make sense

(b) The websites are reasonable, but idealistic - very few humans

FG1 Gloria: This probably is the more–extreme–being not quite the right word there but the more, like you look at it and go well that’s definitely it but there’s also other things that are integrated everywhere.

Facilitator: Can you explain that a bit more?

FG1 Gloria: Well like technically, you know, going back to the idea about humans, we’re natural but there were very few humans picked on there because when you think of nature you automatically think of like the extremes, like the really beautiful shots or animals and things but not in zoos, like, in the wild kinda thing…

FG2 Kelly: In a way we like to stick to our ideals. We like to sort of hold to what we would idealistically choose, rather than what reality might or might not be…

FG3 Andrea: Very little human focus when we think of nature.

95 The focus groups are identified as FG1, FG2 and FG3. Including this information underscores the fact that while the questions which prompted these remarks were very similar, the students who made these observations participated in different groups, where the discussions were not the same.
(c) The websites are reasonable, but unrealistic - absence of death, food chains

*FG3* Celia: I think to give a very fair representation of nature there needs to be some sort of representation of the elements of things like death and the food chain; things like well obviously we’re constantly killing things so that we can survive but that happens all the time because that’s nature and so I think there needs to be representation of that in order for this to be a proper representation of what nature really is. It can’t because nothing is always going to be positive in the complete sense.

*FG3* Andrea: Like natural disasters.

(d) The websites are reasonable, but most websites are stunning

*FG1* Tina: It’s not just like someone’s back yard…Those are probably the ones that when you ‘search’, they come up, like …

*FG1* Bonny: The ones sort of most associated with them …

*FG1* Tina: like, breathtaking …

*FG1* Carla… there’s no point in putting average things on the internet. Like no-one cares

*FG1* Tina: Yeah–unless it’s like, on Facebook and someone’s like–this is my new house, and then everyone’s like ‘oooooooooooo’… *[general laughter]* the public aren’t gonna want to see your back yard, so, yeah, I guess everything has to like meet a certain standard, otherwise people aren’t gonna like, look at it or something…

*FG3* Andrea: They’re not going to show a drizzly, like, rainy day, in Dunedin, because then who wants to look at that–they want to look at the beautiful sunshine…

*FG2* Adele: I feel like people don’t think it’s worth putting up on the social media sites unless it looks fantastic–unless it’s kind of, shocking, or fits the idealistic view.

While the possibility that these nature selections may not be representative cannot be entirely eliminated for this group of students at least, it would appear that enough websites were gathered to reasonably represent their ideas about nature as realised on Web 2.0.

The remainder of this chapter presents, discusses and analyses the seven nature content themes, together with selected free-text survey comments and focus group observations.
7.3 Nature website content themes

The nature website content is classified within seven overarching nature themes:

1. Culture over nature or CoN
2. Entertaining and Stunning Nature or EaSN
3. Beautiful and Relaxing Nature or BaRN
4. Pleasure in Nature or PiN
5. Conservation, Action, Responsibility, Education, Science or CARES
6. Nature Information or NI
7. Gateway to Nature or GtN

As discussed, these themes were generated from the student-selected website content, rather than shoe-horned into any existing schema or typology. Selected screenshots are included throughout this presentation and analysis to provide thematic benchmarks and to more clearly illustrate any points made.

7.3.1 Theme 1: Culture over Nature

A very small number of students, just 3% or 13 students chose nature websites which were subsequently coded as Culture over Nature or CoN. While this theme includes representations of nature, the focus or emphasis is primarily on the cultural context within which the various representations of nature are framed. Examples of CoN websites are:

New Zealand Nature Clothing (retail outlet)          Smite online game

This somewhat loose grouping of nature websites includes: online games (Castleville, Elderscrolls and Smite); shopping sites (NZ Nature clothing, Nature Discoveries); a
movie on YouTube; outdoor posts on 4chan; a personal blog; NZ forestry images; a Wikipedia profile of David Attenborough and popular news stories on Cracked.com, BBC news and The Australian. Free-text comments associated with these websites include: “humans are taking the knowledge we have of nature and creating new natural interactions” [49c] (referencing a BBC news story on green-glowing pigs) and “the [Outdoors draw quest] community talks about outdoor activities involving nature” [118c].

Nature in online games
The three games which were classified as CoN foreground human actors performing within a nature context rather than the natural world per se which instead, provides the backdrop for the human action within the nature space. Wills (2002) discusses this and also other aspects of digital nature representations in his excellent study on the culture of nature in computer and video games. Within the gaming world, Wills notes, nature serves a number of functions; it adds ‘authenticity’ to a game, it is available as a ‘raw’ material resource and it is ‘eye candy’ for the players; it helps create a great space to play. Free-text comments associated with the online games selected include: “[Castleville]…has plants ie trees and flowers as well as natural resources” [96e] and “[Smite]…contains a jungle” [409c].

Region, gender and Attenborough
Region is not of major significance in this CoN category. Three websites could be classified as remote (referencing South Africa, South East Asia and the jungle in Smite); three can be readily associated with New Zealand, while the remaining selections are region-neutral. Interestingly, eight of the 13 students who selected a CoN website are male. This figure is significant in light of the overall gender response rate, i.e. slightly less than a third of students were male. All of those who selected a CoN website were studying papers in either Chemistry or Economics.

Two students selected websites which feature David Attenborough, the doyenne of natural history film-making. These selections were classified as CoN as they feature the

---

96 Other online games appear with CARES where the emphasis is on conservation and nature discovery.
97 His study is on games but his ideas around the potential for changing ideas about nature resonate.
98 See van den Berg’s study (2006) on “the relationship between visions of nature and landscape preference of nature among groups of students from different educational backgrounds…” (p.44). She notes that students in Agriculture are more anthropocentric and Biology more ecocentric (Psychology students are the control group).
man rather than the natural world with which Attenborough is so strongly identified. The two websites and associated comments are: “He shows you parts of nature that you don’t know existed” [10e]; and “His documentaries are aimed for all ages and are very interesting because he teaches nature related things (i.e. the great migration etc)” [340c]. Other selections which include (or even foreground) David Attenborough have been coded with other themes (in particular EaSN) when the focus shifts from Attenborough the man or presenter to the nature programme he is presenting.

7.3.2 Theme 2: Entertaining and Stunning Nature

A total of 86 or 17% of all students selected websites which were classified as Entertaining and Stunning Nature or EaSN. These nature websites effectively identified themselves as they reflected the content which is typically associated with nature magazines, natural history documentaries and wildlife films. This is not to suggest that the format defined the nature content category which was assigned but rather that the nature framings in the print and mass media (now transferred or migrated online and available via social media and other websites) incline towards particular, identifiable media-friendly representations of the natural world. This is ‘real nature’, as articulated and discussed in chapter three; nature which is commercially framed and has high production values, an unpeopled nature which is routinely remote or exotic, which is frequently stunning and always entertaining to watch.

**Discovery Channel and other various sites**

Of the 86 EaSN websites which were selected, nine showcased Discovery Channel (DC) programmes on the company website including the popular TV show *Animal Planet*.

![Discovery programmes on company website](image1.png)  ![Disney Earth movie on YouTube](image2.png)

*Figure 45 Theme 2: Entertaining and Stunning Nature*
A further six students each chose one of a selection of YouTube-based videos showing either federated links to nature programmes (e.g. Documentary Tube Nature) or linking directly to programmes such as Earth (Disney Studios), Origin of Species and a short predator battle clip, entitled Python versus Alligator.

The website of British adventurer, TV producer and frontman, Bear Grylls, was selected by just one student. However, when his circulating image appeared during the first focus group it generated considerable discussion. The following is just a short extract:

Tina: Oh no–Bear Grylls! He’s like, uh, I think he was recently filming in Wanaka, and a bunch of people that we know were kind of like on his team, and, like it’s interesting that they put it up there, because it’s so …like he’s in the outdoors, but it’s such a fake, kind of thing …
Carla: Yeah–he stays in hotels in between …

National Geographic

By far the most popular nature representations in the EaSN category were those provided by National Geographic (NG). This highly successful print-to-mass-to-online-media organisation has a Facebook site (selected by one student) in addition to the main corporate website which was selected by 33 students. Other students chose particular webpages within the company website including NG Channel, Photography, Sign-up, Animals and Apps (nine selections). Forty-three National Geographic websites in total were chosen, representing half of all the EaSN websites selected.
BBC nature documentaries and Attenborough

The third cluster of nature websites in the EaSN category are those which showcase the blue-chip, visually spectacular BBC natural history documentaries such as Planet Earth, Blue Planet and Kingdom of Plants. The productions which were chosen again appear on YouTube and other video-sharing sites (14 selections) and also on the BBC corporate website (a further 13 selections), totalling 27 BBC nature choices.

As suggested in the previous CoN section, David Attenborough was a popular nature choice for a number of students. He is shown (below), foregrounding or presenting one of the BBC’s many widely-acclaimed nature documentaries. Four website comments directly reference Attenborough, either in association with the nature representations shown above or with other BBC productions. Observations point to him as being, “a well-known nature enthusiast; fun to read/listen to; has a lot of information about animals and their environment” [447c] and “David Attenborough produces many good documentaries about the natural world which are factual and interesting” [11g]. Other students simply marvel at the man and his abilities: “David Attenborough is amazing” [30e] and “David Attenborough says so” [111e].
Attenborough was also a brief topic of discussion in one of the focus groups, when his image appeared on-screen:

Kelly: Is that David Attenborough? ...Oh, he’s awesome.
Esther: I love his voice. It’s amazing.
Charles: I think it’s just coz he’s done so many documentaries on nature, and animals, and everything like that, that I guess you can associate him with nature, I guess.

This is nature because…
The free-text comments in support of the EaSN websites mainly relate to the inclusiveness of these sites and to the various media organisations’ abilities to convey nature’s variety through image, text and multimedia. Observations include:

• “[NG] has images; articles and stories from all over the world about nature” [349c]
• “[NG] is the entire world” [59g]
• “[BBC] shows good information on everything alive on this planet?” [7m]

Other comments point to the interconnectedness and the beauty of nature:

• “[NG website] is descriptive of nature and the connections of nature” [70g]
• “NatGeo showcases some of the most breathtaking and amazing nature on the planet - tropical locations; wildlife; and natural structures etc” [123e]
• “[BBC] shows living ecosystems” [34g]
• “[BBC] shows how amazing the world is” [48g]
• “[Disney] Wide display of earths beauty and varied” [34e]

Other comments address humans in nature and the human impact on the ‘environment’:

• “because its [BBC] wild and exciting and there is no humans disrupting it” [353c]
• “[Documentary tube] would probably give a good idea of what nature is about; hopefully not too disturbed by humans” [55e]
• “[NG]…showcases how humans treat animals unfairly including how we have destroyed the environment” [131e]
• “[BBC] shows how beautiful our world is and how we should keep it that way.” [279c]
PART III: DATA PRESENTATION, ANALYSIS & STUDY FINDINGS

CHAPTER 7

- “[NG] encompasses articles/blogs/photographies from all over the world; and concerns nature and any issues that may arise” [341c]
- “[DC] talks about environmental problems we are facing now” [74e]

In another focus group, Charles shared his thoughts about humans in nature, in response to the circulating EaSN website selections:

Charles: But also, I guess, another thing to point out is that there isn’t much human activity, or anything human–like anything that humans build is usually not considered nature—so if you build a house, even if it’s a house out of wood, it’s not nature, it’s a house—and I guess when we see nature we don’t actually see humans…. Even in the wide angle shots of nature there’s no humans in the nature which is surprising, I guess.

Finally, while a number of students point to the naturalness of the EaSN representations (inferring the truth or reality of these natures) other students address the reality or truthfulness of these representations directly:

- “[BBC] shows the world as a ‘natural’ environment” [75g]
- “[BBC] Showing animals in their natural habitat and the truth about how they live in the natural world” [41c]
- “[NG] are serious about true nature” [481c]
- “[BBC] shows different parts of Nature on earth-forests-lakes. it is all real” [473c]

One further comment points to the truth about nature’s darker side:

“It shows the true conflict that nature is. An everyday battle to survive” [16g]. (Although the python/alligator battle shown could only occur as a result of human intervention and translocation of species.)

Focus group participants also reflected on media organisations and the reality of nature as representation:

FG2 Susan: Unless people are doing a campaign to try and change it—change something. To, like, you’ll see the imperfect views if it’s a thing about global warming and how it’s
destroying the environment, in which case it will, it’s like trying to return to that perfect idealistic view. Take it back to that.

FG3 Andrea: Trying to make it like we hadn’t changed the environment—a lot of those organisations are trying to undo whatever damage, whether it’s like extension or regeneration—prevention.

**A global lens**

The students who selected websites themed as EaSN were representative of the overall student demographic, with the exception of gender; 31% of all students were male while 36% of EaSN websites were selected by young men. More strikingly, however, none of the 86 websites chosen include a nature representation which is New Zealand-based. The lack of New Zealand nature content (more generally) was observed by the participants in the first focus group, while viewing the circulating PPTs of the nature websites:

Carla: This isn’t really a representation of New Zealand nature. There’s pretty, there’s not really that much, that many websites that are New Zealand websites, or things that we recognise either, like, David Attenborough’s in Africa, looking at lions and things; like, it’s not even that familiar to us.

Munro: Now that you’ve said it, it is interesting that um, there ought to be more of The Lord of the Rings type stuff I guess. I mean, it being social media. I mean, particularly in The Hobbit, Peter Jackson has used quite a lot of the New Zealand landscape and things, and has used the film to show off the country, really, after the success of the trilogy he’s sort of gone with it, which is good.

Tina: Mmm it’s just interesting that they, what you were saying is that, people chose … they didn’t specifically look for New Zealand … New Zealand landscape.

As the discussion developed the students suggested why this might be the case:

Carla… maybe means that more people are seeing nature in this kind of way, rather than thinking of their own experience and that should be the first thing that comes to mind …

Munro: Yeah, I guess everyone has different views on what nature is depending on their experiences, where they’ve grown up—um—and stuff.

Bonny: And also like TV and all that sort of stuff—it does influence what you do think of as nature.
Students in the third focus group also discussed the significance of established media organisations, such as the BBC and National Geographic, but rather than being influenced (knowingly or otherwise) by these organisations ideas (or ideals) about nature, Andrea and Anna suggest that these programmes offer an opportunity to showcase a much more varied, even ‘world-wide’ nature:

Andrea: No, that’s why, like, when I tried to pick mine I was trying not to do the New Zealand ones but I was trying to do the world-wide one which is why I did BBC and whatever the other one was - National Geographic, but not just the New Zealand one, like, I think it was the American one coz they did all over the place, as well.
Anna: Yeah–I think it covers really a lot of aspects of nature, yeah.

Whether the students reasons for choosing such entertaining and stunning representations of nature are the result of the (conscious or unconscious) influence of TV, deliberate attempts to represent more international natures or simply a by-product of the environment in which the question was posed–media organisations are well placed to provide the solution to a question posed in a media environment–it is difficult to argue against the enduring prominence and appeal of blue-chip nature documentaries and films. And if asked to choose a representative nature website there is every possibility (as was evident) that among the sites chosen will be arresting, even blockbusting nature images such as those produced by National Geographic, the Discovery Channel and the BBC—after all, who can resist this kind of hype?

Discover the glorious variety of life on Earth and the spectacular and extraordinary tactics animals and plants have developed to stay alive. This is evolution in action; individual creatures under extreme pressure to overcome challenges from adversaries and their environment, pushing the boundaries of behaviour. Cutting edge cinematic techniques capture unprecedented, astonishingly beautiful sequences–birds running and dancing on the water’s surface in dazzlingly intricate displays of courtship and fidelity, fish outwitting predators by using their fins to take flight, flies competing in a mesmerising eyeball inflation contest and much more (BBC *Life* series promotion).

The nature content theme in the following section also prioritises visually arresting images of the natural world and again, humans are noticeable by their absence. The

emphasis, however, now shifts from high-octane nature which is entertaining and stunning to watch to a natural world which, while still beautiful, now inclines towards relaxation and even spiritual nourishment and fulfilment.

7.3.3 Theme 3: Beautiful and Relaxing Nature

Beautiful and Relaxing Nature or BaRN websites typically include some aspect of nature’s aesthetically pleasing, emotionally soothing or spiritually uplifting qualities, conveyed through text and video, but most of all through the photographic image.

Natural features such as mountains, forests (often rainforest), remote beaches and stunning bodies of water (including waterfalls, lakes and fiords) typically predominate in these nature representations. Significantly, this is also an unpeopled landscape but, where humans do appear they are in harmony with the nature around them either, ‘beautifully,’ for example, Nahko Bear on YouTube (shown further below) or with humour, e.g. David Attenborough’s Wonderful World on YouTube. These BaRN selections have the most obvious and direct connection with one or two of the dominant and enduring cultural nature framings, as either Arcadia or wilderness or Arcadia/wilderness now combined.

Eighty-one students selected websites categorised as BaRN. This figure is just shy of the 86 EaSN websites selected and, as with the EaSN sites which were chosen, gender again appears to be the one demographic which matters. Now, however, the gender bias is female; 62 young women (77%) and just 19 young men (23%)\(^\text{100}\) chose a website which

\(^{100}\) Just over 30% of the total study population is male.
was subsequently categorised as BaRN. In addition, unlike the predominantly video-based EaSN and also the human-centred CoN websites (which include a variety of media formats), the majority of these BaRN representations appear as images or clusters of images on static photo-sharing social media sites such as Flickr and Pinterest.

These social media and other BaRN websites are a combination of user-generated sites (where the nature images have been uploaded and shared by amateur web users) and sites which are managed more formally by nature organisations or even commercial interests; approximately a 50:50 split, user-generated content and ‘other’.

Fourteen students also used Google image search and Bing search (just one student) to locate an appropriate nature image and four of these students did so by typing in words other than nature (including NZ mountains, Mt Cook, farmland and trees). Unsurprisingly, the results of the Google image searches predominately showcase representations of nature as forests, waterways and waterfalls.

**Timeless, placeless lens**

Many of the BaRN images selected defy location; beautiful beaches, sunsets and temperate forests can be anywhere, including in either northern or southern hemispheres. Of those images which could be located, just 12 or 15% of the 81 selections show New Zealand locations. These images are most identifiably New Zealand not from the images themselves, but from either the comments associated with the website, e.g. “It [Flickr Go

---

101 Farming utilises nature in a way that would suggest this image would be better accommodated with the CoN websites. It is included here, however, as these farmland representations are idealised and do not show the more industrial aspects of this primary industry.
PART III: DATA PRESENTATION, ANALYSIS & STUDY FINDINGS

CHAPTER 7

Wild] contains pictures of New Zealand wilderness” [276c] or the image caption. Sites which were identified through the caption include: Kea photography (chosen by three students); Raptitude NZ beauty; Wikimedia rainforest NZ; Sea stack and Mt Taranaki; two YouTube selections (NZ nature landscapes and Natural paradise); NZ mountain landscape; and two image mountain searches (NZ mountains and Mt Cook).

Nature’s soundtrack
Nine BaRN representations (selected by 10 students) are presented not as static images, but as carefully lit and choreographed videos on YouTube. And while sound is evident in many if not all videos, here sound becomes a musical accompaniment to complement the beautiful, relaxing and inspiring nature images which are shared.

One further nature soundtrack was also selected which tests the boundaries of this BaRN section. Rainymood, chosen by just one student, has low visual appeal (raindrops appear on a grey screen) and instead this storm simulator’s impact is derived from the sound of arresting, soothing rainfall rather than the sight of nature-as-weather.
This is nature because…
The website comments associated with the BaRN photos and videos predominately point to the beauty and wonder of untouched or pristine nature. Significantly there are no negative observations, except when it comes to the impact or influence of humans. Trees, mountains and landscapes are all recurring elements. Comments in relation to the main recurring themes (nature’s variety, beauty and unpeopled purity) together with observations about sensing nature beyond the visual, are included below.

A number of students commented on the diversity of nature, although there were fewer comments here than were associated with the media-generated EaSN representations. These comments also tend to overlap with other observations about nature’s beauty:

- “It [shows] the range of different types of nature in the world” [70c]
- “Diverse range of photography of nature and life on this planet” [123c]
- “it contains pictures of beautiful and varying landscapes” [458c]

The majority of observations associated with BaRN websites respond to nature’s inherent or natural beauty:

- “It is photography of beautiful objects associated with the natural world” [17m]
- “Natural and beautiful” [183c]
- “it captures the beautiful sights of the earth in its natural state” [296c]
- “it shows the beauty and balance of the bush and animals and the perfectiveness of nature” [306c]

There were also many comments about the need for nature to be untouched by humans, including humans themselves and also the outcomes of human endeavour, i.e. man-made or built environments:102

- “it is an untouched natural environment” [99e]
- “it is green and virtually untouched by humans” [67c]
- “it is not manmade and it is beautiful” [299c]
- “it shows natural landscapes; with no urban features” [26c]

102 In their study in the Netherlands, Verbrugge et al. (2013) found that: “About 47% of the students did not see wildness or the absence of humans as requirements for real nature.” (p.5) This seems to keep nature within the Dutch Arcadian framing; a nature image which is strongly apparent in other studies.
• “People are not involved in causing the event to happen; it occurs regardless of mankind” [395c]
• “it’s not made by man. It's pure” [398c]

The subject of nature as untouched, unconstructed, independent of the human environment and even pure also emerged during the focus groups. In the first session Tina reflected on visions of nature as *untouched* by humans, in the second, Susan reflected on how *structure* or the lack of structure might be evident in different New Zealand locations, while Andrea and Anna (in the third session) wrestled with the idea of nature’s *purity*:

### Nature as untouched

Tina: …we almost think of, like ourselves not in it, like we kind of remove ourselves from the landscape, it’s like we haven’t even touched it…

### Nature as unstructured

Susan: It’s kinda like the Hagley Park/Botanical Gardens type thing is very structured and it feels more artificial somehow because it’s had the human tampering type thing…and then the tracks–Mt Isabel, Mt Somers type thing, they feel more, like more like real nature, if that’s actually something you can quantify.

### Nature as pure

Andrea: Right now coz I’m thinking about the Tawharanui Regional Park, I’m thinking the beach because it’s like, it’s a peninsula and it’s like, got an amazing beach, and I’m thinking that–and just like, it’s basically just what’s untouched by humans or is left to be as natural as possible.

Anna: Not really the beaches but the idea of untouched, clean, pure, purity, yeah.

Andrea: Yeah. I think the main one is, for me, is ‘untouched’. Just - like just places that we haven’t changed at all. It’s just a big one - or if we have changed its minimal, it’s like a walking track through the forest or something.

### Beyond the visual

Among the 81 website comments justifying the various BaRN selections were several remarks about how the particular website makes it possible to appreciate the *sound* and
even the presence of nature to the point that it was possible not only to be soothed by the nature representation, but to be virtually transported into real nature:

- “you can see the diversity of the land, hear the relaxing sounds of the earth” [330c]
- “It allows you to see the beauty of nature and helps you feel it” [197c]
- “You can close your eyes and feel as if you are there” [343c]

These observations, together with the other comments concerning nature’s purity, incline increasingly away from the physicality of real nature towards a more emotional or even spiritual appreciation for, or connection with, the natural world.103 This holistic turn in the West has long been identified by others writing on the human-nature connection (Aupers et al., 2012; K. Clark, 1949; Macnaghten & Urry, 1998; Pierson, 2005). This topic is revisited in upcoming sections.

7.3.4 Theme 4: Pleasure in Nature

The Pleasure in Nature or PiN category, with its focus on spectacular scenery and alluring nature locations was introduced in a previous section to highlight the challenges associated with website content benchmarking and inevitable boundary breaching. For example, the representation of nature as mountain range may be linked to a personal desire to achieve in a nature setting (mountains as outdoor adventure challenge is classified as PiN) and also align with a vision of nature as a remote, even unattainable ideal (mountains as unpeopled wilderness, themed as BaRN). The defining element of PiN websites—about human pleasure in nature—was also discussed in this earlier section.

Exemplar benchmarks of this nature representation shared in the previous section included 100% Pure New Zealand national park (climber foregrounding a mountain range) and Catlins, New Zealand (a tourist website for this nature-centred region in New Zealand’s deep south). Two further websites also typify the PiN website theme. Both again show New Zealand as an attractive and accessible playground for everyone. And again humans may be portrayed explicitly (as in the Pakiri Riding website) or the human presence may simply be implied, e.g. 100% Pure New Zealand Facebook site.

103 While the majority of these comments imply a more spiritual human-nature connection, one student speaks to the hand of God directly: “mountains are a great demonstration of Gods awesome creation” [62g].
Eleven percent or 55 of the 504 websites chosen were categorised as PiN. These sites typically show people having fun while engaged in a range of activities (such as fishing, hiking, skiing, horse-riding)—or being enticed to do so—in spectacular natural, outdoor environments. These websites are highly visual and feature dramatic mountain ranges, remote beaches, pristine rivers, fiords and ocean realms. (The only exceptions to this visually spectacular emphasis are the more information-focused Dunedin and Atlanta Botanic Gardens websites and Department of Conservation/DOC websites.)

Significantly, 75% of the PiN websites represent New Zealand nature places and settings and the majority of these sites (38) are produced and managed by commercial or government organisations.

The largest sub-group here are national tourist and other outdoor, activity or adventure related guides, including those promoting 100% Pure New Zealand (seven selections), DOC tracks, walks, parks and recreation websites (six selections) and general outdoor, tramping, hunting and fishing guides (eight selections) (such as shown above). Other sub-
groups include regionally-focused outdoor and activity guides (four selections) and eight, more overtly commercially-focussed regional guides, such as Monarch wildlife (Dunedin), Redwoods Whakarewarewa Forest (Rotorua) and the Marlborough Sounds Adventure Company. Five New Zealand websites are a blend of images, guides and tourist operations focused on a single region: Fiordland. The three non-commercially-produced and managed websites which represent New Zealand content include two personal blogs (Tramping in NZ blog and Trippy Tramping NZ) and a daredevil kayaking manoeuvre uploaded to YouTube, Red Bull Whitewater Kayaking Mission.

The 14 non-New Zealand websites classified with the PiN group include user-generated content (Great Outdoors blog and Hiking in the Swiss Alps YouTube clip) and commercial websites showcasing: (a) multiple locations such as Facebook’s Truly Amazing Places and Two Days One Night, Scenic beauty of nature; (b) specific holiday destinations including Maldives Dive, About Australia, Cook Islands, Lonely Planet Zermatt, Borneo Hotels and Nature Expeditions Africa; (c) Wikipedia information on Outdoor recreation and Camping; (d) Atlanta Botanic Gardens.
This is nature because…

Three overarching themes dominate the free-text comments associated with the 55 PiN websites. Students’ reasons for selecting these particular websites relate to:

- The importance of being able to experience nature first-hand. For example: “There are many pictures of natural settings; places you can visit” [15m]; “[the website] describes journeys that have been undertaken and that you too can undertake.” [66e]; “shows many ways to truly experience nature” [21c].

- The need to exclude humans (nature as untouched or pure). For example: “there is very little influence of man shown here.” [64e]; “… Places that are unaltered by human presence; technology or modification” [65g]; “Images of pure; natural landscapes; almost untouched by man” [22e].

- The beauty and remoteness of nature. For example: “shows the natural beauty of outdoors” [5c]; “its outdoor environment that is beautiful” [336c]; “It shows the beautiful aspect of natural NZ; the remote parts” [420c].

A number of the comments also contained a mix of one or more of these observations within a single statement. For example: “It is wild; hard to get to and mostly left alone by human development” [22g]; “[the website] showcases NZ's great outdoors. The pictures are vibrant and makes you want to get amongst the action and the fresh; crisp air.” [11c]; and “[you] get to see New Zealand's nature at its finest untouched and preserved.” [463c]. Other statements in support of the website selection as being representative of nature, speak to the idea of favourite places, e.g. “It's where I grew up; and i love outdoors” [62c] and also the variety of, and an appreciation for, nature. Comments include: “[the website] represents all elements of the natural environment on a large scale [28g]”; “It shows an unbiased view of nature and what the Earth has for offer [72c]”; “Everything is relaxing and not rush hour. Every nature is appreciated” [448c].

Gender and region

Both gender and region are significant with regard to the PiN websites; 80% were chosen by young women and the selections strongly favour New Zealand nature locations. While the gender bias may be unexpected, the regional preference is perhaps unsurprising. The PiN category implies direct interaction with the natural world and as the majority of students are New Zealanders it would seem likely that these nature experiences would be
derived locally. What is more surprising, however, is that so many comments associated with the website selections speak to the need to exclude humans and the importance of the human-nature distinction. This somewhat paradoxical aspect of the PiN websites may at least in part be understood with reference to media representations of nature and the importance of ‘human well-being’.

Mediagenic ecotopes and human well-being
The following description of images associated with Jasper National Park could equally be applied to many of the PiN websites (appearing in New Zealand and elsewhere):

These images are characterized by an overarching sense of harmony as the recreational activities depicted do not disrupt the aesthetic pleasures of the wilderness landscape. Whether it is a round of golf set against the backdrop of snow-peaked mountains, canoes gliding effortlessly along the glassy waters of Lac Beauvert, or the professional landscaping around the swimming pool at Jasper Park Lodge, these images collectively imply that recreational pursuits need not disrupt enjoyment of the wilderness and, in fact, are an important part of experiencing Nature in the park (Cronin, 2011, p. 30).

The representation of more active pleasure pursuits within a seemingly untamed but also benign, nature wilderness has a long tradition in the West, most notably in the USA, as has been discussed elsewhere in this study. From the nineteenth century onwards, nature organisations such as the Sierra Club have promoted mediagenic ecotopes towards a “vision of the good life” contingent on, what Luke (1997) further describes as “outdoorsmanistic spectacularization of Nature” (p.49). The interests of nature writers, Cronin and Luke and sports geographers such as the UK’s John Bale, are socio-political. They are concerned with the framing of conservation places such as national parks as ‘natural sportscapes’ while simultaneously denying the human-built component and the environmental impact (Cronin, 2011). This ‘nature illusion’ is similarly evident in modern media, for example, in advertising high-end or luxury products such as cars and holiday destinations (although the motivations behind the production of such images can be very different). In his studies on nature in TV advertising Hansen (2002, 2010) points to media representations of nature as ‘symbols of freedom’ and as ‘challenge, sport, manhood and endurance.’ Similarly, Aupers et al. (2012) point to how car advertisers

routinely utilise the natural environment, associating the latest model with the concept of the open road, with its emphasis on freedom in ‘sun-drenched, panoramic landscapes’.

These studies shed some light on the appeal of, and indeed the widespread availability of, such spectacular mediagenic ecotopes or stunning nature wilderness for the purposes of both conservation and commerce. However, the comments associated with the 55 PiN websites add a further, important dimension to understanding these selections. In particular, those comments which situate the student in nature, i.e. “this is where you can go” [37g], suggest the (albeit contradictory) need to be a participant in this unchanged, unpeopled, stunning nature space in terms of the benefits for me. This signals the importance of well-being and the human benefits which can be derived from direct nature contact. Those attending to the concept of subjective well-being, in conjunction with nature experience generally articulate two types of well-being, namely hedonistic well-being, typically self-centred and associated with “happiness and the pleasantness of emotions” (Tam, 2013, p. 76) and eudaemonic well-being,105 which is more strongly associated with “the good life’ not as a state, but more as a process of fulfilling one’s best and truest potential” (L. Roberts et al., 2015, p. 17; see also Waterman, 2013). And, as many connectedness with nature studies show, it is eudaemonic well-being which is sought through active engagement with a natural world which is revered rather than ravaged (C. A. Capaldi, Dopko, & Zelenski, 2014; Hedlund-de Witt, de Boer, & Boersema, 2013). The study by Nevers et al. (2006) is one of the few visions of nature studies to assert the significance of eudaemonic well-being (cultivated through positive nature experiences). In this qualitative study of children’s visions of nature and value orientations, the authors’ articulate the eudaemonistic view as one of three prevailing nature views (the others being anthropomorphic and instrumental) and they suggest:

The values or desirable ends associated with the eudaemonistic view are twofold, pleasure for humans and preservation of nature as it is. Therefore, this view and the experiences associated with it may be valuable for transforming anthropocentric views to non-anthropocentric ones… (2006, p. 116)

As is evident in the 55 PiN websites which were chosen, the happiness derived from eudaemonic well-being is a well-being contingent on nature which is also undisturbed

---

105 Also appears as eudaimonic (eudaimonism) and eudemonic (eudemonism). Well-being in terms of hedonism and eudaemonism original derives from Philosophy and Ethics.
and unchanged, ideally nature-as-wilderness. This theme is discussed by Trigwell, Francis and Bagot (2014) in their study on the wilderness link with spiritual fulfilment and eudaemonic well-being and also Passmore and Howell’s (2014) study on wilderness, well-being, eudaemonic happiness and the positives of loneliness in nature; a theme which unexpectedly emerged during the second focus group session:

Adam: So I guess often people probably see nature as a more alone type thing. It’s not necessarily a social thing. But then when I, if I go for a long walk I guess I’d probably go with a pal to talk with, sort of thing and back in New Plymouth we could climb Mount Taranaki—I did it twice in the holidays which was awesome, and you know, I’d always go up with a pal and look round and there’d be people around, but there wouldn’t be too many people, so I guess when you want to connect with nature you usually do it in a way that’s more lonely…

Unlike other connectedness to nature and well-being studies, Passmore and Howell (2014) suggest that eudaemonic happiness comes, not just from self-realisation or fulfilment, but “from doing virtuous deeds” (p.371). While it would be difficult to associate any of the PiN websites with virtuousness (human pleasure, rather than virtue is foregrounded) many of the websites discussed in the following CARES section, appear to speak directly to eudaemonic happiness associated with undertaking virtuous deeds, not only in nature but for nature.

7.3.5 Theme 5: CARES

One hundred and forty-six students, almost 30% of all respondents, chose a nature website which was themed as CARES: Conservation, Action, Responsibility, Education and Science and three quarters of these websites were chosen by young women. In total, more students chose a CARES-themed website than any of the other nature themes examined. The media-friendly, block-busting EaSN websites were selected by 17% of students, the BaRN sites (echoing the Arcadian and wilderness traditions) were chosen by just over 16%, the eudaemonistic, PiN websites were the choice of 11% of students and the more human-centred, CoN sites were selected by just 3% of students.
The defining aspect of websites themed as CARES is caring, either caring about or more actively caring for the natural world. This can be manifest in a variety of ways and is here framed around the themes of Conservation, Action, Responsibility, Education and Science. While these frequently overlapping and intertwined human-nature connections are not the same, they—or more precisely the CARES websites which were selected—can be said to belong within the same corpus or ‘body.’ Websites such as Becoming Human and New Scientist can readily be associated with ‘the head,’ i.e. with formal institutions, cultural traditions and history, while other websites such as Casey Trees, Eartheasy and Ecosimply speak more readily to ‘the heart.’ These latter nature representations are about caring in ways that are available to anyone and everyone; they promote active and responsible caring for nature in a multitude of inclusive, even contestable ways.

The 68 different CARES websites which were chosen by the 146 students can be situated on a spectrum which ranges from ‘the head’ (Education and Science) to ‘the heart’ (Action and Responsibility); Conservation websites typically incorporate or straddle both the ‘head and heart’:

Head           Heart

Science, Education ---- Conservation --- Responsibility, Action

90 students, 38 websites --- 56 students, 30 websites

146 students/selections, 68 websites

Figure 48 CARES website spectrum: head to heart

Of course, as is the case with the other themes discussed throughout this chapter, these CARES sub-categories are rarely discrete; boundaries overlap and are routinely breached. Furthermore, the same website can speak to both the head and the heart (just like people really). For example, the New Zealand Forest and Bird and WWF Good Nature websites appeal to the readers’ appreciation or even love of nature (towards engagement through donations or active participation), while simultaneously promoting an understanding of nature which is founded on science. So while a number of these sites may be readily accommodated by one of the CARES sub-categories which emerged (e.g. nature.com speaks directly to science), other nature websites are less easily assigned. And, as becomes increasingly apparent below, even nature.com selections are less absolutely
about science when these websites are considered in conjunction with the student’s own comments about why this particular website is representative of nature for them.

**Science and Education - the head**

Despite these overarching considerations, it is possible to situate 38 of the CARES websites (selected by 90 students) within the more established and formally managed realms of science and education. These websites foreground different interests including:

*Science institutions and publishers* (50 selections)

This section is dominated by the Nature Publishing Group (NPG); 39 students selected the nature.com company website, with a further six students choosing related social media NPG sites. Associated free-text comments predominately focus on the *Nature* journal as a rich source of information about science and nature, through both words and pictures, e.g., “It has a wide range of information that relates to nature” [51e] and “it has so much information about nature and what is currently happening in research.” [165c]. Students comment on the diversity of nature which is contained within the journal and also, at times, the controversies, “its current and controversial and people can express their opinions through commenting on posts” [74g]. Other selections here include New Scientist, the Minnesota Institute, Metamorphosis: Tale of a Wetland and Blood Falls (glacial phenomenon). Associated free-text comments again address the informative nature of these sites and also their importance in building nature appreciation, towards conservation; “because we must appreciate nature” [323c] and “it has pictures and is very informative on how to conserve nature” [344c].

Forty-five students chose the nature.com website as being representative of nature for them. While it could reasonably be argued that this nature choice represents an easy web hit, the majority of comments associated with these website selections challenge this assumption and, it is argued here, justify nature.com as an adequate representation of nature for these students. While two comments are non-committal and unrevealing, “It’s called nature.com” [102e], “Science” [36c], the majority of observations are both pertinent and relevant. They range from the very general, i.e. nature.com “involves living
things and the processes of life” [86c], “it shows all aspects [of nature] in my opinion” [153c], to the more technical/scientific, “It is based on the physical medicine or the fundamentals of nature how it all became” [494c]. In other words, while nature.com may have been a highly discoverable, attractive and even an obvious choice for many, the students justified choosing this website as a reasonable representation of nature for them. And bearing in mind that many of these students are studying within the Sciences and Health Sciences, this nature selection is not surprising.

**Sharing science** (15 selections)

Sharing science websites typically share understanding about nature and science with a more general audience and these include the interactive Facebook sites, Earth Story and Feaking [sic] Love Science (chosen by six students). Other sites selected are Becoming human, Einstein Exhibition, What is nature worth? and three sites including information about the earth, natural wonders and also rainforests. While the free-text comments again highlight the significance of information-sharing, there is now more emphasis on the wonder of a more exotic and untouched natural world. Comments include: “It shows things from exotic places that an average person may not have any knowledge of” [211c]; “This is nature as it is an example of a largely untouched area of the earth” [130e]; and “This is related to the conservation of the natural world. Keeping things as they were” [30c].

**Science discovery tools** (3 selections)

Two nature discovery apps were selected: Leafsnap for iPad and Treeline nature near you app, chosen by two students. Free-text comments associated with these selections reinforce these sites as good guides to the natural world.

**Children’s science/nature education** (5 selections) and **online games** (17 selections)

Twenty-two students chose nature sites which appeal to much younger age groups. The five which foreground education include an information site, Experiencing world within
nature, three activity sites, for children to ‘go and do’ e.g. Outdoor nature child and the media site, National Geographic Education: Forces of Nature. Comments associated with these sites mainly stress the value of learning and sharing what nature is all about, “you get to learn and share experiences about nature” [64g], although one student again touches on the ‘human influence, “it portrays things that occur without human control (humans cannot choose to have a hurricane; although they can influence the chances)” [10m].

The 17 online games which were chosen promote understanding of, interacting with and having fun in digital nature, rather than overtly promoting the conservation of nature. These sites include the professionally produced and globally popular games, Alice Greenfingers, Garden panic, Wolfquest and Farmville as well as other games promoted by media agencies (NG and the BBC), educational establishments and other groups, e.g. Learning games for kids. Again the focus of these sites is on education, “It teaches you about ecology” [270] and also now on the value of this learning as an interactive experience: “You can interact with sea life” [212c]; “You are able to learn and interact about the different places in the world and what happens in nature” [26g].

![CARES themed online nature games](image)

Online digital games are also represented in the second CARES suit (from the head to the heart) where there is further discussion on nature and increased attention on conservation.

**Conservation, Action and Responsibility - from the head to the heart**

The other major group of CARES websites (30 different sites, chosen by 56 students) can be accommodated under the umbrella of Conservation, Action and Responsibility. While elements of education and science may still be implicated in these websites, it is now a
more active and engaged ‘caring for nature’ which is foregrounded. These ‘head to heart’ websites can be clustered as:

**Conservation organisations** (26 selections)

Five conservation organisations, both national and international, were favoured by the students. These include New Zealand’s Forest and Bird (chosen by just one student) and the Department of Conservation or DOC (selected by nine students). Those who chose the latter’s websites point to DOC as a management and conservation organisation and its role in caring for and also *sharing* New Zealand nature: “DOC looks after all the nature in New Zealand” [5g]; “it is about conservation and outdoor recreation” [200c]; “it is involved with maintaining flora and fauna for people to enjoy and connect with as well as protecting it from human impacts” [386c]. One student sums up the sentiments of many, “the name says it all. They’re the nature dudes” [72e].

A further seven students chose Nature Conservancy (NC) websites; four selected the company website and three others chose the NC on Facebook and tumblr. Associated website comments focussed on the need for conservation and the preservation of species, for example: “shows beauty etc of nature and also how humans affect it–shows the vulnerability and resilience of nature” [195c] and “[NC] shows examples of nature worldwide and how to preserve it” [291].

The fourth conservation organisation to be represented in this group is the WWF (World Wildlife Fund). Five different WWF websites were chosen by six students, including: WWF, WWF NZ, WWWF Good Nature, WWF UK blog-Amazon and WWF Your inner animal (quiz). While the comments made in conjunction with these websites note the importance of the WWF in conservation generally, the majority of these observations relate to caring about animals in particular i.e. “they talked about animals, plants and nature stuff” [40c]; “animals’” [256c] and “can take a quiz about animals” [15c].
The final choice in this conservation organisation category is Greenpeace New Zealand; this website was selected by three students. Comments here spoke to Greenpeace as an organisation which not only protects the environment, but which also seeks solutions to environmental problems, e.g. “help save endangered species; find solutions to climate change and focus on renewable energy” [53c].

*Nature sanctuaries* (3 selections)
Three female students selected three different nature sanctuaries, two within New Zealand (Karori sanctuary experience and Nga Manu nature reserve) and one from overseas, Lake Shore Preserve (Wisconsin, USA). One comment conveys the spirit of these websites, “the sanctuary is a perfect slice of nz to show how the relationship between the environment and animals. You can also experience the fresh air” [38e].

*Conservation activities* (16 selections)
The 16 websites categorised as conservation activities include two conservation group sites selected by multiple students, i.e. the international Wild about nature website (chosen by five students) and the New Zealand community bird watching/counting site Nature Space/Nature Watch (selected by four students). The remaining seven sites are international and all focus on the environment, including fauna and flora: EPA It’s our environment, Ecosimply, Earth easy, Fauna and Flora international, Sharing nature, Casey Trees and Friends of Trees.
PART III: DATA PRESENTATION, ANALYSIS & STUDY FINDINGS

CHAPTER 7

The comments associated with these websites address the importance of promoting interaction with nature, including plants and animals, and also the value of these interaction to humans, for example, “it is encouraging people to go out and plant trees” [112e] and “talks about how humans benefit from nature” [196c].

Conservation media (6 selections)

Just one site was chosen here by six students: National Geographic Environment webpage. Comments generally point to this media organisation’s ability to share information about nature’s beauty and diversity, showcasing the best of what nature has to offer. It is also suggested that nature is something we should care for, “it is outdoors, beautiful. Needs looked after” [63e].

Children’s conservation online games (5 selections)

Just two websites were selected here, Games for Nature (chosen by four students) and Eekoworld (one selection). One comment neatly summarises the sentiments of those who were drawn to these sites, “it teaches about conservation and shows the world in a clean natural form” [254c].

International lens

CARES websites have a predominately international focus; only 19 of the 146 websites (just 13%) include representations which feature New Zealand nature. The majority of these websites appear in the section on conservation organisations, including the nine DOC selections, Forest and Bird and WWF NZ (each chosen by one student) and Greenpeace NZ (chosen by two students). The only other New Zealand websites selected in this CARES section are nature sanctuaries (two different New Zealand sanctuaries were selected) and Nature Space/Nature Watch, chosen by four students.

Online digital games

In total 22 of the CARES nature selections were online digital games (17 included with ‘the head’ and five with ‘the heart’). These games are primarily about having fun online
but they also focus on different aspects of caring about and also for managed and wild nature. Three other online nature games (Castleville, Elderscrolls and Smite) were classified with the CoN websites, as these games foreground human actors within the nature space which becomes little more than a backdrop to the main human action. As noted earlier, nature in online games can be used to fulfil many functions; it is a raw material resource which can either reinforce existing nature stereotypes or introduce new forms of nature (J. S. Clark, 2014; Wills, 2002). And as Wills’ further suggests, nature can be used to convey a kind of ‘electro-Romanticism’ in games i.e. “a mythic return to Eden” (p.405). Aupers (2013) says more on this holistic re-enchantment of nature in his writing on religion, spirituality and online games and also the growing popularity of nature-as-Arcadian in online gaming, as a response to the complexities and challenges of the modern world. Aupers’ particular interest is in ‘otherworldly worlds’ such as World of Warcraft and other online MMORPGs, few of which were chosen by students in the current study. A number of online games which were selected, however, encouraged care of managed nature environments, such as Alice Greenfingers and Garden Panic. Chang (2011) notes the appeal of these types of games and discusses Farmville (chosen by one student) which, he suggests, references the Arcadian but also, significantly, avoids any confrontation with reality in terms of environmental limitations or degradation (p.10).

Others writing on online games and nature move beyond the idea of nature as holistic re-enchantment or escape from reality and they interrogate the potential benefits (education, behaviour change, fundraising and also research, monitoring and planning) and also risks (distracting from and misleading about real nature) of games which have a conservation focus (J. S. Clark, 2014; Goodwin, 2016; Sandbrook, Adams, & Monteferri, 2014). In his study ‘Gaming conservation: Nature 2.0 confronts nature-deficit disorder (NDD)’, Fletcher (2016) applies the concept of Nature 2.0 (as used by Büscher) to examine how these ‘co-created’ virtual nature experiences may encourage commitment to conservation action. His findings, however, suggest that rather than countering the effects of NDD online games may instead widen the gap between “professed commitment to environmental causes and effective action in support of such causes” (p.1).

While a conservation potential may be evident in an increasing number of online games, more importantly within the current study context, it appears that the online environment itself is one in which nature-as-conservation, or rather nature-as-CARES finds a voice.
CARES and the conservation potential
One comment appears to sum up the spirit of this group of 146 nature website selections. The student chose the online Games for Nature and added, “it allows the alien to learn about nature but how to conserve it as well” [81e]. The strong conservation interest which is evident in many of the CARES selections (in both the websites and supporting comments) and also many of the other nature websites themed elsewhere (with EaSN, PiN, BaRN and even CoN) was unexpected.¹⁰⁶ These nature-caring websites may have been chosen as a result of one of two related but dissimilar drivers or, more likely, a combination of both. Either (formal and informal) nature-caring/conservation groups, who now have a powerful promotional tool at their disposal, are more visible and available online for selection or the students are simply able to select more caring, conservation-minded sites as being representative of nature and so they did.

Conservation sites are more visible
Those writing about conservation and environmental NGOs, such as Greenpeace and the WWF, have documented the often fraught but also symbiotic relationships which can develop between conservation groups and the media (Lester, 2010; Lindahl Elliot, 2008a). But while these relationships with the mass media can be beneficial (at least for some conservation interests) this hardly compares with what can now be achieved in the new media environment. Those with conservation agendas have, like so many other social, economic and political interest groups now comprehensively migrated online, where they and also their ideas and influence have flourished (Scherman et al., 2015; Takahashi et al., 2015; Yang, 2007). The subject of conservation groups and the media was discussed in earlier chapters, in term of mass media (chapter three) and new media (chapter five). This topic is also revisited in chapter eight, which examines those who are behind the generation of content online, with particular reference to the nature content which was selected.

Nature implies care/conservation
Sites which promote caring about and also for nature may well be highly visible on the web, however, so too are a myriad of other nature representations, many of which are

¹⁰⁶ For example, the nature image, New Zealand forestry, themed with CoN, is accompanied by the comment, “They [DOC] appreciate and look after nature” [307c]
anything but caring. So can there be a more prosaic or mundane reason for the popularity
of these sites; did the students chose nature-caring sites simply because they could? This
is the argument presented by the many social media optimists who write about the web
as an environment which connects people, enabling them to do—in ever more powerful
ways—what they have always done; namely to collaborate, to create and share content and
to come together as a ‘network of activists’ to solve a multitude of pressing problems
(Buckingham & Willett, 2006; Shirky, 2010; Tapscott, 2008; Wheeler, 2010).

The last two nature themes which emerged in this study (and which are outlined below)
stand somewhat apart from the other five, primarily image-based nature themes which
have been described in the preceding sections. Nature Information (NI) and Gateway to
Nature (GtN) prioritise text over image or at the very least, text is as prominent as the
more visually arresting components on the website. One of the strengths of the web is
that it enables the rapid transfer of written information and it is this textual element,
evident in the websites which were chosen by a significant number of students, which is
the focus of the final two nature themes which emerged.

7.3.6 Theme 6: Nature Information

Nature Information or NI websites were selected by 102 or 20% of students and again
there is a slight gender bias; just 66% of NI websites were chosen by young women.

Nature information, primarily on Wikipedia
What differentiates these selections from those themed elsewhere (with CoN, PiN, EaSN, BaRN or CARES) is the lack of visual framing and the focus on impartial, factual information rather than heightened image, experience or sensation (although selective visual content does appear as informative images and maps). While these ‘texty’ website choices initially appeared to be easy hits\textsuperscript{107} the associated comments–concerning the perceived authority of these sites, the wide variety of information which is available and beauty of the images shared–add weight to the validity of these selections.

The majority of these web choices (almost 90%) show the results of various nature-related searches on Wikipedia. A significant 73 of these were simply for ‘nature’, while other nature topics include general/scientific information (e.g. about biology and uncontacted peoples) and also information about different nature locations around the world, including the Alps, the Dead Sea and Milford Sound (11 selections). Milford Sound is one of only three New Zealand nature websites appearing in this NI section, the others are Waikoropupu Springs (on Wikipedia) and Google maps-Dunedin. Three students also searched on Wikipedia for tree-related topics, including forest and Sequoioideae [redwood].\textsuperscript{108}

Just 11% of NI searches, producing nature definitions and descriptions, were retrieved from online sources other than Wikipedia. These sites were a combination of user-generated sites and commercial websites, including: Reddit (actual trees); Google (earth, natural history and maps: Dunedin); Population and ecosystems; Facts about Niagara; Dictionary nature; Worldometers and Did-you-know nature.

**Sub-themes and this is nature because…**

A number of lesser themes can be identified in this NI section and student comments, in support of these NI websites, are presented in the context of these sub-themes.

\textsuperscript{107} Echoing a similar potential, noted in the CARES section, with reference to the nature.com selections.

\textsuperscript{108} Fauna (e.g. kiwi, rabbit) appeared in the second and third web selections but perhaps surprisingly not in any of the first 504 first websites which were themed as NI.
Five websites which were chosen had a more overtly *human flavour*, such as population statistics and maps. While pointing to the value of factual information, even these sites include nature overtures, e.g. “Street view in particular. It is indiscriminatory and interactive—also see Google Earth for more untamed areas” [22m]. Three selections were more *science-focused* and comments here are about discovery and learning, e.g. “learning new things and easier way of teaching” [65c].

*Environment/ecology* themes were chosen by three students and now interconnectedness is foregrounded, as articulated by one student, “Wildlife and nature are symbiotic; to experience nature one must experience the animal life inhabiting it” [257c]. The boundary-less *earth and sea* sub-theme was chosen by four students, whose observations included, “It’s the true world; in its most natural form” [115] and “earth is surrounded mostly with water” [498c]. Other, more specific *nature locations* (including Angel Falls in South America and the Cave of Crystals in Spain) were chosen by seven students. Comments associated with these selections noted the spectacle and unchanged beauty of these nature places, e.g. “It highlights what an extraordinary world we live in” [506c], “It is a beautifully untarnished natural phenomenon” [417c] and “It’s unchanged by man” [488c]. Those who selected one of the four *tree-related* sub-themes noted the significance of plants and linked trees with being natural. One student observed that forest-as-nature is “…the type of nature which allows you to escape from too much technology” [69e].
The largest sub-theme was nature, searched by 76 students (73 on Wikipedia). Comments here can be further sub-divided into three general, at times overlapping categories:

- Comments point to the nature site as a rich source of information (through both text and image) which describes, explains and enables learning. Examples include: “If [the alien] can read English then this will explain everything” [287c], “This addresses the core concepts of Nature in our modern world” [435c] and “tells you about it in words and pictures” [500c].
- Other comments allude to the site’s broad coverage of nature, revealing all aspects of nature, for example: “it is a multiple of pages dedicated to only nature.” [1m], “it shows all aspects of the natural or organic world.” [53g] and “it gives a wide picture of everything in nature with pictures as well” [63g].
- The third resonating theme, chosen by somewhat fewer students notes the nature site as being an excellent source of nature definitions, including those that enable understanding of real nature. For example, the website shows nature which “…would occur whether or not people are here.” [104c], “its the outdoors in its purest form” [376c] and “it is the true definition of nature” [111c].

Wikipedia matters: range, depth and validity of information

The number of Wikipedia-based nature representations chosen by the students was perhaps to be expected; Wikipedia is, after all, a ready source of information on almost any topic. As Lih (2013) points out, Wikipedia is considered “a fundamental resource on the Internet” and it’s “users expect it to be constantly updated, mostly accurate, and always available” (p.183). So what better place to look for a fair representation of nature than on this ‘always available’ and arguable trustworthy website? Furthermore, Wikipedia is (as many students noted) a rich source of information on a diverse range of topics, either within the same webpage or available by seamlessly linking from page to page. As a result, closer inspection of almost any Wikipedia page quickly reveals that the actual (nature) content is much more extensive than the search itself might suggest. For example, the search for a seemingly specific topic such as Milford Sound revealed information, not only about this fiord’s etymology and geography but also the history of the region, tourism and information about the 2004 oil spill which disrupted this ‘internationally renowned’ nature location. Adam in focus group 2 discusses the appeal of articles found on Wikipedia (as a sample Wikipedia image circulated):
Adam: Yeah, and also I selected something that was like a Wikipedia article that was on the biodiversity of nature, which was explaining exactly kind of how it all works and interacts and everything…We definitely have more information at our disposal but even though we have all this information at our disposal we tend to go to the comforts of something like Wikipedia first - or something like that. It is great anyway. But yeah, we definitely have a lot of information at our fingertips. We don’t have to go search through some encyclopaedia book.

Adam’s observations are insightful and pertinent. He cares enough about nature and/or this Nature 2.0 study to volunteer as a focus group participant. He is also thoughtful in his responses, and yet he, like many other students who responded to the online questionnaire, used Wikipedia to articulate or realise his ideas about the natural world. With so many choosing this user-generated site (which anyone can edit) as a key information source about the world–including the natural world–questions then arise around the quality of the nature information which is shared and whether or not there should be concern about Wikipedia as the first information port-of-call for many.

In 2005 an article appeared in the scientific journal *Nature* which compared the accuracy of information held in the well-regarded and trusted *Encyclopaedia Britannica* with information presented on Wikipedia. What was interesting about this comparison was not that the results suggested that *EB*’s entries included fewer errors, roughly “2.92 mistakes per article compared to 3.86” for Wikipedia (Lih, 2013, p. 185), but that the difference was so much less than expected (Palfrey, 2008). Of even greater significance, perhaps, is that errors on Wikipedia (about nature and every other topic) are not only more likely to be challenged by the user (in a way the reader would be unlikely to challenge the expert contributions to *EB*) but also that these factual errors can be rapidly corrected unlike those in *EB* which may take years to be revised; a point that the author fails to highlight in this otherwise illuminating and thought-provoking article.

**Hopetoun Falls as visual trope or meme?**

As outlined above, searching for ‘nature’ on Wikipedia was a popular choice for many and this particular Wikipedia page is lengthy, richly detailed (through text, image and video) and informative. More importantly, this page also carries a particular and notable image of nature, in the top right-hand corner of the webpage. The image of Hopetoun
This idyllic image of nature is repeatedly hit (as evidenced in the current study) but where it is from (Australia) has much less relevance. The image is now a visual trope or meme (as discussed in chapter five), representing and potentially reinforcing a particular nature ideal in much the same way as another cultural meme, such as a tune, idea or catch-phrase, spreads. It is similarly suggested that a certain image may be well suited to ‘memetic selection’ (Blackmore, 1999, p. 14); replicating and spreading because it satisfies a need for a particular nature image. Here that need is satisfied by Hopetoun Falls; an image which includes all the prerequisite elements for idealised nature in the twenty-first century, including gently flowing water, tranquillity, exoticism, placeless-ness and an unpeopled and unchanged landscape.

Combining all 504 nature selections in this Nature 2.0 study, which include this idyllic Hopetoun Falls image– knowingly or otherwise– illustrates just how influential this representation of nature (and others like it) have become. Remarkably, almost 17% of all the student-selected nature websites include the Hopetoun Falls image or, if not precisely this image, one of its two exotic waterfall near look-alikes.

7.3.7 Theme 7: Gateway to Nature

A second group of ‘texty’ websites and also the final theme to emerge in this Nature 2.0 study is Gateway to Nature or GtN; this was chosen by just 21 or 4% of students. While numerically low, these selections show a strong gender bias, with 62% of websites being chosen by young men. Again these sites– which are little more than entry pages to Facebook, YouTube and other social media sites– initially appeared to be easy or lazy
searches and the concern was that the students had not fully engaged with this activity. These selections were initially dismissed as they appeared to relay no nature content or ideas about nature. However, the websites were subsequently reinstated following a re-examination of the content in conjunction with the students’ comments in support of these search and entry webpages. The comments suggest that the students made deliberate and conscious choices about these selections within the context of online nature, rather than ‘not bothering’ to look for a nature website or engage with this activity in any real sense. As is evident below, the comments in support of these selections were thoughtful and pertinent, suggesting full engagement with this activity and the wider Nature 2.0 study.

Web entry and search pages as nature content

Figure 51 Theme 7: Gateway to Nature

This is nature because…

The recurring observation that appears in almost all the GtN comments is that these search or entry pages enable unlimited, unfettered access to nature; anything can be found, it’s all out there to be discovered. Comments about YouTube search, for example (selected by seven students), include: “it has almost every recorded natural document” [57g]; “it contains the world” [17c]; and “you can choose to watch any video on natural elements you want here” [120]. Comments associated with other entry pages include: “[tumblr search] shows everyones perspective of ‘nature’ through their own eyes” [71e]; “[Facebook search] shows how humans connect and interact with each other indirectly…” [10c]; and “[Wikipedia search] contains basic information about many things; many of which are associated with nature. You could give the alien an overview of nature on Earth” [51c]. Four students also chose Google search and again, inclusivity and discovery were significant, “It has all databases on it” [40e] and “the alien can google nature and do its own research” [66c].
Two students also selected apps i.e. Google apps and Best apps for kids. As the last two comments to be shared in this overview of the seven nature themes which emerged in this Nature 2.0 study, these apps comments are particularly apt, signalling what may be considered the best and the worst of online nature, nature via Web 2.0:

“[Best apps for kids] allows you to interact with animals usually found in wildlife and also shows animations of natural sceneries” [167c]

“I guess I could add a video of nature; but it's not really nature; just pixels. The alien should have a look outside for a real idea of nature” [66g]

This chapter has included a description and analysis of each of the seven nature themes which emerged from the 504 student-selected websites, in conjunction with supporting free-text comments and selected focus group observations. In chapter eight these themes are revisited and further analysed in terms of how local or international this content is and also whether or not there are any notable sub-population differences in the content which was selected. The 504 websites are then re-analysed, now as ‘containers’ of the student-selected nature content; a study phase which was not anticipated, but which emerged during analysis of the websites. This upcoming chapter then concludes with a review of the seven nature themes, with particular reference to the five cultural/media-ted nature themes which were identified and discussed in chapters three and four.
8.1 Introduction

In chapter six the characteristics of the 504 student survey respondents were presented and discussed, with particular reference to demography (gender, ethnicity and family home) and also interests and activities related to nature and social media. In chapter seven the student-selected nature website content was then presented, themed and analysed, in conjunction with a selection of the students’ online free-text comments and also pertinent focus group observations. The current chapter summarises the website content themes which emerged and builds on the information from these two earlier chapters, including further analysis of the nature content from the perspective of location (ideas of nature as local or remote) and also any sub-population differences (see section 8.2).

The current chapter also analyses the web containers which house the nature content. This second component, which attends to the social media-ness and the authority of the student-selected websites was not anticipated in the original study design but emerged during the preliminary analysis of the data; an unanticipated research turn which added further challenges but also potentials to this Nature 2.0 study (see section 8.3).

This chapter then concludes with reflections on the student-selected nature content, with particular reference to the dominant cultural nature frames, as discussed in chapters three and four, i.e. nature as Arcadia, wilderness, resource, real and risk (see section 8.4).

8.2 Nature website content: seven nature themes

8.2.1 Content themes revisited

Seven nature content themes emerged from the 504 student-selected websites. These were presented, discussed and analysed in the previous chapter. The seven nature themes are shown in figure 52 and are summarised in descending order of popularity.
CHAPTER 8

1. CARES - Conservation, Action, Responsibility, Education, Science

The most popular nature theme, applied to almost 30% of websites chosen, is CARES. These websites (together with students' observations) are about the importance of caring about and also for nature. As discussed in the CARES section, this content appears on a spectrum, ranging from ‘the head’ (where the emphasis is on education and learning about nature which is valued) to ‘the heart’ (where attention shifts to the need to more actively protect and conserve nature which is both valued and vulnerable). As was frequently found to be the case, many websites here included content which is a combination of both ‘head and heart’. The popularity of the CARES websites was unexpected. While nature (undefined) was used throughout the online questionnaire, neither conservation nor environment appear anywhere, in any of the questions. However, the idea of caring about and more actively for nature, are clearly foregrounded in these website choices.

2. NI - Nature Information

The second most popular nature theme was NI, applied to content chosen by 20% of students. The nature representations in these predominately text-based websites include a variety of seemingly impartial, neutral definitions and descriptions about different

![Diagram showing the distribution of nature themes among student-selected websites](image-url)
aspects of the natural world (although interestingly none of the websites highlight any particular animal species and the only plants to be foregrounded are trees). Wikipedia features strongly here and the ‘nature’ webpage was (perhaps not surprisingly) chosen by 90% of all students whose nature selections were categorised as NI.

The idea of lazy searches or easy hits with regard to these 73 ‘nature’ Wikipedia searches (and also with regard to other simple nature searches, such as Google and Google image searches for ‘nature’) was discussed in the previous chapter. As discussed, the students’ comments in association with the majority of these searches suggest full engagement with the study and the validity of these searches, not as lazy or easy hits, but as reasonable searches producing adequate representations of nature for those students. Despite this assertion, the decision was made to further test the students’ nature ideas excluding the 128 nature selections which could (arguably) be contested, as shown in table eight.

Table 8 Nature themes with and without lazy three

<table>
<thead>
<tr>
<th>Themes ranked</th>
<th>504 nature websites</th>
<th>504 - % of total</th>
<th>504 minus 128 ‘lazy three’</th>
<th>376 - % of lesser total</th>
<th>Increase or decrease</th>
<th>New ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CARES</td>
<td>146</td>
<td>29%</td>
<td>102</td>
<td>27%</td>
<td>-2%</td>
<td>1. CARES</td>
</tr>
<tr>
<td>2. NI</td>
<td>102</td>
<td>20%</td>
<td>29</td>
<td>8%</td>
<td>-12%</td>
<td>5. NI</td>
</tr>
<tr>
<td>3. EaSN</td>
<td>86</td>
<td>17%</td>
<td>86</td>
<td>23%</td>
<td>+6%</td>
<td>2. EaSN</td>
</tr>
<tr>
<td>4. BaRN</td>
<td>81</td>
<td>16%</td>
<td>70</td>
<td>19%</td>
<td>+3%</td>
<td>3. BaRN</td>
</tr>
<tr>
<td>5. PiN</td>
<td>55</td>
<td>11%</td>
<td>55</td>
<td>15%</td>
<td>+4%</td>
<td>4. PiN</td>
</tr>
<tr>
<td>6. GtN</td>
<td>21</td>
<td>4%</td>
<td>21</td>
<td>5%</td>
<td>+1%</td>
<td>6. GtN</td>
</tr>
<tr>
<td>7. CoN</td>
<td>13</td>
<td>3%</td>
<td>13</td>
<td>3%</td>
<td>No change</td>
<td>7. CoN</td>
</tr>
<tr>
<td>TOTAL</td>
<td>504</td>
<td>376</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Possible ‘lazy three’ searches: Wikipedia-nature, Google-nature and Google image-nature)

As shown in table eight, excluding potentially easy or lazy searches significantly impacts the NI theme (websites drop from 20% to 8% of the remaining 376 websites). However, CARES websites continue to equate with ideas of nature for the majority of students, dropping just 2%, from 29% to 27% of the remaining 376 websites.

Reinstating all NI websites, as valid and justifiable representations of nature for those 102 students also notably reinstates the validity of the discussion on the emergence of the visual meme for nature. This is most visibly evident here, in the idealised image of Hopetoun Falls (prioritised in the Wikipedia nature webpage); a twenty-first century image of nature which is timeless, exotic-but-placeless and devoid of humans.
3. **EaSN - Entertaining and Stunning Nature**

Ranking third in the nature content themes is EaSN, which was applied to content chosen by 17% of students. These commercially-framed, visually arresting real nature representations are almost exclusively drawn from print and mass media sources, such as National Geographic and the BBC; established media organisations which have now successfully migrated online. As suggested, the students’ reasons for choosing such spectacular media images may be the result of the influence of TV, deliberate attempts to represent more international or diverse natures or simply be a by-product of the environment in which the question was posed; media organisations are well placed to provide the solution to a question posed in a media environment.

4. **BaRN - Beautiful and Relaxing Nature**

Just slightly fewer students (16%) chose content which was themed as BaRN. These nature websites—a number of which also foreground audio and the ‘sound of nature’—have the strongest connection with two of the three enduring cultural framings of nature, i.e. as Arcadia and romantic wilderness. Comments mainly reinforce these nature views, referencing not only nature’s diversity but also the beauty and purity of nature, as untouched by humans. Nature’s purity in the West, otherwise described as the holistic turn, has long been identified by those writing on the human-nature connection.

5. **PiN - Pleasure in Nature**

The fifth most popular PiN content theme (chosen by 11%) is noteworthy. While the content of these websites echoes many of those themed with BaRN (wilderness is evident in many of these websites), they also include a eudaemonistic turn. Humans are now significant, either overtly or implicitly, in all of these nature websites; the sites are fundamentally about human pleasure in nature. Importantly, however these sites do not represent a nature exploited, but rather images are of humans enjoying a natural world which appears untouched by culture. This is an important (and contradictory) component of these nature images which is also reinforced in the students’ observations.

6. **GtN - Gateway to Nature**

The GtN theme was assigned to just 4% of the content shared. These Facebook, YouTube and other social media entry pages initially proved challenging; what insights could online portals reveal, in terms of how these young adults think about the natural world?
This theme provided the strongest evidence in support of the value of capturing students’ observations together with their website selections. As the often insightful comments demonstrate, these gateway sites are not anomalies or indications that the students had disengaged from the survey, but rather that the students responded to this question in the most inclusive way they knew. These website choices, perhaps more than any others, must be understood in combination with the students’ comments; only then can the students’ ideas of nature’s inclusivity and the importance of nature discovery be revealed.

7. **CoN - Culture over Nature**

The final and least popular website content theme was CoN; just 3% of all websites selected could reasonably be assigned to this nature category. As suggested, this somewhat loose grouping of nature websites is less about human exploitation of nature or viewing nature as a resource (as outlined in chapter three) and more about prioritising human interests and activities over those where nature is centre-stage. For the 504 study participants, this human-centred nature view appears to be of decreased or even marginal significance today.

In addition to the seven nature content themes, geographic location also emerged as a noteworthy characteristic in many of the nature websites; geo-zone is discussed below.

8.2.2 **Content and geo-zone**

Location information was captured as a potential indicator of how locally or globally the students responded. When asked about nature did the students think of remote, exotic, idyllic or romantically portrayed nature (which they may never visit, or need to visit, in person) or did they think of nature which is familiar and close to their local experiences?

Geo-zone was not always relevant or available so this lens was only applied when it was both visible and likely to contribute to the overall discussion of the nature content which was chosen. The geo-zones (shown in table nine, below) are based on the main geographic areas which were identified in the websites. Notably, certain ‘natures’ transcend political boundaries (in the imagination and also in reality) and as such, geo-zones such as rainforest are both more relevant and more readily identifiable than any particular political region; geo-zone trumps politico-zone!
Table 9 Geo-zones associated with websites

<table>
<thead>
<tr>
<th>Region</th>
<th>Subsections</th>
<th>Geo-zone used</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-zone/ international</td>
<td>Multi-zone/ international</td>
<td>Multi-zone</td>
<td>Different locations, regions &amp; ecosystems represented in a single webpage; <em>excludes</em> tropical rainforest &amp; polar regions</td>
</tr>
<tr>
<td>Global</td>
<td>Ocean, planetary scale</td>
<td>Global</td>
<td>The unbounded earth or global nature e.g. Wikipedia planet earth or sea</td>
</tr>
<tr>
<td>Climatic regions</td>
<td>Rainforest</td>
<td>Rainforest</td>
<td>Any tropical nature, anywhere in the world</td>
</tr>
<tr>
<td></td>
<td>Polar</td>
<td>Polar</td>
<td>Both northern &amp; southern extremes of the planet</td>
</tr>
<tr>
<td>Northern and southern hemisphere</td>
<td>N. America, Europe, Asia</td>
<td>North</td>
<td>Identifiable, temperate regions in the northern hemisphere; <em>excludes</em> tropical rainforest &amp; polar regions</td>
</tr>
<tr>
<td></td>
<td>S. America, Africa, S.E. Asia</td>
<td>South</td>
<td>Identifiable regions in the southern hemisphere; <em>excludes</em> tropical rainforest &amp; polar regions</td>
</tr>
<tr>
<td>Oceania</td>
<td>New Zealand</td>
<td>NZ</td>
<td>Nature 2.0 study location, local nature; <em>excludes</em> tropical rainforest &amp; polar regions</td>
</tr>
<tr>
<td></td>
<td>Australia/Pacific</td>
<td>AU/Pacific</td>
<td>Near neighbour regions; <em>excludes</em> tropical rainforest &amp; polar regions</td>
</tr>
<tr>
<td>Not relevant</td>
<td>Region-neutral</td>
<td>n/a</td>
<td>No location is evident and/or not applicable e.g. ‘Love like Fire blog’, Google search box</td>
</tr>
</tbody>
</table>

The alien interloper

It is possible that the fictitious alien who was used to (impartially) encourage the students to select nature representations which reflect their own thoughts about nature, may have influenced the nature website selections; the alien is, after all, an interplanetary being. This possibility arose in conversation during two of the focus group sessions. Firstly, while viewing a selection of the websites chosen during the PPT slideshow and then again, during a conversation about humorous nature websites; why these websites may or may not have been selected by the students:

Comments made in focus group 1, while participants viewed the PPT slideshow

Munro: I think it’s usually, um there was a website about outer space, and of course that’s also part of nature, but then again we mostly think of earth nature. Well also I guess if we’re showing this to an alien, he probably already knows, well ‘it’ probably already knows about outer space.

Gloria: Well no, animals in zoos are still natural, but they’re not the extreme, like people, if you’re wanting to explain it to an alien you pick the more extremes rather than being ambiguous.
Discussion in focus group 3, about humorous websites, e.g. ‘If Animals Could Talk’
Andrea: I guess like, within the constraints of what the question was which was to give an alien a real idea, that’s not a real idea.

While the focus group points raised may have some validity there appears to be little evidence, either in the comments which support the website selections or any other free-text comments, which support an overtly significant ‘alien influence.’

Nature content by geo-zone
As shown in table ten, 21% of the 504 websites were region-neutral. These websites include all GtN sites, many of the CoN sites and also other websites, appearing across all nature themes. Topics which appear in this region-neutral category include those with a scientific focus (e.g. nature.com and Wikipedia-biology), selected online games (such as Outdoors drawquest and Garden panic), personal profiles (in particular, David Attenborough) and nature information, e.g. what is nature worth? Where geo-zone could be assigned, the majority of these websites (54%) were categorised as multi-zone. Geo-zone includes a variety of international locations, such as those which typify media natures and also nature search results on Wikipedia. Where more specific geographic regions could be identified–with the exception of local, New Zealand nature–the number of websites in each category is much lower.

Table 10 Nature website selections by geo-zone

<table>
<thead>
<tr>
<th></th>
<th>n/a</th>
<th>Multi-zone</th>
<th>Global</th>
<th>Polar</th>
<th>Rain forest</th>
<th>North</th>
<th>South</th>
<th>AU Pacific</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARES</td>
<td>64</td>
<td>46</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Ni</td>
<td>7</td>
<td>81</td>
<td>4</td>
<td>-</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>EaSN</td>
<td>6</td>
<td>75</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>BaRN</td>
<td>-</td>
<td>65</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>PIN</td>
<td>-</td>
<td>65</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>41</td>
</tr>
<tr>
<td>GtN</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CoN</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>total</td>
<td>106</td>
<td>273</td>
<td>9</td>
<td>1</td>
<td>11</td>
<td>18</td>
<td>7</td>
<td>3</td>
<td>76</td>
</tr>
</tbody>
</table>

Examples of these specific geo-zones, including the nature content theme which was applied (excluding New Zealand), include:

- **Ocean/planetary scale** (9 in total): CARES (4) e.g. BBC Blue Planet Games; Ni (4) e.g. Google Earth, Wikipedia Sea; EaSN, just one i.e. BBC Blue Planet;
PART III: DATA PRESENTATION, ANALYSIS & STUDY FINDINGS

CHAPTER 8

- **Polar** (just 1 website): CARES, 22 words blood falls (glacial flow);
- **Rainforest** (11 in total)
  - CARES (6) e.g. Wikimedia rainforest; NI (5) e.g. The tropical rainforest, Amazon rainforest;
- **North region** (18 in total): CARES (8) e.g. Casey Trees, Friends of Trees; EaSN (2) e.g. BBC European otter; NI (5) e.g. Facts about Niagara Falls, Wikipedia Alps; Pleasure in Nature (3) e.g. The Great Outdoors blog;
- **South region** (7 in total): CoN (2) e.g. BBC News Asia Pacific; PiN (3) e.g. Nature expeditions Africa; EaSN, just one i.e. BBC watch series [Attenborough in South Africa] and NI, also just one i.e. Wikipedia Angel Falls;
- **Australia/Pacific** (3): PiN (2) e.g. Cook Islands [holidays]; EaSN, just one i.e. National Geographic Australia.

For the popular CARES-themed websites, specific nature locations are less important; 44% of these are region-neutral and a further 33% have a multi-zone/international focus. As suggested, the multi-zone category was applied to the majority of these websites and multi-zone natures appear across all nature themes, except GtN and CoN websites.

Why these multi-zone natures were so popular is not entirely clear. As discussed, this may be the result of the alien influence, although the students’ observations in the free-text comments and those shared during the focus groups are inconclusive. Multi-zone natures also appear in certain nature themes more than others. For example, 80% of the texty NI sites and also the largely static BaRN websites include multi-zone/international nature content, while the EaSN websites include an even higher 87% of international content. This latter figure is the result, in part at least, of the interests of media organisations, such as the BBC and NG who routinely represent and promote exotic and stunning natures, often located in remote and (seemingly) undisturbed locations.

**New Zealand nature**

Nature websites assigned to one particular nature content theme notably buck the trend towards multi-zone natures. More than any other geo-zone, the 55 PiN websites represent a natural world which is local and familiar; 75% of these PiN websites include New Zealand nature.

---

110 This number refers to the 11 rainforest sites which were *actively selected* by students rather than the total number of rainforest images which resulted (see Hopetoun Falls discussion). Including the Wikipedia-nature image of Hopetoun Falls (selections ‘by default’) increases this figure from 11 to 84.
Zealand nature locations. As suggested earlier, this figure is perhaps not surprising. The PiN category implies direct interaction with the natural world and, as the students are in New Zealand (and many of the family homes are New Zealand) it is understandable that these nature experiences would be derived locally.

In the end, the geo-zone findings are inconclusive. Local New Zealand nature locations (selected by 15% of all students) and also other identifiable locations (selected by 5% of students) situate nature ‘somewhere’ for a percentage of students. For most students, however, nature (as articulated online) is associated with an indeterminate, ‘everywhere’ global natural world. And while the holistic turn is evident in much of this global nature content (most notably those sites with the classic rainforest and waterfall motifs) this is not the whole story. Many other sites include portrayals of humans within this everywhere nature space; humans responding to a vulnerable natural world which is admired for its beauty and variety and also something to be valued and cared for, by and also for humans.

The following section revisits this predominately global nature content, now from the perspective of different sub-population groups. This section re-examines this content from the perspectives of gender, ethnicity and family home.

8.2.3 Content and sub-population differences

Gender

Almost 70% of responses were completed by young women and 30.5% of responses were received from young men. This 70:30 gender balance was not consistent across all nature themes, however, and gender preferences (to a greater or lesser extent) were evident in all seven themes. This was discussed in the previous chapter and is revisited here.

Buijs and Elands (2013) suggest that gender has little influence on views of nature but three nature content themes appear to be slightly more popular with young women than young men, on a percentage basis. Most notably, 80% of all eudaemonistic, PiN websites and 77% percent of the BaRN sites (which echo the Arcadian and wilderness traditions) were selected by female students. This latter statistic is anticipated in other studies which examine nature and gender. Pointon (2013) argues that girls favour ‘emotion and beauty’, while van den Born et al. (2001) suggest that, when interviewed, women “ascribed a
higher degree of naturalness than did men…to arcadian nature” (p.73). Closer to the overall female: male ratio was the 75% female: 25% male CARES selections, suggesting that when it comes to caring about or for nature, gender appears to be less significant.

Conversely, four nature content themes were associated with more young men than young women, again on a percentage basis. Two of these themes (NI and EaSN) show a slight male gender bias; NI websites were chosen by 34% of young men and EaSN by 36%. In addition, two much less popular nature content selections also indicate a male gender bias, but significantly this bias is now numerical. GtN websites (online portals) were selected by just 21 students, 62% of whom were male. Similarly, just 13 websites selected were themed as CoN and again 62% of these websites were chosen by young men.

While it may be a cliché, it does appear that young women’s ideas of nature—as shared through the content selected—incline more towards representations associated with the beauty of nature and the need to care about the natural world. While young men, who also share these ideas and ideals, also demonstrate ideas which are more about understanding the natural world and they also display less resistance to culture in nature (see figure 53).

![Figure 53 Nature preference by gender (%)](image)

**Ethnicity**

Almost 70% of student respondents were New Zealanders of European descent. This was by far the largest ethnic group and their nature selection choices largely reflect the nature choices of all 504 students, as shown in figure 54 (below).
One noticeable difference between the selections of these two groups is the stronger interest in EaSN (the grey bar), as chosen by ‘all students.’ This appears to be the result of increased NZ Asian and also Asian interest in media nature; 22% of the 49 NZ Asian selections were EaSN and an even higher 26% of the 43 non-NZ Asian selections were EaSN. This nature theme was less popular with other groups, in particular Māori and Pasifika students. Only two of the 17 selections by Māori students were EaSN and just one of the nine Pasifika students chose this stunning media nature content. Preferred nature content by ethnicity, excluding the large NZ European cohort and also the five New Zealanders (ethnicity undetermined) is shown in figure 55.111

![Figure 54 NZ European nature choices contrasted with other](image)

![Figure 55 Nature content by ethnicity (%) exc. NZ European and New Zealander](image)

111 Non-NZ categories (including European, Asian and other) are not strictly ethnic categories but these groups are clustered here for the purposes of comparing responses.
Notable differences in the selections of these different (smaller) groups, whose numbers range between nine (Pasifika students) at the lower end, to 43 Asian students and 49 NZ Asian students, at the higher end, include:

- CARES is the most popular nature content choice across all groups.
- None of the 21 non-NZ European students chose either a GtN or PiN website.
- No CoN websites were selected by Māori students.
- No NI websites were chosen by Pasifika students.
- NZ Asian students prioritise not one, but three nature themes (CARES, BaRN and EaSN) and non-NZ Asian students, two themes (CARES and EaSN).
- BaRN websites were most popular (on a percentage basis) with NZ Asian students. 24% of all NZ Asian students chose BaRN websites.
- PiN websites were chosen by just four of the seven groups (Māori and Pasifika students, non-NZ Asian and non-NZ other students).

Despite the fact that the number of students within each of these categories is relatively low, there appears to be some differences between the various groups, in terms of the nature content selected. More work would have to be undertaken in this area, however, before any strong assertions could be made. And generally speaking, the students who identified themselves with these ethnic (and wider) groups—all of whom are living and studying in Dunedin, New Zealand—show more points of similarity than difference in terms of the content selected. So, while the nature content findings from the 347 New Zealand European students cannot be readily compared with those of these much smaller groups, it does appear that CARES content—representing caring about or caring for nature—is the most popular choice for all students.

**Family home**

The majority of students identified their family home as either urban or rural; just three students indicated both locations. Only the 501 students who claim to live in urban or rural locations, either within or beyond New Zealand, are represented in figure 56, below.
Sixteen percent or 80 of these 501 students indicated that their usual family home is rural. A much greater number of students (421 or 84%) indicated that their families are urban dwellers, either in Dunedin, elsewhere in New Zealand, or overseas. Again these widely differing rural:urban figures are not readily comparable, although several general observations are possible. The level of interest in the most popular CARES websites is similarly high for both groups. There are differences, however, with regard to the selection of other nature content themes. Most notably, websites themed as NI and BaRN appear to be more popular with urban dwellers, while for rural dwellers, EaSN and PiN websites appear to be more popular nature choices. Again, further work would be required around these differing urban: rural emphasise before any strong assertions could be made about how ideas of nature may be influenced by domicile. As suggested by Pointon (2013), in her study on young people’s conceptions of and relationship with nature:

…young people’s experience of and relationship to nature may well be influenced by their locational context, although this is not as straightforward as merely their proximity to the countryside…this would be a fruitful area for further research (p.14-15)

The focus of this chapter now shifts from the seven nature themes which emerged from the websites which were chosen by the students, to examining the make-up of the websites themselves. These sections examine the relative social media-ness of the sites and also the authority, i.e. those responsible for the generation of the website content. Analysing the websites as containers of content adds a further layer of complexity but also understanding in terms of how these websites may (or may not) contribute to the realisation of new or changing ideas about nature in the twenty-first century.
8.3 Nature website container: peeling an onion

This study explores young adults’ ideas about nature, as realised on Web 2.0. Social media underpin and drive this study, as they encompass technological affordances not previously associated with earlier media; most notably the user’s ability to generate and share content. While the nature content selected by the students remains the primary focus of this study, there is value in examining two additional study components which unexpectedly emerged; namely the nature content containers (much of the nature content which was shared appeared on websites other than social media) and also the source of the nature content shared, i.e. user versus professionally-generated content. This is a bit like peeling an onion:

The red outer layers represent the nature content selected by the students, the students’ nature ideas (the seven nature content themes presented and described in chapter seven).

The pink inner layers represent the nature content containers, as either social media/Web 2.0 or static websites more characteristic of Web 1.0 (discussed below in 8.3.1).

The white inner core represents the authority or source of the nature content generated, user-generated versus professionally-generated content (discussed below in 8.3.2).

It is important to reassert that while sections 8.3.1 and 8.3.2 attend to the two inner layers of the onion (nature containers and authority), the primary intention of this study is to identify the nature content which approximates the students’ own ideas about the natural world, as realised online. The fact that the nature context was not as was reasonably assumed (social media can mean different things to different people) does not undermine the research approach or the findings from the study. Instead, this dynamic, fluid and rapidly changing context adds complexity which must be accommodated and meaningfully incorporated; a rather more challenging task than simply peeling the onion.
8.3.1 Container social media-ness

A key intention of the online questionnaire was to capture students’ ideas about nature, particularly as these ideas are portrayed through social media sites such as Facebook, YouTube and other UG sites which contain open, unbounded and endlessly changing representations of the world, including the natural world. When analysed, this content (together with the students’ observations about why these sites present adequate representations of nature for them) provides an insight into young adults’ ideas about nature. What was not anticipated, was that the nature sites which were chosen would include not only social media but also other websites which afforded few opportunities for interactivity or the sharing of content, i.e. sites more readily associated with Web 1.0. Many students gravitated to what are, in a sense, conventional websites; those produced by media, professional and quasi-professional agencies. More than half of the nature content which was selected by the students appeared on websites other than social media. While this is not something which was flagged in the original research questions, this aspect thrust its way into the study and is worthy of further attention and consideration.

Internet, World Wide Web, Web 1.0, Web 2.0, social media and more…most users don’t know or even care about the distinctions between these various concepts which are often used interchangeably. These differences may be of little interest to the user who can simply choose the application or tool which best suits his or her needs at that time. However, in terms of understanding the potentials for different ‘natures’ (as shared online) the affordances associated with social media—in particular, the ability to generate and share new and changing natures—are what drives this Nature 2.0 study.

Social media characteristics and classification

Chapter five presented an overview of the new media environment, including Web 2.0 and social media. It was noted that researchers working in this area have variously defined and categorised social media in accordance with their differing research interests, subject disciplines, theoretical approaches and methodological frameworks. Not surprisingly, this has resulted in a variety of working definitions for social media which range from the precise (OECD, 2007), to the impossibility of defining this ever-changing concept and/or suite of applications and tools:
In our view—and as used herein—Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content. However, although most people would probably agree that Wikipedia, YouTube, Facebook, and Second Life are all part of this large group, there is no systematic way in which different Social Media applications can be categorized (A. M. Kaplan & Haenlein, 2010, p. 61).

Despite this assertion, Kaplan and Haenlein (2010) do indeed (like others) categorise social media and invariably these classifications and typologies situate ‘the user’ at the centre (Gerlitz & Helmond, 2013; Regis, 2012; Salmons, 2012; Shao, 2009). The approach adopted in chapter five of the current study was to address social media by platform, broadly grouping applications within one of four key categories: (1) blogs and wikis, including Wikipedia; (2) folksonomies and content-sharing sites, in particular photo-sharing sites (e.g. Flickr) and also video-sharing sites, such as YouTube; (3) social-networking sites, most notably Facebook; (4) virtual worlds (MMORPGs) and online games, such as Farmville. While this approach may be sufficient at a very general level, it quickly became apparent that a more nuanced approach would be required when analysing the nature websites which were selected and shared by the students. Seven different classification frameworks that systematically categorised social media were examined and tested for re-use within this Nature 2.0 study and four of these studies spoke to the current study interest. Merchants’ (2009) articulation of four social media characteristics (presence, modification, UG content and social participation) spoke most directly to the need to define social media such that a line could be drawn between interactive social media and static websites which enable little or no interactivity or generation of content. Three other studies also influenced the development of a Web 2.0 Typology for the Nature 2.0 study. Kaplan and Haenlein (2010) focus on the ranking of social media sites, something that is evident in the Web 2.0 Typology which was developed (and is described below). Walther and Jang (2012), like Merchant, prioritise the role of the user, now in terms of proprietor and user-generated content. Kietzmann and his colleagues (2011) similarly prioritise the user in their business-orientated honeycomb framework and they also assert the significance of presence i.e. “…extent to which users know if others are available” (p.243). The following section articulates the Web 2.0 Typology which builds on these earlier classification systems and which was used to interrogate the 504 student-selected websites.
Developing a Web 2.0 Typology: social media-ness defined
Four container characteristics or elements were identified which in combination could be used to situate the student-selected websites within a spectrum of social media-ness, from Web 2.0 (social media) to Web 1.0 (static websites). These elements were articulated without prior knowledge of Merchants’ (2009) four social media characteristics, however, there is a strong correlation between the two frameworks. The Web 2.0 Typology elements articulated within the Nature 2.0 study are shown in table 11.

Table 11 Web 2.0 Typology elements

<table>
<thead>
<tr>
<th>Container element</th>
<th>Brief</th>
<th>Description</th>
<th>Action implied</th>
</tr>
</thead>
<tbody>
<tr>
<td>User-Generated Content</td>
<td>UG</td>
<td>User-generated content (beyond just comments) rather than exclusively 3rd party or site-generated content</td>
<td>I/we create content</td>
</tr>
<tr>
<td>Modifiable, Mashable</td>
<td>MM</td>
<td>User-changeable content, can add to, subtract or otherwise change content (beyond just comments)</td>
<td>I/we change content</td>
</tr>
<tr>
<td>Persistence of Identity</td>
<td>PI</td>
<td>Enduring presence of self beyond a single session, recognition of self, ‘repeatedly me’</td>
<td>I think this</td>
</tr>
<tr>
<td>Social Participation</td>
<td>SP</td>
<td>Wide social engagement, highly visible, active ‘comments’ (this might be all)</td>
<td>We think this</td>
</tr>
</tbody>
</table>

Alternatively, the site has very minor or no social media elements

<table>
<thead>
<tr>
<th>Element combos</th>
<th>Description</th>
<th>Examples from 504 sites chosen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widget Only</td>
<td>Social plug-in, widget only: nothing more than ‘like, poke, tweet, share… (added to website)</td>
<td>Just like/share the site</td>
</tr>
<tr>
<td>No element</td>
<td>Non-interactive: no social media elements, static webpage</td>
<td>Just view the site, read only</td>
</tr>
</tbody>
</table>

These container elements were then combined in response to the websites which were selected, resulting in six different container element combinations. Each of the student-selected websites spoke to one of these six website types, situating all 504 websites on a spectrum ranging from Web 2.0-as-strongly-social-media to Web 1.0-as-not-social-media. The six container element combinations are shown in table 12.

Table 12 Web 2.0 Typology

<table>
<thead>
<tr>
<th>Element combos</th>
<th>Description</th>
<th>Examples from 504 sites chosen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web 2.0/social media-ness - from most to least user functionality &amp; interactivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI UG MM SP</td>
<td>Sites with the most ‘social media-ness’; persistence of identity and the creation of user-generated content are important. Content can also be readily modified or mashed-up by the user and it is possible for others to</td>
<td>Amateur nature content on: Facebook, tumblr, Flickr, Pinterest, YouTube, Reddit,</td>
</tr>
</tbody>
</table>
respond to the content, i.e. participate. Behind the site content generation are individuals and informal user groups.

<table>
<thead>
<tr>
<th>PI SP</th>
<th>Third party or professional content on SNS and file-sharing sites e.g. BBC content on Facebook. Emphasis is now on the site owner, rather than the user; more restricted UG content and content modification. Sites may be product-driven (even when the product is nature-friendly). Although users are at liberty—indeed are often encouraged—to add content (typically as comments or simple tags), these sites don’t enable the same user functionality typical of sites like Facebook. Users can like, follow, comment, share, invite friends, ‘suggest an edit’ but the strong visual content is often controlled by the media or other agency.</th>
<th>Third party, professionally generated and managed nature content on any of the above platforms or similar platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG MM</td>
<td>User-generated sites which lack visible individual presence and there is no active social interaction or participation. Representative of early Web 2.0, typified by Wikipedia where content can be readily uploaded and modified.</td>
<td>Amateur nature content mainly on Wikipedia</td>
</tr>
<tr>
<td>MM SP</td>
<td>Sites lack PI and UG (the sites are generated by others and there is limited scope for persistence of identity). These sites can be modified in the sense that users change the way the game appears by playing the game. Social participation is possible, as players interact.</td>
<td>Third party content in online games e.g. Farmville, Garden Panic, Eekoworld and Wolfquest, Minecraft &amp; Elderscrolls</td>
</tr>
</tbody>
</table>

**Web 1.0/static websites—little or no social media functionality**

| WO | Sites which have a social plug-in or widget only (see widget image), typically providing little more than ‘like’, ‘poke’, ‘tweet’ and a link to share on Facebook or Twitter. The ‘real action’ takes place elsewhere, i.e. the website acts as a bridge only; otherwise lacks any social media functionality. | Third party content on professional websites; showcasing videos, images and static photos. Media organisations feature strongly |
| None | Static websites which lack even a social plug-in. Mainly third party, professional websites but also includes web entry pages, e.g. to Skype and Blackboard and also Google search | Third party content on professional websites, showcasing videos, images and static photos |

**Widget:** provides minimal user functionality which is typically added to a webpage after development, rather than integral to the website. The widget enables limited user engagement, beyond linking or sharing the website with others.

---

112 The latter two are closer to virtual worlds and could (arguably) be assigned MM SP PI (virtual worlds do enable PI); Kaplan and Haelein (2010) rank virtual worlds as being the most strongly social media.
Applying the Web 2.0 Typology: revised nature findings

When the above Web 2.0 Typology was applied to the 504 ‘social media sites’ selected by the students it was readily apparent that slightly more than half of these sites could not be categorised as social media. As is evident in figure 58, 51% of these sites (combined orange slices) provide limited or no opportunity for the types of activities associated with social media, namely the inclusion of user-generated (UG) content, the persistence of user identity (PI), the ability to modify content (MM) and/or the opportunity for social participation (SP).

![Figure 58 Nature sites chosen: Web 1.0 (orange), Web 2.0 (blue)](image)

While this finding does not change the nature content which was selected by the students, it was unexpected. Furthermore, this finding is significant as it impacts on the type of nature representations which may be implicated in the construction of nature views. The potential for new or different ‘natures’ changes when the nature representations which are shared are no longer attributable to a community of users, where ideas are openly and freely exchanged, contested and even modified. The question then arises; what nature representations predominate when only those representations appearing on social media are considered (setting aside those websites with limited or no user-generated content or interactivity)? Figure 59 (below) contrasts these two findings:
Revised nature themes

When the nature content on the 250 social media sites only is considered (blue columns), the nature theme profile changes significantly. Two themes—Nature Information (NI) and Beautiful and Relaxing Nature (BaRN)—now show significant increases in popularity, on a percentage basis. Most strikingly, perhaps, the NI-themed content on social media was chosen by 37% of students, in contrast with 20% of the total web selections. This increase is attributable to the high number of Wikipedia selections which also coincide with this particularly texty nature theme. Of even greater interest is the percentage increase of BaRN sites (typically photos and sounds of nature on a variety of platforms), now up from 16% of all websites chosen, to 20% of all social media sites selected. Significantly, as these nature representations are housed on social media sites, there appears to be increased interest in BaRN content when it is the user who is responsible for the creation and sharing of content.

Two other nature themes showed little change when only the 250 social media sites were considered; the percentage of Gateway to Nature (GtN) selections increased only slightly (from 4% to 5%), while Culture over Nature (CoN) choices showed no change, again just 3% of the nature content selections.

In contrast to these slight and significant increases, the three remaining nature themes showed significant decreases in popularity, on a percentage basis, when only the social media sites were reviewed. Pleasure in Nature (PiN), i.e. eudaemonistic nature or ‘me in nature,’ and also the media-centric Entertaining and Stunning Nature (EaSN)
representations now appear much less frequently. The percentage of PiN sites falls from 11% of all websites to just 6% of social media sites, while EaSN sites fall even further, from 17% of the original total, to just 8% of the social media sites selected. Both these results can, at least in part, be explained with reference to the quality and grandeur of the nature content which appears in both themes. This nature content is not easily or readily created and is therefore rarely attributable to the amateur web user, who typically lacks the time, inclination or—most of all—the resources to create such high quality, well-produced and arresting representations of the natural world.

Notably, the CARES sites (Conservation, Action, Responsibility, Education, Science) also drop in popularity when static websites are excluded. CARES websites made up 29% of the original nature selections but this figure falls to just 20% of the social media sites chosen. Here, however, the situation cannot be attributed to the production quality of the websites. While a number of CARES sites may indeed be visually appealing, quality and grandeur were not hallmarks of this nature content theme, regardless of platform. Neither can this shift in popularity be attributable to a link between the nature theme and the web platform (in the way that Wikipedia is thoroughly entangled with so much of the NI content which was chosen). Certainly a significant number of the original CARES selections were associated with nature.com and the majority of these appeared on non-interactive websites. However, many of the CARES sites including, but not limited to, those managed by the Nature Publishing Group, include professional or quasi-professional, rather than user-generated content. This raises the issue of ‘authority’ i.e. who is creating and managing the nature content which was chosen?

The question of website authority goes beyond whether a site can be defined as Web 2.0 or Web 1.0 and focuses on one element in particular: who is generating and sharing content? This is the second prioritisation lens and in many ways this speaks even more directly to the current research interest in Nature 2.0. What drives this study are not questions around identity-making or community building (where most social media scholars’ interests lie) but more particularly ‘the user’ as consumer and also creator and modifier of nature content on the web.

113 Just two of the 45 NPG sites were represented on two separate Facebook sites.
8.3.2 Container authority

Having developed a Web 2.0 Typology and re-analysed the student-selected websites by applying the social media container prioritisation lens, the nature website selections were again revisited, for a third and final time. What triggered this third pass was the realisation that selected sites which appeared to be social media *par excellence* (user-generated, highly interactive) were, in reality, sites which have been developed and which are owned and managed by professional and quasi-professional organisations. For example, the nature content on a number of Facebook sites which appeared to be user-generated (hence reflecting the thoughts and ideas of amateur users) is controlled by third party media and other organisations:

While the interests of these agencies may be benign or even beneficial to nature, they tend to reflect the ongoing concerns of professional, government and other agencies, rather than those of amateur web users. This section on ‘authority’ hones in on those agencies which are behind the generation of content; it contrasts *user-generated* (UG) nature content with the content which has been *professionally-generated* (PG). Notably, both UG and PG content may be available on social media and also less interactive sites, i.e. on Web 2.0 and Web 1.0.

**Nature content generation: professional versus user-generated**

As shown in figure 61 (below) well over half of all nature content selected by the 504 students appeared on websites generated by media and other professional or quasi-professional organisations (red pie segments). Only a third of the nature content selected now appears to be user-generated (green segments) rather than half, as suggested in the
previous section. Thirty-five percent of the nature websites were generated by established media organisations and almost a quarter are attributable to other professional or quasi-professional agencies. These websites may also include a limited element of user interactivity but what matters here is authority; the individuals, groups and organisations primarily responsible for the generation and management of the nature content which is shared.

![Pie chart showing distribution of nature content sources](image)

*Figure 61 Nature content on UG and PG sites (purple searches beyond schema)*

(Web searches, shown in purple, include Google search screens and nature image research clusters.)

**User-generated nature content**

Not all 250 social media sites which were identified using the Web 2.0 Typology contained UG content; just 168 or two thirds of this total contained content which was user-generated. And significantly, 101 of these selections included NI-themed content from just one site: Wikipedia. In addition, seven websites which had been classified as Web 1.0 included UG content. In total, 175 of the original 504 student-selected websites—just 35%—included nature content which could be attributed to amateur web users.

When the Web 2.0 Typology was applied and the nature content on social media only was examined, two nature themes (Ni and BaRN) showed significant increases in popularity on a percentage basis. Now, when the UG authority lens is applied to the 175 UG-only sites this trend not only repeats, but the increases become even more pronounced (see figure 62, below). NI content was chosen by 20% of all 504 students. When social media only are examined, this percentage increases to 37% and this figure is even higher when only UG content is considered; 54% of all UG content is NI. This figure, as previously noted, is largely attributable to the high number of Wikipedia selections which also
coincide with this texty nature theme. BaRN selections also show an increase (on a percentage basis) when the UG authority lens is applied. Again, the shift is significant, from 16% of all website choices, to 20% of social media choices, to close to 30% of all UG content selected. This reaffirms the earlier observation that there is increased attention in the BaRN themed content when it is ‘the user’ who is behind the creation and sharing of the nature content.

All other nature content themes show a marked percentage decline when only UG content is considered. The percentage of CoN and also GtN sites fall slightly; CoN from 3% of all websites to just 1% of UG sites chosen and GtN sites from 4% to just 1.5%. The percentage of PiN sites declines further, down from 11% of all websites to just 6% (coinciding with the finding when social media only are examined). Most significant of all, however, are the percentage declines in the EaSN and CARES themed sites. The media-friendly EaSN sites (not surprisingly) fall from 17% of the total websites to zero, i.e. all websites which include entertaining and stunning nature content were produced by media organisations, not amateur users. Less predictably, perhaps, was the percentage decline in the CARES sites. Originally the most popular nature selection (chosen by 29% of students) the CARES websites made up just 8.5% of the total number of sites chosen which were generated by users.

**Professionally-generated nature content**

Media and other professional organisations have taken full advantage of the online environment (including social media) to represent and promote their interests. This
adaptation of media and other groups to the digital environment has been discussed in other parts of this study, in particular: in chapter one, with regard to the emergence of related Nature 2.0 concepts (either realised or suggested) including Conservation 2.0 and Environment 2.0; in chapter three, with reference to conservation and environmental groups and their changing, at times fraught, relationships with the media; and in chapter five, more extended discussion on the commercialisation of social media. The migration of media and other professional organisations online was also discussed in chapter seven, with reference to two nature content themes in particular. These include the popular CARES theme, which is strongly associated with conservation and other nature-minded groups and also EaSN, which is the ‘bread and butter’ of media organisations, i.e. spectacular nature, high production values, exoticism, timeless-ness and placeless-ness.

As outlined, much of the nature content which was selected and shared by the students was generated, not by the user, but by professional agencies; 329 of the 504 websites chosen (65%) include PG rather than UG content. This PG content bias, evident in most nature themes (with the exception of NI and BaRN) is strikingly evident in figure 63:

![Figure 63 Nature content on all 504 websites: UG (blue), PG (orange)](image)

Professional and quasi-professional agencies which generated the nature content which was selected by the students (orange bars) include:

(a) Media organisations: 35% of nature content appeared on websites which were generated by media organisations. These agencies, which account for virtually all the nature content associated with the EaSN theme include the BBC (giants of the nature documentary genre) whose programes are routinely fronted by David Attenborough and
also the Discovery Channel. A number of hybrid print-to-media-to-online groups are also represented. Most notable here are National Geographic and the more scientifically-focussed Nature Publishing Group. Other nature choices (appearing in the EaSN and other themes) were supplied by Huff Post and The Australian. Media games companies, such as Zynga (producers of Farmville) and Fupa (producers of nature and other online games) also provided nature representations which adequately responded to students’ concepts of nature. The majority of these online games include aspects of caring about or for nature and were themed with CARES.

(b) Other for-profit agencies: A further 11% of nature content was created by other commercial agencies such as those promoting travel. These nature representations are primarily associated with the PiN-themed websites; 65% of these sites showcase nature as spectacular tourist and adventure destinations. Ten further for-profit websites (including nature images for sale) are represented in the BaRN theme, while the remaining seven for-profit sites are scattered throughout the other nature themes.

(c) Not-for-profit agencies: 12% of content also appeared on websites which were generated by government agencies, educational institutions, NGOs and other not-for-profit groups (typically nature advocacy sites). The majority of these 63 websites can be associated with one nature theme in particular; a significant 80% of these sites were accommodated within CARES, where the focus is on caring about and for nature. Nine further not-for-profit (mainly DOC) websites were included with PiN, while the remaining four websites were themed with NI and GtN.

Study implications of nature content generation
The authority prioritisation lens shines a light on the professional and quasi-professional groups who were responsible for much of the nature content which was chosen. For those individuals who selected this content, these ideas—or frequently ideals—adequately realised their own concepts of nature. Why the students chose these representations—the majority of which have been produced and managed in accordance with established conventions and traditions, rather than user-generated representations of nature—cannot be known for sure. However, as focus group participant, Carla, noted, “…there’s no point in putting average things on the internet. Like no-one cares…”. The argument that these well-funded, professionally produced and presented nature representations are not only
more visible and discoverable on the web but ultimately that they are more appealing and therefore more likely to be selected by students, is hard to dispute.

More importantly, this authority prioritisation lens shines an even brighter light on an unexpected and surprising research turn within this Nature 2.0 study. Students were asked to select nature content on social media, as this would enable them to articulate their own ideas about nature, using unlimited textual, audio and visual content available within an unguided, boundless and unfettered environment; this point, more than any other, is what differentiates this Nature 2.0 study from others which examine ideas about nature. As with content more generally, nature content on social media is typically user-generated, interactive and ever-changing; content is typically uploaded, manipulated and shared anytime, anywhere and by anyone who chooses to do so. The fact that more than half the students chose a nature representation that was generated, not by the amateur user, but by an established media or other professional organisation is significant. As already asserted, knowing the source of the nature content generation and management does not change the content which was selected by the 504 students. It does, however, have implications with regard to the premise that students would be selecting ideas about nature from a more open and unmanaged environment, an environment where they could participate in the construction of the nature representations which were generated and shared.

The overarching research aim of this study has been to explore nature as representation and young adults’ conceptualisations of nature, as realised online. The second part of this aim has been achieved by using the web as both research environment and research tool. Situating this nature study within this unbounded digital space opens up new potentials for discovery, about how the natural world is represented, viewed and shared. There is no doubt that this is a messy research space and, has been demonstrated throughout this study, boundaries are readily and routinely breached and frameworks contested and challenged. Despite these and other caveats, this study approach has proved fruitful. It has enabled the identification and articulation of seven nature themes which are reflective of the nature concepts of these young, nature-friendly, digitally-active New Zealanders. In the upcoming final sections, these seven nature themes are revisited within the wider analytical context of the dominant cultural nature frames (as Arcadia, wilderness and resource) and also the mass media-ted nature frames (as real and risk) as outlined in chapter three. The free-text comments which support the nature websites are also
8.4 Nature themes and cultural frames: towards broader findings

8.4.1 Enduring nature frames

Three of the seven nature themes which emerged from the 504 student-selected websites—Culture over Nature (CoN), Beautiful and Relaxing Nature (BaRN) and Pleasure in Nature (PiN)—reference one or more of the enduring Western frames, as Arcadia, wilderness or resource. These nature themes and enduring frames are discussed below.

Nature as resource

The CoN theme was indicative of nature for the least number of students, most of whom were male. While the content of this somewhat loose grouping of nature websites is suggestive of the enduring resource concept, the ideas represented on these sites are more about privileging human interests and activities than they are about representing nature as a functional and exploitable resource. However, while a link between these ancient and modern nature framings may be contested, what is more certain is that for the vast majority of the study participants, website content which prioritises CoN is not indicative of nature. For these young people (regardless of gender, ethnicity or home location), this human-centred nature view is of decreased or even marginal significance today.

Nature as Arcadia and/or wilderness - classic nature

A closer link can be made between the enduring Arcadia and wilderness framings (either separately or more frequently in combination as classic nature) and the BaRN and PiN themes. The BaRN theme, in particular, with its emphasis on the beauty and purity of nature—through both static image and sound—has the most obvious and direct connection with the Arcadia and wilderness frames. These classic cultural natures have deep roots in the West, as is evident in art, literature, photography and more recently in mass-mediated representations of the natural world. The BaRN representations reflect these Arcadia and wilderness traditions, at times as distinct from one another, but more generally here in combination. The characteristics of the wilderness tradition, with its emphasis on
dramatic mountain ranges, dark forests and untamed rivers now merge with the gentler, domesticated, cultural landscapes which are more typically the hallmark of the Arcadian and picturesque. This blurring of traditions is in itself unremarkable, indeed different writers have and will continue to use the Arcadian and wilderness concepts slightly differently, as is evident in the literature (Buijs, 2009; Schama, 1995). In the current study context, however, the point is that the timelessness and placelessness of many of these classic representations, in combination with the desire to represent a largely unpeopled nature which is beautiful, bountiful and harmonious (evident in both the websites which were chosen and comments in support of these websites)\(^\text{114}\) draws on these enduring and undeniably significant Western nature traditions.

The PiN theme is also implicated here, although the emotional or even spiritual emphasis is now tempered with a more grounded physicality by the inclusion of ‘me (active) in nature’. And significantly, while nature’s purity in the West, otherwise described as the holistic turn, has long been identified by those writing on the human-nature connection, the ‘eudaemonistic turn’ is much less evident in the findings from human-nature studies.

Together these two nature themes–BaRN and PiN–were representative of nature for more than a quarter of all student survey respondents. And while ethnicity had little or no influence, significantly more young women indicated that Beautiful and Relaxing Nature or Pleasure in Nature images aligned with their own ideas about the natural world.

\section*{8.4.2 Mass mediated nature frames}

The Arcadian, wilderness and resource nature frames endure in the modern world through the lens of mass media, in particular through television and film. Media drama and advertising routinely exploit the classic images of nature, using these cultural ideas—or more importantly ideals—to create a sense of place or person or to sell products that may have little or nothing to do with the natural world that is represented on-screen. And, it could be argued that the eudaemonistic turn that is a key feature of the PiN theme, is a

\footnote{Notably, while many of the comments suggest nature as beyond human influence, the majority of nature representations shared show a tamed nature, i.e. images and landscapes which are, in part at least, the result of human influence. This is part of a wider meta-narrative that is discussed below.}
strong characteristic of media advertising; most notably in advertising associated with the sale of high-end products such as luxury cars and expensive perfume.

Two further website themes were identified which speak directly to the nature frames enabled and promoted by the mass media. The Entertaining and Stunning Nature (EaSN) theme is closely linked to nature as real while CARES, i.e. Conservation, Action, Responsibility, Education, Science can be readily associated with nature as risk.

**Nature as real (reel nature)**
Real nature is virtually synonymous with the nature or wildlife media; the documentaries, films and also glossy magazines which routinely represent nature as a remote, unpeopled and pristine wilderness, populated with an endless array of charismatic megafauna and high octane action. The EaSN theme, which prioritises visually arresting images of nature while also minimising the presence of all but the most nature-friendly humans, is virtually synonymous with real nature. As the third most popular choice, this typically placeless and timeless natural world is representative of nature for a significant number of students. Sub-population biases are also evident; the EaSN theme is slightly more popular with young men, those of Asian descent and those from rural rather than urban homes. As noted earlier, however, more work would be required before any strong assertions about gender, ethnicity or domicile could be made. While much has been written on the nature documentary and wildlife genres by media scholars with an interest in nature (as discussed in chapter three), *reel* nature as real nature, has yet to capture the attention of those researching people’s visions or images of nature.

**Janus face of nature as risk**
Emerging somewhat later, on a mass scale, is the Janus face of nature as risk. This may be nature *as risk to* humans, either real life catastrophic ‘natural events’ such as Hurricane Katrina or shark attacks or fictionalised dramas which foreground an impending natural disaster or an out of control and threatening monster (typically a non-mammalian thing that swims, crawls, slithers or lumbers). Nature may also be *at risk from* humans. This moves increasingly from the concept of nature to environment, either ‘grey’ issues of global pollution and climate change or the much less dramatic and newsworthy ‘green’ challenges associated with conservation and the management of nature spaces and species. (For more on the grey/green distinction see Van Koppen, 2000.)
The double-sided representation of nature as risk has become a feature of the mass media since the late twentieth century. However, it is humans at risk from nature (natural threats or disasters), together with nature at risk from humans, as the grey environmental issues of oil spills and carbon emissions, which tend to dominate the media. Nature at risk from humans, where the focus is on green environmental or conservation issues is typically much less dramatic, event-focused or newsworthy and as such is much less evident in the media.

The CARES themed websites, with their emphasis on caring about or more actively caring for nature—referenced on a spectrum ranging from the head to the heart—include entangled human-nature connections which most unite and define this theme. And it is this nature theme, which prioritises human interest in and responsibility for the natural world which can be most readily associated with nature at risk, where the focus is on green conservation rather than grey issues of pollution or climate change. The CARES theme speaks to the first part of nature as risk which has come to prominence through the media, as outlined in chapter three and as highlighted in figure 64.

CARES content was selected by almost 30% of students making this caring, region-neutral theme the most popular approximation of nature, regardless of students’ ethnicity or home location (there was just a slight female gender bias towards nature as CARES). This finding was not anticipated. Not only is this green-at-risk-nature theme of limited appeal in the mass media (typically appearing in documentaries targeting those who

314
already have an interest in nature), the concepts of environment or conservation were never used anywhere in the online questionnaire, nor were they raised by the facilitator during any of the focus groups. In the previous chapter it was suggested that CARES websites may have been popular as this content is increasingly visible in the new media environment; an environment which prioritises websites featuring enhanced technical affordances, including user connectivity and interaction. While this may be true, it seems unlikely that this is the whole story, or even that other less nature-sensitive sites are not similarly available. What seems more likely is that this nature theme was chosen as it reflected, quite simply, ideas or conceptualisations of nature for these young people. As was stated earlier, for these young New Zealanders at least, the CARES websites signal the importance of human engagement with nature, such that a valued and vulnerable natural world endures. Nature-as-vulnerable and humans-as-responsible appear to be thoroughly and inextricably bound. And once again, this finding has yet to be evident in studies which attend to people’s visions, concepts or ideas about the natural world.

8.4.3 Overarching nature metanarrative

Outside nature frames
Two other nature themes which emerged from the websites—Nature Information (NI) and Gateway to Nature (GtN)—cannot be readily situated within the context of either the enduring nature frames (as resource, Arcadia and wilderness) or the more recent, but pervasive mass media-ted nature frames (as real and risk). Both the NI and GtN themes are predominately text-based. However, while the GtN websites are little more than online portals to nature content, the NI sites include varied and rich descriptions about the natural world. What most distinguishes this latter content in particular, is the prioritising of factual information and the lack of visual framing or heightened experience through visual content (although supporting images do appear throughout the text). Each of the NI and GtN themes show a strong male gender bias and both themes represent nature as region-neutral. Most significant of these two themes is, of course, NI. This was chosen by a fifth of all students, making it the second most popular selection for this group of young people. And notably, the majority of the NI content shows nature searches on Wikipedia, a site which, as the students observed in their accompanying comments, is a rich source of information about the natural world.
As suggested, neither the factually-orientated NI nor the portal-oriented GtN theme can be readily accommodated within the enduring or mass media nature frames. More importantly, both contribute to and are reflective of a wider metanarrative. This broader or overarching study finding is discussed in the following and final section of this chapter.

Towards broader study findings

At the heart of this Nature 2.0 study are seven nature themes which emerged from the 504 websites, chosen from within the unbounded digital space that is the World Wide Web. These themes, which are indicative of nature for this group of young New Zealanders, suggest that while certain cultural representations of nature, namely Arcadia and/or wilderness ideals endure in the West others, in particular the more exploitative nature as functional resource, has ceased to be relevant in this context. Other conceptualisations of nature now appear to be significant and these real and risk natures (which are seldom addressed by those attending to visions of nature) owe much to the portrayals of the natural world in the mass media of the late twentieth and early twenty-first centuries.

The findings from this study are, however, ultimately not based solely on the student-selected websites which were themed and analysed. In particular, the students’ free-text online comments in support of these websites contribute to understanding of the particular nature content which was chosen. And significantly, while this nature content shows diversity and was themed accordingly, the associated comments (which are also rich and varied) show a remarkable degree of similarity and consistency across all website selections. Regardless of whether the website content was themed as the nature-sensitive CARES or the more human-centred CoN, a recurring suit of comments was associated with almost all website selections. These comments (many of which appeared in association with the website themes which were presented in chapter seven) respond to five overarching themes which incorporate both abstract and more concrete or physical elements. In their free-text comments, the students address:

- **Nature’s richness**: beauty, bounty, interconnectedness and variety;
- **Nature’s purity**: truthfulness, untouched state and remote condition;
- **Nature’s vulnerability**: from humans and human impact, conservation concerns;
- **Nature contact**: value of interacting with and experiencing nature;
- **Nature knowledge**: value of learning about and sharing knowledge about nature.
The students’ comments, made in response to the statement, ‘this is nature [for me] because...’ echoed many of the comments which were also shared by the focus group participants. These comments indicate a wider meta-narrative, namely a general nature friendliness, interest and even sensitivity and responsibility towards the natural world. And, significantly, by appearing in association with all seven nature themes which emerged, these comments highlight the ‘nature-friendly similarity’ that binds rather than divides these different nature representations-as-conceptualisations of the natural world.

This overarching nature-friendly narrative only comes to the fore after analysis of the online textual and also verbal (focus group) comments, which support these nature website selections. Guided only by the nature website selections (quantified, themed and analysed) it would appear that the students respond to various and different concepts of nature, as these ideas are represented at a cultural level. While a significant and justifiable finding in itself, this is only part of wider and more general findings which emerge when other datasets, in particular the comments associated with these nature themes, are incorporated into the analysis. When this bigger picture is sketched, the seven nature themes do not change. What does change are the broader human-nature findings which emerge. This references the value of applying a mixed methodological approach, which enables different datasets to be combined to enhance understanding about ‘who, what and why,’ such that a clearer picture can emerge about how these young people think about nature in a complex and changing world. Integrating different datasets is a key strength of the current study approach. Integrating multiple datasets makes it possible to see the wider metanarrative which emerges, around a more nature-friendly, sensitive, even responsible or entangled human-nature connection.

In the final chapter, the broader findings from this Nature 2.0 study will be situated within the wider human-nature research context. This chapter also presents a number of conclusions and also recommendations for future research into the human-nature connection within what is an increasingly complex, ever-shifting, online-offline world.
CHAPTER 9

NATURE 2.0 STUDY FINDINGS AND RECOMMENDATIONS

9.1 Introduction

This Nature 2.0 study has examined cultural representations of nature (on canvas, in print and on-screen) together with individuals’ ideas about the natural world, as captured through visions, images and concepts of nature research. This combined interest has required that the author peer into and borrow from a variety of disciplines which examine the human-nature and also the human-web connection. This expansive examination of the research literature has provided a strong foundation from which to explore the dual interests of this study—into young people’s conceptualisations of nature and cultural representations of nature which coincide with these ideas about the natural world—simultaneously, using the web as both research space and also research tool.

This cross-disciplinary study has been responsive to a number of disciplinary perspectives but, importantly, it is beholden to none. Furthermore, this Nature 2.0 study has not sought common research ground to enable a new ‘grand theory’ (Szostak, 2012, p. 12) but rather to find common ground which will encourage further enquiry, expose new connections and new synergies for understanding. The research aim has been to bring together knowledge and to integrate insights; to create a new way forward.

Ultimately, the research ambition has been ‘cognitive advancement,’ i.e. to produce “an understanding that is new and more comprehensive” (Repko, 2012, p. 154). The aim has been to describe a relatively new phenomenon and to propose a new and different way of understanding what has been described as Nature 2.0. This research activity has proved challenging but it has also proved to be revealing.

The upcoming sections in this final chapter present and further analyse the findings which have emerged in this exploratory study. These sections also present findings and
recommendations which address the main study aims and also the five key research questions. These sections are:

9.2 **Nature as representation**: asserting the need to combine related research interests (across disciplines) and the significance of five rather than three dominant cultural/mediated natures (RQs one and two);

9.3 **Conceptualisations of nature**: noting the research gap in visions of nature research (media and young people) and highlighting the findings from the survey component of this Nature 2.0 study concerning the new biophilia, nature as environment and growing human-nature entanglements (RQs three and four);

9.4 **Web 2.0 and user-generated nature**: assessing professional nature interests online and challenging *prosumption* when nature rather than culture is foregrounded (unanticipated study component);

9.5 **Human-nature research and the new media environment**: asserting the need for clarity when researching online; challenging existing research approaches and boundaries (RQ five);

9.6 **Human-nature research and future interests**: in response to the current study findings and also the wider context of human-nature research in an increasingly media-centric world (RQ five).

### 9.2 Nature as representation

In a spirited attempt to better understand contemporary ideas about nature at a cultural level, the author of this Nature 2.0 study has taken on the double challenge of examining both conceptualisations of nature, as articulated online by a group of young people and also the predominant cultural framings of nature; mediated representations which have informed and continue to inform ideas about the natural world. In so doing, this study has responded to the first part of the main research aim which is, ‘to explore nature as representation…’. This study has also addressed the first two research questions:

RQ1: How has nature been historically constructed and represented in the West; what are the dominant and enduring cultural frames?

RQ2: How has nature been represented in mass media (in particular TV and film); what nature themes are evident?
The upcoming section briefly revisits the three historic and enduring representations of nature and the two more recent media-enabled nature framings which have been identified in the literature. This section is then followed by reflections on these representations and recommendations about how nature might be framed in future human-nature studies, towards more enriched understanding of how nature is represented and potentially also conceptualised in the modern, media-centric world.

9.2.1 Enduring and mass media-ted nature themes

Enduring nature representations: Arcadia, wilderness and resource

This Nature 2.0 study has attended to the three iconic and most widely researched Western framings of nature: as Arcadia, wilderness and resource. These recognisable enduring representations have been part of the Western cultural canon since the earliest period of documented history. And, as suggested, these cultural framings continue to dominate the literature on nature as representation, regardless of disciplinary or subject interest. Art and cultural historians have written extensively on the genesis, artistic and wider socio-historical significance of the classical Arcadian and the more recent, but equally pervasive and enduring, wilderness ideal. While researchers in art and cultural history and also other disciplines—including media and nature studies—may dispute the priority or distinctiveness of these two idealised natures, few would dispute the significance of these ideals, both historically and in the modern world. Classic representations have also readily adapted to mass media (notably TV and film), then to the unbounded digital space that is the new media environment, as evidenced in the findings from this Nature 2.0 study.

While less palatable to the sensitivities of many of those in the Global North today, the third enduring representation to routinely make up the triumvirate of human-nature research interests is nature as resource. The idea of nature as functional, exploitable and even inexhaustible resource is foundational within the West and representations of dominion over nature were once idealised, as the classic ideals continue to be today. Since the mid-twentieth century, however, overt representations of the exploitation of nature have increasingly become a cause for concern rather than celebration and these changing human responses to the natural world are less evident on-screen. And notably, as there has been a shift away from these resource-based nature representations, so too does the idea of ‘nature as resource’ appear to be of reduced or even no significance, when it comes
to conceptualisations of nature; at least this is the situation for the overwhelming majority of students who participated in the Nature 2.0 study.

**Mass mediated nature representations: real and risk**

The classic and resource representations of nature have readily transferred to the mass media, where they are pervasive across media genres. In addition, two further natures, as real and as risk, have been enabled by and are promoted in the mass media. These representations are associated with two genres in particular. Real nature has its genesis in the early static image and real nature continues to be most strongly evident in wildlife films and nature documentaries. Nature as risk rose to prominence somewhat later in the twentieth century, primarily through the news genre. Media scholars with an interest in representations of the natural world have attended to these modern screen-mediated natures which have been discussed throughout this study. Both real nature and nature as risk appear to be significant for the students who participated in this Nature 2.0 study.

### 9.2.2 Five representations of nature matter - not three

Those writing about representations of nature come from various disciplines, including social and cultural history and mass media studies, and the three iconic representations of nature— as Arcadia, wilderness and resource— have been extensively researched within and beyond these disciplines. Those writing about visions, images or concepts of nature have responded to these historic nature representations, which have been used to situate people’s visions, images or concepts of nature today. Two, more recent media-enabled representations of nature— as real and as risk— have also received considerable attention from mass media scholars, in particular those attending to the documentary and news genres. To date, however, representations of nature as real or as risk have yet to inform research into visions, images or concepts of nature.

While representations are not synonymous with conceptualisations (as visions, images or concepts) of nature, as has been demonstrated throughout this study, the two are thoroughly entangled. As such, it is suggested that there is value in borrowing from one of these areas of study where this informs or promotes understanding in the other. It is argued here, that there are **five significant cultural representations of nature**, rather than the three representations which are so frequently and widely discussed by those
aiming to understand people’s ideas about the natural world. Looking to visions of nature studies (it is suggested that) one model in particular has value in both areas of research and this can be borrowed, repurposed and potentially even extrapolated within the representational domain. Figure 65 re-presents Buijs’ (2009) model of the three dominant ‘Historical views of nature’ (the grey upper half which initially appeared in chapter four of the current study), now in combination with the two ‘Modern representations of nature’; the blue lower half now inserted into this model. Buijs’ model (2009, p. 55)–now borrowed and repurposed here–was originally used to show the connection between nature visions (as views), characteristics (e.g. naturalness) and human values (such as ecocentric or anthropocentric). Empirically testing nature visions and linking these with other characteristics or human values is beyond the scope of this Nature 2.0 study. However, it is argued here that the evidence which has been presented in the current study–which has combined interest in nature as representation and conceptualisation–is sufficient to suggest that these connections have validity and are worthy of further research attention.

![Figure 65 Buijs (2009) Historical views now with Modern representations of nature](image-url)
Visions of nature researchers already recognise the significance of Arcadian, wilderness and resource representations of nature as these inform human concepts, ideas and visions of nature. As has been evident throughout this Nature 2.0 study, however, these enduring cultural nature views may no longer have the hold on the nature imaginary that they once did. And while there is value in continuing to incorporate classic and even resource representations of nature within these visions of nature studies and conceptual frameworks, there is even greater value (it is argued here) in challenging these representations to ensure they continue to be relevant today. Furthermore, other cultural representations of the natural world, enabled and promoted by the media are now significant and are deserving of research attention by visions of nature scholars. These representations of nature, as real and the double-sided nature as risk (in particular, nature at risk from humans), may not have the historical pedigree of the iconic Arcadian, wilderness and resource representations, but as this Nature 2.0 study has highlighted, these appear to have greater legitimacy, potency and value in terms of how those in the Global North think about nature today.

9.3 Conceptualisations of nature

The second part of the main research aim is, ‘to explore…young adults’ conceptualisations of nature in the interactive, online world–Nature 2.0’. Towards this aim, two further research questions have been addressed in this study:

   RQ3: How is nature conceptualised in the modern world; which cultural nature visions, ideas or concepts prevail?
   RQ4: Which representations on social media typify ‘nature’ for young adults; does Web 2.0 introduce particular or changing ideas about the natural world?

The particular focus of this study has been on the relatively stable cultural concepts of nature, ideas which reflect dominant and enduring representations of the natural world. Cultural concepts of nature are typically gathered using distanced, quantitative methods (such as questionnaires and scorecards) in contrast to the qualitative methods used to gather the more fluid concepts of nature which change in response to changing circumstance. Significantly, however, while an online questionnaire was central to this
Nature 2.0 study and used to gather quantifiable results about young adults’ ideas about nature, the information which was gathered is uncharacteristically ‘open’. The open aspect of this study is discussed in section 9.5. First, however, attention is drawn to young adults, as the focus of visions of nature studies, and the seven nature themes which emerged in this Nature 2.0 study.

9.3.1 Students, concepts of nature and emergent nature themes

Young adults and concepts of nature studies
Young adults, approximating the 18-20 age group which were the focus of the current study, are rarely included in studies which examine visions, images or concepts of nature. The drivers of those most actively researching in this area (most notably conservation interests and practices) mean that any population analysis tends to focus on different adult populations in terms of gender, urban/rural location, culture and expert versus lay knowledge (Bang et al., 2007; Hovardas & Stamou, 2006; Verbrugge et al., 2013). Vanden Berg et al. (2006) do address both young adults and concepts of nature in their study with university students, however, the few studies which examine non-adult populations and concepts of nature are more likely to focus on younger age groups. For example, Pointon’s (2013) study on school children’s nature conceptualisations and environmental worldviews and Nevers et al. (2006) study on nature visions and value orientations of German children and adolescents. Furthermore, when attention does shift to younger populations, so too does the focus frequently shift from visions or concepts of nature to much more measurable knowledge, attitudes or behaviours towards the natural world. The research drivers also shift, from nature management to environmental education and behaviour modification. In sum, there are surprisingly few studies by researchers of any persuasion which explore young adults’ conceptualisations or even views, images or visions of nature, where these approximate the interests of the current media-centred study on Nature 2.0.

Young adults in the current Nature 2.0 study
In chapter six, the characteristics of the 504 students who participated in this study were presented and discussed. As outlined, this university student population was made up of young women and men (70:30 ratio), most of whom were between 18 and 20 years when they responded to the online questionnaire. The students came from a variety of
backgrounds (both geographically and culturally) although the majority were Pākehā New Zealanders from urban centres. The demographic make-up of the study population was more diverse than that of either the University or the wider New Zealand population.

New Zealand and Dunedin are routinely represented as being nature-friendly places, as is evident in the New Zealand ‘Pure’ campaign and the promotion of the city as New Zealand’s ‘wildlife capital.’ This particular environment is likely to encourage nature-friendly outlooks and indeed the literature suggests this to be the case (Colmar Brunton, 2013; L. Roberts et al., 2015). In addition, those of European descent are often represented in human-nature studies as being nature-friendly (as discussed in chapter four). And indeed, the Pākehā New Zealanders in the current study, together with other locally-resident ethnic groups (and the families of many of those studied), appear to be similarly well disposed towards the natural world. This is evident in the students’ reported family interest in nature, in the students’ own interest in and engagement with nature-related activities and also in the many comments in the online questionnaire and also the observations shared during the focus groups.

In terms of social media, virtually all students indicated they were active in this space and their levels of online engagement and activity are comparable with, if not higher than, those both nationally and internationally. Students also appear to hold conflicting outlooks, in response to media and nature. While half of all students indicated they would be happy to experience nature either with or without computer technology, fewer students supported this assertion when asked to comment on the potential benefits or dangers of nature experienced via social media. So while the students were well-connected online this did not mean they were unaware of the likely consequences of this behaviour, for both themselves, others and the natural world. In fact, many of the students’ comments indicated a very real understanding of the issues and concerns that already occupy those examining mediated contact with nature in the modern world.

Nature themes which did not emerge

Chapter five explored the new media environment in general and with particular reference to nature and how the natural world is re-presented within this inherently social world. As noted, with the exception of environmental/conservation interests and activities (particularly in association with user power and interactivity), studies in this area are still
limited. Research interests which are now evident typically focus on the user in this interactive space (referencing ‘uncut’ nature, mash-ups, funny animals and memes) or the discussion moves beyond the digital, to encompass the wider human-nature-technology discourse (where genetics, robotics, hybrid objects and notions of the cyborg come into play). These two areas of interest and focus of research attention–user-generated natures and technologically-orientated culture beyond nature–were noticeably absent from the nature content which was selected and shared by the 504 students. These ‘new natures’ which have been the focus of interest for those attending to nature at the human/nature and also technology/nature intersects are revisited briefly below, together with a third nature which might be described as the antithesis of the content which was chosen; nature as messy, threatening and intrusive.

**Nature as messy, threatening and intrusive**

"For me, nature is something you look at through glass, as I am doing now"  
(Gekoski, 2013, p. 27)

"Nature gives us scurvy, rickets, buckteeth and chilblains. That's on a good day"  
(Barreca, 2013, p. n.p.)

Neither Gekoski nor Barreca are academics in any field of nature study. Both, however, articulate an idea of nature which was noticeably absent from all 504 student-selected websites, online comments and focus group observations. These writers articulate a counter idea which is not sympathetic to an all-good, ever-sanctifying, health-giving nature (the over-arching metanarrative which emerged from the student responses), but one which keeps nature ‘at arms’ length.’ Nature may have positive elements and still be enjoyed by people, for example, as beautiful sunset (something Barreca concedes she appreciates from her deck) but it is culture, rather than nature that matters. Negative framings of nature as threat or as dangerous to humans was discussed in chapter three within the context of nature as risk. This double-sided representation encompasses nature at risk from humans and also nature as risk to humans. And it is the latter view of nature as boundary-breaching danger, disease and disaster which is most frequently the subject of mass mediated news. However, when all the websites, comments and additional focus

---

115 Barreca is an English Professor at the University of Connecticut and Gekoski writes for the Guardian.
group observations were analysed this messy, threatening, obtrusive or otherwise negative conceptualisation of nature was nowhere in evidence.

*Nature as uncut, mash-ups, funny animals and memes*

Two user-generated nature themes–representations which are enabled by the interactive, web environment–were presented and discussed in chapter five: nature as uncut (confronting amateur footage which would be edited out of the wildlife film or nature documentary) and humorous nature (including anthropomorphised pets and animal memes). Again both topics are beginning to attract the attention of those with an interest in the new media environment and again it appears that neither raw nor humorous user-generated nature is representative of nature for any of the students who participated in the Nature 2.0 study. One website (YouTube BBC Funny talking animals) and also one comment associated with the professionally-produced video, Python v alligator–“it shows the true conflict that nature is. An everyday battle to survive” [16g]–referenced humorous or raw nature. In both cases, however, the nature which was shared was neither amateur nor were the representations enabled by the interactive web; rather these media-generated natures are the products of mass media, now migrated and promoted within the new media environment. New manifestations of a user-generated natural world as raw, uncut, mash-up or meme were not indicative of nature for any of these 504 young people.

*Nature, hybridity and the cyborg*

In their study on car commercials, Aupers et al. (2012) discuss the ‘contradictory constructions’ of nature/technology theories and they argue the importance of keeping “all too-bold, grandiose and one sided theories… [namely reflexive risk society, holistic re-enchantment of nature and post-biological society] …in a proper perspective” (p.14). While this Nature 2.0 study examines the nature/media intersect rather than the nature/technology intersect, the point made by Aupers et al.–that the big metanarratives can overstate the significance of certain themes or elements at the expense of wider, more complex or nuanced understanding–resonates. And what was most notable in the current study is that while aspects of reflexive risk society and holistic re-enchantment of nature were indeed invoked to better understand the students’ responses to the question, ‘what is nature for you?’ only one student chose a nature representation which (it could be argued) reflected the postmodernist interest in “a technologically oriented culture beyond
nature…” (*ibid.*, p.9). So while post-modernists may continue to claim (after Latour) that “[i]mbroglios of humans and non-humans are becoming increasingly part of our everyday life” (Michael, 2000, p. 25), for the overwhelming majority of students who participated in the Nature 2.0 study, this nature/technology interweave has yet to inform their conceptualisations of the natural world.

The seven nature themes which emerged

The seven nature themes which emerged from the student-selected websites were both anticipated and unexpected. Unsurprising perhaps was the content which was themed as Nature Information (NI) or Gateway to Nature (GtN). This neutral or impartially-framed text-heavy content is indicative of the information-rich web environment in which the question, ‘*what is nature?*’ was posed; an environment where ‘the right answer’ can be readily and easily discovered by anyone. And while this content is difficult to situate within any visual framework, it (together with the supporting comments) absolutely informs the wider narrative which emerged around what nature is for these 504 students.

Also unsurprising were the selections which were themed as Culture over Nature (CoN); a loose grouping of websites, which reflect the cultural context rather than the nature image which is framed. While this content, at best, approximates the well-documented and hence anticipated resource image, what cannot be disputed is the unpopularity of this content. Just as nature as resource is increasingly irrelevant for many (as evident in many of the visions of nature studies), so too was the CoN theme *not* indicative of nature for the overwhelming majority of these young people.

Other well-documented (and hence anticipated) themes which emerged in this study include the Arcadian and wilderness ideals; images of nature which are so familiar in visions of nature research and which have been discussed throughout this study. But while classic content was evident in many of the websites which were chosen these enduring nature images do not appear as they once did. The classical representations of Arcadia with its gentle, domesticated, cultural landscapes and the wilderness image with its emphasis on remote, untouched and dramatic mountain ranges, dark forests and untamed

---

116 The student [49c] chose the BBC News article ‘Taiwan breeds green-glowing pigs’ and wrote “*humans are taking the knowledge we have of nature and creating new natural interactions*”. 328
rivers are now, at times, elements *within* broader nature themes which include additional elements, signalling changing ideas about the natural world. Three nature themes in particular reference the Arcadian or wilderness image but only Beautiful and Relaxing Nature (BaRN) can be readily and easily associated with one or both of these classic ideals. The other two nature themes, Pleasure in Nature (PiN) and Entertaining and Stunning Nature (EaSN) incline towards the wilderness image but both also notably insert new and different cultural elements within this wilderness space. The eudaemonistic PiN theme now adds the human element (me having fun in pristine nature) into what would otherwise be a classic wilderness image. This nature theme is now less about wilderness and more about human well-being in a healthy nature wonderland. The EaSN theme does reference an un-peopled nature of untamed mountains, forests and rivers but now this wilderness becomes little more than a stunning backdrop to highly orchestrated, high octane action provided by a seemingly endless array of animals and birds which fight, mate, hunt and eat their way through the documentary or film. As largely the product of mass media, Entertaining and Stunning Nature may inform about nature, but first and foremost it must *entertain*. As a result, real nature (the first of two modern natures foregrounded in this study) is more about strong narrative, dramatic music scores and high production values than it is about the idea of nature as un-peopled wilderness.

The most surprising nature theme to emerge in this Nature 2.0 study (being notably absent from visions, images and concepts of nature research) was CARES; website content which references conservation, action, responsibility, education and science. This frequently overlapping and entangled nature-sensitive content was chosen by almost 30% of students, making this nature theme the most popular representation of nature for this group of young people. While this theme can be tangentially associated with all three iconic nature images (as Arcadia, wilderness and even resource) it cannot be said to be representative of any of these. Rather, the CARES theme reflects the more recent concept of nature as risk, the second modern nature-framing to be foregrounded in this study. Nature as risk also came to prominence through the media and it reflects, not nature, but the more politicised concerns associated with the environment, together with globalisation and risk society. Furthermore, the CARES theme—which focusses on understanding and caring about and also for the natural world—is most specifically representative of the *green* environment; the much less dramatic and newsworthy conservation component of a wider reimagining of nature as environment.
In revisiting the seven nature themes identified in this Nature 2.0 study several contestable elements, most notably changing Arcadian/wilderness ideals, the reimagining of nature as environment and an increased blurring of human-nature boundaries, emerge. These findings are discussed below within the wider context of human-nature research associated with conceptualisations of nature and also nature as representation.

9.3.2 New biophilia, the environment and human-nature entanglements

The Arcadian image, Dutch research and new biophilia in the West

More than any other research interest, it is the Dutch visions of nature which most closely aligns with conceptualisations of nature, as have been discussed within this Nature 2.0 study. And while these related studies (on visions, images and concepts of nature) are driven by conservation interests they also, significantly, apply quantitative methods to understand cultural visions of nature as Arcadia, wilderness and functional resource. Not surprisingly, many of these studies point to the changed landscape of “moist grassland, bogs, and heathland” (van der Windt et al., 2006, p. 219) and also the artistic and literary landscapes of the imagination, suggesting that these physical and cultural landscapes have informed concepts of nature in the Netherlands (in much the same way as landscape and history have informed concepts of nature in England). As a result, the Arcadian and to a much lesser extent wilderness ideals have dominated and continue to dominate concepts of nature in this part of the world. And, as Van der Windt et al. (2006) point out, these ancient Arcadian and wilderness visions have also now become embedded and stabilised in Dutch conservation practice.

A further significant finding of Dutch visions of nature research is that the ongoing, even increasing, attachment to the Arcadian image is indicative of a wider shift towards a ‘new biophilia’ in the West (de Groot & van den Born, 2003; van den Born et al., 2001; Verbrugge et al., 2013). As outlined earlier, the biophilia concept is premised on an innate human affinity with all life-like processes and the new biophilia is similarly:

…characterized by an almost universal acknowledgement of the intrinsic value of nature and a rich variety of recognized types of nature and ways in which nature is experienced (van den Born et al., 2001, p. 73).
Van den Born and her colleagues suggest there is increasing evidence of this new biophilia or nature-friendliness in their own country. They also suggest that the new biophilia, which is founded on Arcadian, romantic and even spiritual ideals of nature, is now widespread throughout Europe and the USA; a claim which is supported by others writing on human visions of and also values associated with the natural world.

Significantly, all 504 students who participated in the Nature 2.0 study indicated, without exception, that they are positively disposed towards the natural world, regardless of the particular nature theme which was applied to the content which was chosen. This supports the Dutch claim for increasing nature-friendliness or a new biophilia, not just in Europe and the USA, but also here in New Zealand. Regardless of whether the student-selected content was themed as the human-centric CoN, the media-centric EaSN or the more entangled human-nature CARES, the websites which were chosen (in combination with the students’ own comments) are indicative of a strong nature-friendliness or new biophilia. It is further argued here that while all 504 students’ ideas about nature can be accommodated within a nature-friendly model this may be an oversimplification of what is a much more complex reality. The new biophilia may be founded on Arcadian, romantic and even spiritual ideals of nature, however the findings from this Nature 2.0 study suggest that to continue to define this concept with reference to these ideals is to confine understanding of something which is more multi-layered and more dynamic than this concept might suggest. As indicated, all seven nature themes (including the less obviously nature-friendly, CoN, NI and GtN themes) reflect a general nature friendliness. Three of the nature themes–EaSN, PiN and CARES (which together were chosen by more than half of all students)\(^{117}\)–also introduce two further significant elements which indicate particular kinds of nature friendliness; namely pristine nature for human enjoyment and also humans actively caring for and about a vulnerable natural world. The media-centric EaSN theme reflects a remote, unpeopled and highly dramatic natural world which, in reality, has little to do with real nature and everything to do with human enjoyment of a well-packaged, exotic, richly varied and increasingly imaginary pristine natural world. Similarly, while PiN themed content highlights the value of active engagement within a (paradoxically undisturbed) pristine nature space, again this nature is premised on human pleasure; now, however, this is eudaemonistic pleasure or human well-being which is

\(^{117}\) Pleasure in Nature (11%), Entertaining and Stunning Nature (17%) and CARES (29%)
contingent on being *in nature*. While not of the same order, both the EaSN and PiN content suggest that while nature is valued for its’ intrinsic value, rich variety and experiences, it is also valued for the direct pleasure which it affords humans, be they remote viewers or active participants in the pristine nature space.

The CARES theme speaks most directly to this second notable element which situates humans in the nature space, *i.e.* humans actively caring for and about a vulnerable natural world. This theme, which attends to the related concepts of conservation and the green environment, indicates not only an appreciation of nature’s intrinsic worth but also active engagement in the conservation space or, at the very least, the idea that humans have an active role to play in this area. This not only references natures’ value, diversity and experiences (foundational elements within the new biophilia) but, even more significantly, this implicates humans absolutely *within* this vulnerable nature space.

It could, of course, be argued that these entertaining and caring elements are already accommodated in the new biophilia, as described by van den Born et al. (2001), a concept which acknowledges nature’s ‘intrinsic value, rich variety of types and experiences of nature.’ However, (it is argued here) while these elements may be implied in this description, these entertaining and caring elements reposition the new biophilia, situating it within a much more entangled and nuanced human-nature space than this nature-friendly concept might suggest.

**Nature reimaged as environment**

The second notable finding in this study, in terms of conceptualisations of nature, relates to the changing use of language and the reimagining of nature as *environment*. The environment is a much more recent, more expansive and generally more politicised concept than nature and, notably, no questions about either the environment or conservation (as green environment) were included in the online questionnaire. That said, environment and conservation-focussed content appeared in many of the free-text comments shared by the students in support of their nature website selections which appeared in all seven nature themes. Even more notable was the student-selected content themed as CARES. Here, nature reimaged as conservation or green environment was evident in virtually all content shared by the students including the website text and imagery and also the students’ free-text comments in support of this content. And
significantly, this environmentally-focused CARES content was chosen as being indicative of nature for almost 30% of students who participated in the Nature 2.0 survey.

The idea that nature’s meaning may be changing and that this concept is now morphing into the more problem-based environment is rarely addressed in visions of nature studies. However, as outlined in chapter three, since the 1980s social and media theorists with an interest in nature have been examining media representations of nature within the wider contexts of risk society, media discourse and growing concerns for an environment increasingly under threat by the processes of modernisation (Allan et al., 1999; Beck, 1992; Giddens, 1990; Lester, 2010). In Contested Natures, Macnaghten and Urry (1998) documented what they described as the dissolving human-nature boundary and the “invention of nature as the environment” (p.51):

Concerns about nature were perceived as largely distinct and separate…from broader economic considerations of progress and modernisation… However, …a new discourse centred on what has become known as ‘the environment’ was rapidly emerging on the horizon in the early 1960s… (p.44-45).

By peering into this related area of research it is possible to track the genesis and progress of this largely media-centred shift in language, from the ancient and more silent nature to the more issues-based and politicised environment. The significance of this related research in terms of the current findings on students’ conceptualisations of nature is two-fold. Firstly, those writing in this representational space (Lester, 2010; Lindahl Elliot, 2006; Macnaghten & Urry, 1998) identify that this nature-to-environment shift is not new, adding validity to the claim that for a percentage of students, at least, the concept of ‘nature’ no longer has the meaning, import or significance that it once did. This finding is not an aberration or an anomaly in the data, but instead, a tangible reflection of a process which has been underway for more than half a century and which is well documented in the research literature. This evidential aspect also speaks to the second notable point, concerning nature now reimaged as environment. Those undertaking research in this area, routinely address the topic within the context of modernisation, globalisation and the media, with particular reference to the news genre. Their interest is in media and mediated representations, i.e. how the increasingly entangled and contested human-nature environment is framed by the various groups and interests, from within and beyond the media. Consequently, the focus is on representations of nature-as-environment, rather
than on assessing the influence (or otherwise) of these re-imaged framings on people’s thoughts or ideas about the natural world. In other words, while the changing representation of nature to environment is now well documented by social and media theorists, similar attention has yet to be paid to people’s changing ideas about nature–now as environment–in studies attending to people’s visions, images and concepts of nature.

This Nature 2.0 study did not set out to provide evidence for a shift in nature language and importantly meaning in conjunction with this particular terminological turn. However, the move from nature to the more problem-based environment, has absolutely emerged as a significant finding in this Nature 2.0 study. For many of the young people surveyed, including but importantly not limited to those who selected CARES-themed content, nature has now morphed into the environment (notably appearing here as green conservation rather than grey pollution or destruction). Peering into studies which examine representations of nature, both in and beyond the media, has been significant. This research domain has provided a context for understanding the environmental/conservation-focussed natures which emerged in this study. Importantly, working across domains has also provided the opportunity to contribute back to this allied area of research. Exploring ‘what nature is’ in the open unbounded digital space has enabled young people to demonstrate, without influence or prejudice and in a quantifiable way, the significance of this long-recognised and now well documented shift from the ‘nature’ that was… to the ‘environment’ that is now emerging.

**Human-nature entanglements**

The findings from this Nature 2.0 study, with regard to young adults’ conceptualisations of nature, provide support for claims in two significant areas of human-nature research. The student responses indicate overwhelming support for the claim that there is increased and widespread nature friendliness in the West. Notably, however, this support is also tempered (it is argued here) by the need for more nuanced understanding of what has been termed the new Western biophilia. Findings from this Nature 2.0 study have also pointed to a shift in language and meaning, from ‘nature’ to the more problem-based ‘environment.’ This finding supports the extensive work already undertaken in the allied area of research which examines nature as representation, in and beyond the media. Both these findings are noteworthy within the current Nature 2.0 study and also the wider human-nature research landscape. A further finding, which attends to both this increased
nature-friendliness and also to the growing trend towards nature-as-environment, concerns what may be described as an overarching human-nature entanglement. Despite the, at times, contradictory comments in support of the nature content which was shared\textsuperscript{\text{118}} it is an entangled human-nature connection—which extends beyond CARES into other human-related themes—which emerges through this Nature 2.0 study. The nature content which was shared (both websites and comments) represents human interactions with nature, be this interest, pleasure or well-being in nature or demonstrating care or responsibility towards the natural world. Consequently, rather than these wider study findings pointing to ongoing support for nature as Arcadia or wilderness or any other more recent nature theme, there may be more truth in the words of nature campaigner, Bill McKibbon (2006), who claimed:

When I say we have ended nature, I don’t mean, obviously, that natural processes have ceased—there is still sunshine and still wind, still growth, still decay…But we have ended the thing that has defined nature for us—its separation from human society (p.55).

Identification of nature with humans, with human (self and other) interest and understanding, care and even responsibility for the natural world—something which was never anticipated but which was strongly evident in this Nature 2.0 study, regardless of the content which was shared—may indicate that this concept has now shifted; that it’s meaning and value are now primarily realised, not as idealised symbols of Arcadian, pastoral harmony or un-peopled wilderness, but as ‘humanature entanglements’ (Milstein, 2011). This may continue to reference much older and enduring natures but humans and nature have now become thoroughly and inextricably entangled. Perhaps it is this representation, which rejects the binary human-nature construct in favour of “lexical-reciprocal intertwining” (ibid., p.21) which, more than anything else, reflects the cultural meaning of nature for this group of students and potentially others living in the Global North today. As student [117c] observed about her particular nature selection, “this is about the 21\textsuperscript{st} century natural world.”

\textsuperscript{118} Many respondents suggested that nature should be free of human interference, while simultaneously sharing website content which included humans or implied a role for humans in the nature space.
9.4 Web 2.0 and user-generated nature

The previous section on conceptualisations of nature reflected on the website content which was shared by the 504 students. The focus of the current section now shifts to the websites as containers which house this content. The need to reflect on the student-selected containers was not anticipated in the original research design but instead emerged as an unexpected component within this Nature 2.0 study. As a result, this section does not respond directly to any of the five research questions. It does, however, respond to the overarching research aim of this study which is to explore young adults’ ideas about nature within the user-generated, interactive online space. This section briefly revisits why the need to reflect on the nature websites as containers arose and some of the implications of this unexpected research turn for the study findings. This is followed by reflections on Web 2.0 and nature online, with particular reference to prosumption; the web user as both producer and consumer of online nature content.

9.4.1 Web 2.0 and Web 1.0 - who cares and why does it matter?

Students were asked to choose nature content which approximates their own ideas about nature from an interactive website, such as a wiki, blog or online game. By directing the students to social media the expectation was that each student could choose a representation of nature which was limited only by their own interest and imagination. Ideas need not be determined by professional gatekeeping agencies, but may be derived from those shared by amateur users of the web, such as the students themselves. This would enable the selection of not just well-established, familiar representations of nature, such as Arcadia or wilderness, but also other cultural framings which may until now have gone unrecognised or unremarked upon by those undertaking research into visions, images or concepts of nature. Much of the nature content which was selected, however, did not appear on Web 2.0 as this concept is typically characterised. Instead, content appeared on websites which lacked any user-interactivity or functionality which enabled the generation of content; websites which are typically associated with the static web or Web 1.0. In addition, many of the social media sites which were chosen appeared to contain nature content which was generated by media and other professional or quasi-professional organisations, rather than the amateur web user.
While there appears to be no particular reason for not choosing an interactive website, two observations are noteworthy. Firstly, there was no need for students to distinguish between Web 1.0 and Web 2.0; these distinctions can be meaningful to the researcher but they are of little interest to the students who were simply asked to retrieve an online representation of nature. Secondly, it seems likely that the students chose representations of nature on websites that not only reflected their own ideas about nature but also sites which were worth sharing, i.e. visually arresting or otherwise appealing or engaging (regardless of whether these appeared on Web 2.0). This observation is reflected in a number of the free-text and focus group comments and it speaks directly to Facebook’s own motto and advice to web contributors, namely ‘don’t be lame’.

**Why does this matter?**

In response to this research turn, an original Web 2.0 Typology was developed such that the student-selected nature content appearing on user-generated, interactive websites could be distinguished from content on static, professionally-generated and managed websites. Using a matrix of elements\(^{119}\) it was possible to distinguish between the nature content on Web 2.0 and Web 1.0 and the results proved to be significant. More than half of all student-selected nature content appeared on Web 1.0, i.e. on websites which included professionally-generated and managed content and limited opportunities for users to interact with this content.

While assessing the ‘social media-ness’ of the nature websites was informative, it was not the entire story. What was more challenging and ultimately more revealing was the disentanglement of those social media sites which appeared to typify Web 2.0 (e.g. Facebook and YouTube) but which contained little or no user-generated content (often regarded as the hallmark of Web 2.0). This second ‘authority lens’ on the websites-as-containers, now contrasting user-generated content with professionally-generated content (rather than Web 2.0 and Web 1.0) revealed that the number of websites which included amateur content was even lower than anticipated. Just over a third of websites included a nature representation which was attributable to amateur users, while almost two-thirds of content was attributable to media, professional or quasi-professional agencies.

\(^{119}\) Website container elements included: user-generated content (UG); modifiable/mashable content (MM); persistence of identity (PI); social participation (SP); widget only (WI); and no element (none).
Knowing that two out of every three of the student-selected websites contain representations of nature which have been generated by media companies, business agencies, governmental or non-governmental organisations does not change the nature representations which were chosen as being indicative of nature for these young New Zealanders. Nor does this change the seven nature themes which emerged when these websites were analysed, including the significance of the CARES themed-websites, chosen by almost 30% of students. What does change, however, when the source of these nature representations is known, is the potential for new and different nature visions, images or concepts to emerge. Professionally-generated natures are likely to be well-produced and highly appealing but they are unlikely to challenge existing nature imaginaries, effectively blunting or softening the potential for new and different user-generated nature representations to be created or shared. Mass media and other professional organisations have vested interests in the natures they choose to represent (whether for good, bad or indifferent purposes) in much the same way as these organisations have represented and continue to represent nature through conventional media. The shift from the managed mass media environment to the largely open and unmanaged new media environment then becomes a matter of time and space—where and when nature representations are available—rather than creating the potential for new or changing ideas about the natural world. These study findings also have significance in terms of prosumption; the idea that users of the interactive web are not just passive consumers of content but also active producers of the online content which is consumed.

9.4.2 Professional interests online (or prosumption - not as anticipated)

Chapter five introduced the concept of prosumption, the idea that users in the new media environment are not only consumers of content (in the way that audiences consume TV content) but also producers of the content that appears online. Prosumption is fundamental to or even synonymous with the interactive web and the users’ ability to both consume and produce content with ease is significant. Many of those writing on this concept have addressed the socially and politically liberating potentials of prosumption, while others have argued that prosumption simply enables new economic business models which may be ambiguously framed as the corporatisation of the web or, as Marxist theorists argue, result in McDonaldization; new and different ways of exploiting human
labour. While these considerations and Faustian trade-offs are undoubtedly significant, of greater significance within this Nature 2.0 study is the complete take-over of social media by professional interests, marginalising or even excluding the user and the production and sharing of user-generated content altogether. This moves beyond Web 2.0 as a new business environment where the user-as-contributor is put to work (knowingly or otherwise) and instead attends to the outright appropriation of social media by and for professional interests; the user is no longer prosumer but simply consumes the content which is produced by (professional) others.

It is this point more than any other which has been a notable finding in terms of Web 2.0 and which has been thrown into sharp relief by the findings from this study. The user may have the potential to be both consumer and producer in the new media environment but whether those who are active in this space chose to do so is very much a matter of choice. Furthermore, whether UG content is of consequence, i.e. whether this will be visible, valued and shared by others is not something which can be readily predicted. In terms of the current study, when it comes to ‘representations of nature’ users will undoubtedly be producing content, however, this UG content was not evident in the websites which were chosen, including the majority of social media sites selected. Rather, the selected content was produced by the same media, professional and other agencies which have traditionally been active in this nature space; agencies responsible for nature representations in the mass media and now strongly visible in the new media environment. While this situation may have been unexpected it is perhaps unsurprising.

Media and other nature-centred, for-profit organisations have the financial incentive and importantly the big budgets to produce some of the most visibly arresting, engaging and viewable nature content online, effectively overshadowing or side-lining other UG content which has been produced as a result of personal interest and with limited funding.

Two other professional or quasi-professional groups were also visible in the student website selections, although the motivation for these groups to be online now shifts from profit to care and protection of the natural world. The governmental and non-governmental agencies which respond in this area do so in many different and at times

---

120 Almost half of all nature Facebook sites which were chosen were managed by third party organisations and a significant 80% of all nature YouTube videos were PG rather than UG (substantiating the claim that the YouTube ‘broadcast yourself’ slogan (van Dijck, 2009; Kim, 2012) may indeed be a fallacy.
contestable ways. The point here is that these not-for-profit agencies have now become highly visible in a way that had previously not been possible. And conservation groups are not only incentivised to be online (where they now thrive), they are also now popular sources of content when it comes to representations of nature which approximate people’s own ideas about the natural world, as evident in the current study.

In this Nature 2.0 study, interest has been on young adults’ ideas about the natural world and attention has been on nature representations now circulating in what was anticipated to be an open, user-generated and interactive environment. What this study has inadvertently highlighted is the ongoing and pervasive influence of professional, for-profit and also more recent not-for-profit professional and quasi-professional interests and their representations of nature, circulating within the seemingly user-centred landscape of Web 2.0. It is argued that this finding further challenges the prosumption ideal and is worthy of further research attention.

### 9.5 Human-nature research and the new media environment

The previous three sections reflected on the findings associated with the main Nature 2.0 study components, namely cultural representations of nature, young adults’ conceptualisations of nature and the web environment in which these representations and conceptualisations are realised. Importantly, further insights were shared about each of these components, the first two of which also address four of the five research questions. The final key research question which was posed in this study and which is addressed in the upcoming section is:

RQ5: What are the implications of these study findings within the wider context of human-nature research?

Evidence of responses to research question five appear in other parts of this Nature 2.0 study. For example, (in the current chapter) extending Buijs’ (2009) ‘historical views of nature’ to accommodate the two more recent mass media framings of nature. So while borrowing from and peering into related human-nature research has already been a feature of this cross-disciplinary study, the upcoming section on ‘human-nature research and the new media environment’ attends to those findings which are significant not only within
but also beyond the parameters of the particular focus of this study. The following section (9.5.1) addresses the need for greater research clarity, in terms of changing media technologies. Section 9.5.2 then explores the methodological implications of undertaking human-nature research online, where the web is both research tool and research environment and also the value of more linked up visions of nature studies, in particular, through the use of a common language or a shared nature vocabulary.

**9.5.1 Changing media technologies and framing the object of study**

Survey organisations, such as Pew Research Centre and Forrester in the USA, Tecmark in the UK and Nielsen in New Zealand, routinely quantify people’s use of different media technologies. Two changing patterns of media use include the move from TV viewing to online engagement with the interactive web and the more recent and extremely rapid shift from personal computers to the untethered world of mobile devices.

![Figure 66 Screen technologies: TV to mobile devices](image)

These shifting practices, from TV viewing to online interactivity and from PC to mobile technologies, are not only of interest to statistical agencies but more importantly these analytics are also used to justify or refute a range of research arguments. For those studying mass and new media this is business as usual. However, when media become the object of study in unrelated disciplines, including human-nature studies, the boundaries between these technologies can become blurred or even overlooked altogether. Two issues, in particular, can be problematic when media are conflated. These relate to the nature *content* which is shared and the media technology or *container* used to share this content.
Content: black-boxing changing media
As has been discussed throughout this study, analogue TV is unlike the digital web. Television, like other mass media, is associated with content which flows from the expert producer to the mass audience. In contrast, the interactive web (which may include this TV content) is a ubiquitous, messy digital media space which contains interactive content which may be generated by the expert but also the amateur user; as Shirky (2008) suggests, *Here Comes Everybody*. Failure to critically examine the content which is packaged and shared within these very different media spaces and/or ignoring the implications of user engagement with this media content unhelpfully black boxes (Winner, 1993) these objects of study. And significantly, black boxing media—ignoring what and how content is shared—may have, at times, resulted in more limited understanding about media and how they may or may not impact on people’s ideas about the world around them.

A number of those writing on the human-nature connection and the role of media in the 1990s and early 2000s conflated media, including television and computers (Bustam et al., 2003; Chawla, 1998; Kellert, 2002; McKibben, 1992). While this was understandable during the early days of the internet, inferring equivalence between different screen technologies cannot be justified beyond this period. Since the mid-2000s the web has evolved from a largely static online media space, arguably still a close ‘sibling’ of TV (Green & Guinery, 1994) to the high-speed, user-friendly environment that is now so familiar to many. Web 2.0 has changed the way that users engage (or at least have the potential to engage) with media content, including content about the natural world. To continue to black box or uncritically examine media in the digital space, for example, “books, movies and/or the Internet” (Li & Chen, 2014) or “TV, newspapers and the Internet” (H. Huang, 2015) is to minimise the significance of interactive media content in an increasingly media-centric world.

Container: displacement hypothesis misapplied
Inferring equivalence between different screen media and positioning, for example, video games and computers indoors can also unjustifiably infer the notion of time displacement;

---

121 As Winner (1993) describes, “one need not understand anything about what goes on inside such black boxes. One simply brackets them as instruments that perform certain valuable functions” (p. 365).
the idea that time spent watching TV (or using any other electronic device) reduces the
time available to spend on other activities, including those associated with the outdoors.
As Good (2014) explains:

Television also affects our understanding of the world because the hours that we
spend with television are hours that we don’t have available to do other things—
such as being outdoors engaged in the environment. Scholars call this “time
displacement” (p.216).

Inferring equivalence between different media containers implies that all media
technologies keep people indoors, in the same way as the TV set (traditionally in a fixed
location in the home) dictated where people watched the content on television. In reality,
individuals may be using their electronic devices—increasingly their hand-held mobile
devices (see figure 66 above)–to play games or watch their favourite TV shows at home,
in the garden or while spending time with friends at the beach. Failing to acknowledge
that people increasingly engage with new media in a variety of locations, to do a variety
of things (including watch TV) is, again, no longer justifiable.

Ignoring the significance of the new media environment, in terms of both media content
and media container at best fails to deepen understanding around what are complex, but
increasingly important issues. At worst, such approaches lead to erroneous assumptions
and poor research outcomes, obfuscating rather than revealing understanding.

9.5.2 Visions of nature: challenging methods and language

Challenging methods: use of pre-styled words and pictures
Those seeking to understand people’s ideas, images, visions and concepts of nature use
both qualitative and quantitative methods. Those employing qualitative techniques, such
as interviews or focus groups, aim to elicit considered in-depth ideas about nature, given
in response to such questions as, ‘how would you define nature?’ (S.-C. Liu & Lin, 2013),
‘what is nature?’ (Pointon, 2013), and ‘what do you think about when you hear the word
“nature”?’ (Collado et al., 2016). These open-ended questions invariably provoke a range
of responses which typically reflect changing surface visions of nature, rather than the
more enduring deep visions which have been the subject of this Nature 2.0 study. Not all
qualitative studies, however, are as ‘open’ as they might appear. As noted earlier, these
studies may also incorporate predefined pictures of nature or landscape; images which
are used to prompt participant responses (Buijs, 2009a; Buijs & Filius, 1998; van den Berg et al., 2006; van den Born, 2008). Using pictures helps generate discussion and also enables responses to be quantified. Using predefined pictures also, however, limits the potential for new or changing concepts of nature to emerge.

Using pre-set pictures and written statements about nature is more generally associated with quantitative research (Buijs, Elands, & Langers, 2009; Herzog, Herbert, Kaplan, & Crooks, 2000; van den Berg et al., 2006). As noted by van den Born (2008) the quantitative approach uses “pre-styled items that may generate overall clusters, levels of adherence and explanations...” (p.88). While this more structured, distanced approach is more likely to attend to enduring deep, cultural visions of nature (coinciding with the current study interest) again, using a pre-styled ‘palette’ of words or pictures is more likely to respond to the interests of the researcher rather than elicit people’s own ideas about the natural world.

**Abandoning a pre-set palette**

When British painters of landscape first came to New Zealand they brought with them the same artistic traditions that had served them so well at home. While initially satisfactory, later generations challenged these (mainly) European responses to what was a very different place with a different landscape, culture and history. Artists also found that their palettes lacked the colour range needed to capture what is a much bolder and harsher New Zealand sunlight. In response, new artistic traditions emerged and new colours were adopted; colours and hues which better responded to and represented what the artists were seeing in their adopted Antipodean home (figure 67).

*Figure 67 A View in Dusky Bay by Hodges (1773) and Taranaki by Perkins (1931)*
In the same way that these New Zealand landscape artists felt compelled to rethink the colours in their palette to better reflect their changed environment, so too is it suggested that there is value in exploring quantifiable cultural concepts of nature in an open manner; to set aside established palettes which are unlikely to adequately respond to the changing nature of ‘nature’ in the twenty-first century.

**Using an open and distanced approach**

In this Nature 2.0 study students were asked to choose a representation of nature which was indicative of their own ideas about nature from within the borderless digital space of Web 2.0. They were asked to do so for three reasons. Firstly, the old adage that ‘a picture paints a thousand words’ highlights the truism that it is often easier to represent an idea visually than it is to articulate the same idea through written or spoken language. This is particularly pertinent when it comes to ideas about nature, a concept which is rivalled only by culture in terms of its complexity and meaning. Secondly the open, unbounded digital space means that the nature representations which are available are also unlimited. Consequently, any representation which might approximate a student’s own ideas about the natural world is likely to be available for selection. Finally, by directing the students to the interactive web, the expectation was that they would have at their disposal nature ideas and ideals which have been generated, not by media or other professional gatekeeping agencies, but by ordinary amateur users of the web; ideas which have been uploaded and shared by people just like the students themselves.

While the focus of this study has been on more stable cultural visions of nature, the methodology used to capture these visions—as both representations and conceptualisations—challenges the ‘qualitative-changing surface/quantitative-enduring deep nature’ dichotomy. The quantitative component of this study elicited, not pre-defined conceptualisations of nature (derived through framed responses or box checking), but ideas about the natural world which were derived from a boundless web environment and importantly these ideas were selected and shared *apart from* the bias or influence of the researcher. These ideas about nature were not framed by the researcher, but rather they were a combination of the students’ own ideas and what they chose to select from the nature representations online; a novel approach and outcome which is typical of neither qualitative nor quantitative research.
This boundary-breaching challenges the visions of nature research layers which are identified by van den Born et al. (2001) in their article on the new biophilia. These authors suggest that different interests and approaches make it possible to identify three, discrete layers of research. These include: (1) theory of nature studies, the most abstract level of interest, concerning environmental philosophy and the rights of nature; (2) social construction of nature, attending to more grounded views and practices, combining public discourse and the arts; (3) real-world views and practices, which concern the nature visions of ordinary people. In terms of the current study, which simultaneously combines online representations and student conceptualisations of nature, these layers quickly dissolve and all three layers may be implicated in the study findings.

This study also straddles at least two of de Groot’s (2006) visions of nature categories which are linked to discrete methodologies, i.e. nature visions as private ideas which can be elicited and also as cultural/media expressions which can be gathered. By requiring the students to select certain websites over others they were able to share content that most closely aligned with their individual ideas or conceptualisations of nature. The websites which were selected, in turn, provided a snapshot of prevailing/enduring media representations of nature and significantly, these ideas about nature are elicited and these representations of the natural world are gathered simultaneously. This is what the web enables and which de Groot (2006) has been unable to represent in his three discrete visions of nature categories. He distinguishes between differing interests and approaches but these collide in this Nature 2.0 study which documents the cultural scientists’ nature representations (as expressed in the media) and gathers the social scientists’ nature ideas (elicited from the students). The students’ ideas are drawn from endlessly circulating representations of nature online; their ideas are also the media expressions which, in turn, are the cultural representations of nature. This is the unique aspect of the current research and why it is both challenging and potentially revealing.

**Challenging language: consistency and meaning**

Method is also inextricably linked to language. Without the right words and concepts to adequately describe the research approach which is used to frame and explain the study interest and any findings which emerge, understanding can be limited and meaning may be lost. By extension, where the language or method applied are inadequate or fail to adapt to changing circumstance it may be that new phenomena, emerging in response to
these changes, go unrecognised. This Nature 2.0 study has challenged the hard-wired qualitative/quantitative methodological dichotomy and argued the value of new and more nuanced approaches when undertaking research in an increasingly porous online/offline world. This study also highlights the need for a greater exchange of ideas between those studying the human-nature connection. It argues for a more connected visions of nature landscape, through the use of consistent language and greater sharing of new and emerging concepts, most notably those which challenge the nature/culture, human-centric/nature-centric dichotomies and which better reflect a rapidly changing world.

As outlined in chapter four, the ‘visions of nature’ concept has been used to bring together those studies which respond to many of the different ways in which human-nature contact has been and continues to be realised. It is an umbrella term which accommodates such interests as, “views on nature, implicit philosophies, ideas on nature or attitudes towards nature” (de Groot, 2006, p. 237). While there is merit in grouping different but related human-nature interests in this way, this does not address the bigger challenge of how to realise the value of findings from these human-nature studies beyond the instance of each particular study. This is not to suggest that every study which attends to the human-nature connection can be used to build wider understanding within the same topic area, discipline or even related disciplines. Rather, it is to suggest that the wider potential value of these studies is significantly reduced, if not eliminated altogether, when there is inconsistent use of language; new concepts are overlooked or the same ‘visions’ concept is utilised in multifarious ways in different studies.

Without wishing to repeat the earlier discussion on terminology and language (which examined such concepts as visions, images, ideas and views of nature) it is worth revisiting the issues raised. As noted, moving between studies which use different terminology to describe different human-nature interests which, in reality, overlapped with the declared study interest proved challenging. More challenging still, and more pertinent to the point at issue, are those studies which utilise the same terminology or language to mean quite different things. For example, ‘images of nature’ is variously defined as “people’s general cognition of what nature is” (van den Berg et al., 2006, p. 45), as a conceptual structure which encompasses notions and values of nature (Buijs, 2000) and as a particular and well-defined component within a broader visions of nature framework (de Groot & van den Born, 2003; van den Born et al., 2001; Verbrugge et al.,
While words and their meanings will always shift and bend (for different people and at different times) within the research context at least, it is suggested that a more clearly defined and consistent use of language could help situate and unite related studies; importantly move beyond the individualistic, isolated and ‘fragmentary focus’ (Buijs, 2009, p. 21) that is so often a feature of research in this area.

Towards a common nature vocabulary
Selected researchers, such as Buijs (2009) and Keulartz et al. (2004) do address the need for a common nature vocabulary. Their interest is in improving communication between different groups towards better decision-making in Dutch conservation policy and practice. As Buijs (2009) suggests, “integrating the pluralism of cognitions into images of nature may help managers to understand conflicts based on diverging opinions on local nature conservation practices” (p.99). While the motivating interest here is conservation (it is argued that) shared understanding through the use of more consistent language could also be more widely and generally beneficial, potentially advancing the “theoretical and practical power” (ibid.) of studies which explore related aspects of the human-nature connection. The greater the consistency of language and shared understanding within this area of human-nature research, the more readily ideas within this domain can be associated with other related areas of interest, either within the same domain or even within other academic disciplines.

This Nature 2.0 study has attended to deep, culturally-founded concepts of nature but by exploring this interest as these ideas are re-presented online this has also challenged the methodological boundaries which no longer retain credibility in the online environment. This study also asserts the value of a more connected nature vocabulary; language which can unite the many disparate studies which have attended to visions of nature and even bridge the divide between these and related studies on the human-nature connection.

9.6 Future research into human-nature contact

9.6.1 Building on Nature 2.0 study findings

Realising further value from the current datasets
This Nature 2.0 study has represented findings at the whole population level. Where sub-populations were examined, this has been limited to gender, ethnicity and location of
family home. Selected individual voices (gathered through focus groups) were also included where they highlighted or illustrated salient points. Analysis has not yet been undertaken at the micro scale or individual level. For example, assessing a particular survey respondent’s online connectedness, nature friendliness and their responses to questions about nature. In addition, other responses were gathered which have informed the current analysis, but the value of these datasets has yet to be fully realised. For example, the online survey included two word-association questions, where the students were asked to submit three words which they would and would not associate with nature. This methodological approach to understanding how people perceive themselves in relation to the natural world has been used by others (Buijs & Elands, 2013; Vining, Merrick, & Price, 2008) and the information gathered in the Nature 2.0 study could contribute to this related area of research. Students were also asked two free-text questions about what they believed might be beneficial or otherwise about online nature contact experiences. Rich qualitative data were received in response to these questions, but again it was not possible to represent the full breadth and depth of the responses which were shared. Again, this information was included in the data analysis (see chapter six for a table of student response themes and also focus group observations) but more detailed analysis would be of interest to the many environmental educationalists, psychologists, media and nature researchers who deliberate on the potential dangers and benefits of mediated or virtual nature contact. In summary, re-examination of selective quantitative and qualitative data gathered through the online questionnaire and the focus groups could provide further insights, beyond those already shared, to the current Nature 2.0 study and in response to related studies which examine the human-nature connection.

**Building on the current Nature 2.0 study findings**

There would also be value in repeating this Nature 2.0 study with different populations, both locally and in other parts of the world. As van den Born et al. (2001) suggest:

Geographically within the Western world, research on visions of nature is largely confined to north western Europe, but with some information from the USA. Data are lacking from southern Europe, which may have a very different ‘culture of nature’. One important line of further research, therefore, appears to be the development of quantitative scales for visions of nature that may be applicable in cross cultural investigations (p.73).
New Zealand is not part of Europe, however the dominant culture is still informed by the culture and traditions of Britain, together with the heritage and language of the local, indigenous population or tāngata whenua. Māori make up 15% of the population in New Zealand but just eight percent of students who attended the University of Otago in 2013 were Māori. Furthermore, the number who responded to the Nature 2.0 survey was even lower; just 3.5% of questionnaire respondents identified as Māori. As a result, it is not possible to make any definitive assertions about these students’ responses or those shared by those from the wider Pacific region (just nine Pasifika students responded to the survey). There would, however, be value in repeating this Nature 2.0 study with much larger cohorts of both young Māori and also Pasifika peoples.

For the majority English-speaking Pākehā population, however, like other English-speaking nations around the world, their everyday practices and beliefs are still informed (in part at least) by the culture and traditions of Europe. As such, the findings from this Nature 2.0 study can be readily associated with findings from related studies from Europe and North America (as has been evident throughout this study). Van den Born and her colleagues, like many other visions of nature researchers are studying in the Netherlands and while they suggest the value of extending quantitative human-nature studies beyond this part of the world, such that different ‘cultures of nature’ can be better understood, there is also value (it is argued here) in understanding the human-nature responses associated with those from very different cultural contexts. New Zealand is situated in the South Pacific but it is also in close proximity to Asia. It is suggested there would also be value in re-using the Nature 2.0 survey in one of the many rapidly industrialising nations in this part of the world; most notably China, but also other countries currently undergoing rapid modernisation.

In his study on lay people’s images of nature Buijs (2009a) points out that, “the images of nature described in this article cannot simply be applied to other countries and cultures. Different physical as well as cultural contexts may lead to different sets of images” (p.429). The Nature 2.0 questionnaire captures quantifiable information about people’s concepts of nature. It also captures additional qualitative information which enriches understanding of the responses which are shared. Most notably, the online questionnaire captures quantitative data about concepts of nature in a distanced but uncharacteristically open manner. It is this open unbounded research approach which suggests this particular
study’s usefulness in a variety of known and as yet unknown and potentially very different cultural contexts.

9.6.2 Human-nature contact in a media-centric world

Media matter in a media-centric world

When it comes to people’s visions, images or concepts of nature, the significance of direct or indirect nature contact, as articulated by Kellert (2002) and others, is not contested in this Nature 2.0 study. Similarly, this study never sought to prove or disprove the importance of other socio-cultural influences (such as family, peers and even environmental education) in terms of how people think about and respond to the natural world. And while the study focus has been first and foremost on nature within the representational space it has been evident in the findings which have emerged that direct contact with a physical natural world continues to be an everyday reality for many who participated in this Nature 2.0 study.

As outlined in chapter one, many of those undertaking research on the human-nature connection focus on these direct and indirect nature contact experiences. Few of these studies, however, address the significance of mediated contact, in particular experiences of nature as represented on-screen. When mediated experiences are considered study findings invariably reaffirm the risks associated with mediated contact, together with the benefits of unmediated contact with real nature.\footnote{With the exception of books or media showcasing positive images or informative nature content.} Again, the evidence in support of the benefits derived from direct and indirect nature contact (for both humans and nature) is compelling and again this Nature 2.0 study does not seek to challenge these findings. Rather, the intent of this study has been to redress the balance of interests in human-nature research; to attend more fully to the significance of mediated nature contact, particularly within the ubiquitous new media space, an environment which is increasingly significant in the lives of so many. As one student observed in their final remarks:

I enjoyed doing this [survey]! It made me question the concept of nature and realise how caught up I can get in social media - the amount of time I spend on it and how reliant I have become on it [420c].
In short, those with an interest in nature and human-nature contact may not have an interest in media, however, in an increasingly media-centric world, to not attend in this area not only limits understanding, but also more critically this denies a lived reality which is increasingly the norm for many. How people think about and engage with nature will continue to be informed by direct and indirect experiences but these responses to the natural world will also increasingly be informed by virtual experiences; by experiences associated with new media technologies and shared media content. As Büscher (2014) suggests, it is important to understand the “effects of new media on human-nature dynamics more broadly” (p.13).

**Online nature and blurred boundaries**

There is an established body of postmodernist writing on the decreasing nature/culture and nature/technology divide. Despite the substantial and even growing interest in this area the Nature 2.0 study found no evidence to support the claim that this blurring of nature with culture, or nature with technology signifies ‘nature’ for the majority of students; only two of the 504 websites chosen (referring to talking animals and green-glowing pigs) could be said to represent a ‘hybrid nature.’ What was notably evident, however, was a blurring of the online space with the offline world.

In the early days of new media research, the digital space was represented in opposition to the physical world. Holloway (2003) attends to this virtual/real distinction, noting how in “such representations the two worlds [were] viewed as distinct or unconnected from each other and as possessing different, usually oppositional qualities” (p.9). For new media researchers at least, this situation rapidly changed, as noted by Livingston, writing in the same year:

…even in the short history of the internet, research has already moved beyond characterizing the supposedly autonomous online world towards exploring its complex connections with the offline world (Slater, 2002) (2003, p. 3).

It is these ‘complex connections’ that are implied by many of the websites which were chosen, most notably those themed as Culture over Nature (CoN), Pleasure in Nature (PiN) and CARES (although many of the other websites, themed elsewhere, are also implicated). Much of this online nature content is thoroughly enmeshed with, or even contingent upon, real world practices and outcomes such that arguing a virtual/real world
divide becomes nonsensical. The online shopping sites (themed with CoN) would have no value without real world products to buy, tourist destinations (themed with PiN) would have no validity online if they did not exist in the real world and the many conservation activities which were suggested (and themed with CARES) could not be pursued if there was no real world ‘out there’ to conserve. Harvey (1996) usefully summarises the issue:

…materiality, representation, and imagination are not separate worlds. There can be no particular privileging of any one realm over the other, even if it is only in the social practices of daily life that the ultimate significance of all forms of activity is registered (cited in Büscher, 2014, p. 18).

It is argued here, that while representations of nature in the digital space are clearly enmeshed with other activities which make up people’s ordinary daily lives (Bakardjieva, 2010) those researching in the nature space have yet to respond to these entanglements in the way new media researchers are already responding. It is therefore suggested, that more than postmodern hybridity (together with notions of imbroglios, heterogeneity and the spectre of the cyborg) or the privileging of one realm over the other (nature is a reality-based concept for many Dutch and other nature researchers) it is these entanglements, between mediated and lived reality and virtual and actual spaces, that are compelling when it comes to concepts of nature. And it is to these online/offline entanglements and the ‘dynamic interactions’ between these spaces (Büscher, 2014) that future studies on visions, images and concepts of nature should attend. As Shirky (2010) notably points out, “[o]ur social media tools aren’t an alternative to real life, they are part of it” (p.37).

**Mobile devices and increasing blended nature experiences**

This Nature 2.0 study has explored the World Wide Web in general and social media in particular and examined some of the implications of this new media environment in terms of representations and conceptualisations of nature. This study did not seek to, nor has it, addressed the related and frequently interconnected realms of: *mobile technologies*, the smartphones, tablets and other devices associated with ‘portability and mobility’ (Blank & Dutton, 2013); *augmented reality*, the manipulable digital layer over the ‘real world’ (Schall et al., 2009); or *virtual reality*, digital simulated worlds or ‘dematerialised’ illusions (Markley, 2001) with which users can—with the aid of gloves and headgear—seamlessly interact. However, as noted in chapter six, the use of mobile technologies has now surpassed that of PCs and laptops (nationally and internationally) and this mobile
trend is likely to continue in future. Furthermore, advances in the areas of augmented and virtual reality suggest that for those who are now dependent on technology as part of their ordinary everyday lives, experiences of the social world and also the natural world, will increasingly be mediated in ways that blend the virtual and the real. Writing about visitor experiences of Kruger National Park, Büscher (2014) illustrates what’s already changed:

New media… do not only stimulate the reimagining of nature online. They also enable people to reimagine and differently experience actual wildlife spaces…landscapes have become ‘information interfaces’ whereby ‘mobile interface can become a collaborative space’ and users “work together to create mobile representations that inform the lived space they traverse” [citing Farman, 2012]. So, for example, with the Kruger Sightings app or Twitter alert…one can now experience Kruger very differently. Instead of roaming the park searching for chance encounters, one can now chase the sightings reported by other visitors and hence ‘reimagine’ your Kruger park experience (p.16-17).

While most users of new media technologies are unlikely to be visiting wildlife parks in Africa, Büscher’s suggestion that experiences of this nature space are now very different is equally applicable anywhere. Whether people are using their smartphone as a lens through which to view ‘real nature’ while outdoors (and importantly share this with friends), a mobile app to track live or even long-dead species such as the moa while indoors (R. Thomas, 2014), new media enable blended experiences of the natural world which are increasingly contingent on neither time nor space. Old world dichotomies, such as indoor/outdoor and real/virtual, that previously seemed natural and ‘given’ have now become destabilised (P. C. Adams, 2009) and understanding about humans and nature must now be sought in new and different ways.

When Dürer etched the image of a rhinoceros (based on the ideas of others) he could not know that 500 years later, representations of this and so many other nature species and nature spaces might be all that remain; but increasingly that appears to be a future that confronts us all. How we approach this challenge–of an impoverished and depleted planet–depends, in the first instance, on what we think about and how we choose to represent the natural world.

This Nature 2.0 study has not advocated online nature as an alternative to direct nature contact, nor has it contested the value of direct nature contact experiences for young people or any other population group. Rather, this study has argued the value and
significance of the new media environment and the pressing need to understand the implications of this fundamentally different and ubiquitous media space. This study has also drawn attention to a worrying trend in those studies which examine the human-nature connection (towards improved outcomes for both people and nature). Nature writers, conservationists, environmental educationalists and psychologists (at best) fail to understand the new media environment or (at worst) do not care that this all-pervasive, interactive, increasingly mobile digital space is of a very different order to any earlier media technology. Rather than critically analyse this new and arguably messy digital space (which new media researchers have wrangled for decades) nature writers routinely persist with the same assumptions and expectations previously associated with analogue media, ignoring the fact that Facebook is not and never has been TV. As this Nature 2.0 study has demonstrated, ideas about the natural world are now changing (something which was signalled by media scholars almost fifty years ago) and new media technologies cannot be divorced from the ways in which nature (or ‘the environment’) is represented, conceptualised and experienced in the twenty-first century.

This Nature 2.0 study has demonstrated the value of working across academic disciplines to better understand changing ideas about a changing natural world. This study advocates that those writing on the human-nature connection similarly embrace unbounded approaches, to more fully appreciate and respond to what are now complex global challenges. Now, more than ever, is the time for researchers to move beyond existing silos, to trample the boundaries that divide knowledge, to challenge existing assumptions, to embrace new methods and practices and, most of all, to engage with a more complex, fluid and increasingly entangled online-offline humanature world.
Appendices

Appendix 1: Focus group permissions

Social Media and Nature Study 2013

What’s the project about?
This project is part of a University of Otago PhD research project which is looking into social media (e.g. blogs, Facebook, You Tube, Twitter, Flickr), young people and the natural world.

What will I be asked to do?
We will chat for about 45 minutes, while enjoying coffee or tea with home-baked cookies and friands. I’ll ask you about social media and your experiences of, and thoughts about, the natural world. While some questions will be based on those in the online survey, others may emerge as we chat. You are not obliged to answer any questions you don’t want to.

What will happen to the information collected?
The discussion will be audiotaped and only my research support team and I will have access to this information, which will be stored securely during the project, then destroyed. All information included in my thesis or other publication will be anonymised and no one will be identifiable.

If you agree to take part in this project please read and sign below

I have read the above information and understand what this project is about. I know that

1. My participation in the project is entirely voluntary.
2. I am free to withdraw from the project at any time without any disadvantage.
3. Personal identifying information will be destroyed at the conclusion of the project and any raw data on which the results of the project depend will be retained in secure storage for at least five years.
4. This project involves an open-questioning technique with questions about social media and the natural world. The precise questions which will be asked have not been fully determined in advance, but will depend on the way in which the interview develops. If the questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project.
5. The results of this project may be published and will be available in the University of Otago Library (Dunedin, New Zealand). All data will be anonymised and will be presented in such a way that ensures I will not be recognised.

I agree to take part in this project.

............................................................................
............................... (Signature of participant)
(Date)
Appendix 2: Online questionnaire with permissions

Social Media and Nature 2.0 Survey 2013

Survey entry page: permissions and guidelines

Hi

I invite you to participate in the Social Media and Nature Survey 2013

You can complete the survey form by clicking this link: <<survey link>> If the link does not take you to the survey, please copy and paste the link into your Web browser.

What’s the survey about?
This survey is part of a University of Otago PhD research project which is looking into the social web (e.g. blogs, Facebook, YouTube, Twitter, Flickr), young people and the natural world.

Survey prizes
Two students who complete the survey (and have provided their contact details) will be randomly selected to win 4 free movie tickets each. The winners will be notified directly.

What happens to the information I provide?
Participation in this survey is voluntary and all responses will be confidential (only myself and my supervisors will have access to the information you provide and all information gathered will be kept securely for 5 years, then destroyed). At the end of the survey you can choose to include your contact details (your name, email and phone number) if you would like to be in the draw to win the movie tickets or are willing to be contacted with follow-up questions (see Research: Part 2, below).

By completing this survey, you give consent for the information you provide to be used within the context of the research outlined.

How long will the survey take?
The survey should take about 20 to 30 minutes to complete depending on your answers.

What’s the point of the survey?
Your feedback will provide valuable information towards better understanding of how social media like Facebook and YouTube are influencing young peoples’ ideas about the world around us. Most importantly, we want to hear your views—not those of researchers or other adults.

Research: Part 2
After these survey results have been analysed, informal interviews (either one-to-one or in small groups) will be held with volunteers who have completed the online survey. If you are interested in sharing your thoughts about some of the questions from this survey please include your contact details when prompted, and respond ‘yes’ when asked if you would like to be interviewed. I will contact you directly, if you are interested in being involved in this second part of the project.

What if I have a question?
Thank you for taking the time to complete this survey. If you have any questions about the survey, please contact either myself (Gillian) or my main supervisor (Claire). Our details are…
Survey questions

i. About You/Demographic [1-4]

1. Are you male or female? *

- male
- female

2. How old are you? *

- 16-17
- 18-20
- 21-24
- 25-34
- 35 or older

3. How do you usually identify yourself? (check ONE response only)*

- New Zealand European
- Māori
- Pacific Islander
- New Zealand Chinese
- New Zealand Indian
- Non-New Zealander, European
- Non-New Zealander, Asian
- Other please specify:

4. Where is your family home, where you (mostly) grew up? (check ONE response only)*

If you have more than one home, just choose the one where you spent the most time.

- In a Dunedin city/suburb e.g. NEV, Mornington
- In a Dunedin satellite town e.g. Mosgiel, Waitati
- NZ city or town (not Dunedin) e.g. Auckland, Nelson
- NZ rural location e.g. farm, lifestyle block
- Overseas city or town (not NZ) e.g. Paris, Tokyo
- Overseas rural/semi-rural (not NZ) e.g. farm, village
- Other please specify:
ii. You and Social Media [5-7]

Social media, such as Wikipedia, YouTube and Facebook let you view, create, remix, reuse, upload, download and share ideas and information with anyone, anytime!

5. How do you usually access social media? (check all that apply) *

- I use a desktop computer (PC or Mac that is ‘fixed’ in one place)
- I use a laptop computer (which can be moved)
- I use a mobile device (e.g. iPhone, iPod touch, iPad or other tablet, etc.)
- I don’t access social media
- Other please specify:

6. How long, on average, do you spend on social media? (check ONE response only)*

- I’m online all day so it’s hard to say
- Less than an hour a day
- 1–2 hours a day
- 3–4 hours a day
- More than 4 hours a day
- I don’t spend time on social media
- Other please specify:

7. What do you usually do on social media? (check one response to each statement) *

<table>
<thead>
<tr>
<th>My use of social media</th>
<th>At least once a week</th>
<th>At least once a month</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I talk to friends or family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I study (any level)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I work - paid or voluntary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I post comments e.g. on Facebook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I watch/ share TV or movies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. I listen to/ share music</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. I play computer games</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. I make/share videos e.g. with my iPhone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
iii. You and Nature [8-13]

Nature or the natural world can suggest different things to different people. The next few questions are about how YOU think about and define ‘nature’.

8. Which 3 things would you most strongly associate with nature?*
Enter at least 3 responses and no more than 3 responses.

1. 
2. 
3. 

9. Which three things would you say are definitely not nature?*
Enter at least 3 responses and no more than 3 responses.

1. 
2. 
3. 

10. How do you prefer to experience nature (check ONE response only)*

| Using a computer (desktop, laptop or mobile device) |
| Without any technology at all |
| With or without technology, both are fine |
| I don’t experience nature |
| Other please specify: |

11. Which of the following have you done in the last 3 years? (check one response to each statement) *

<table>
<thead>
<tr>
<th>Have you…</th>
<th>I do this weekly</th>
<th>I do this monthly</th>
<th>I do this occasionally</th>
<th>I’ve never done this</th>
<th>I’ve never done this and don’t intend to</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Hunted or fished</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Been tramping, cycling or horse-riding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Picnicked or camped outdoors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Done gardening or farm work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Watched nature programmes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Played online games which include ‘nature’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
g. Read about nature in books or magazines

h. Talked about nature with friends or family

i. Helped a nature group or organisation

12. Is your family interested in nature? *

My family’s interest in nature

<table>
<thead>
<tr>
<th>They are very interested in nature</th>
<th>They are quite interested in nature</th>
<th>They are neither interested nor uninterested</th>
<th>They are not very interested in nature</th>
<th>They have no interest in nature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. I gave this response because… (e.g. they love watching nature docos/they dislike animals)*

iv. Nature and Social Media [14-16]

14. Do you experience nature on social media? (check one response to each question) *

<table>
<thead>
<tr>
<th>Online ‘nature’ contact</th>
<th>At least once a week</th>
<th>At least once a month</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I am aware of nature on social media e.g. tourism advertising</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I look for information about nature on social media e.g. Wikipedia,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I add comments and share stuff about nature e.g. ‘like’ on Facebook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I create/share my own nature content, e.g. upload my videos to YouTube</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. Can it be **good or even better** to experience nature via social media (like Facebook, You Tube and Wikipedia)? If yes, please suggest when this might be a ‘good idea.’ ☺

16. Can it be **bad or unwise** to experience nature via social media? If yes, please suggest when this might be a ‘bad idea.’ ☹

v. Pick a Website or App—almost finished! [17- 19]

An alien arrives from another planet, where there is no such thing as nature. The alien (who luckily speaks English) asks you about ‘nature’ and you decide to show him/her nature on the Web. Use this GOOGLE LINK to find at least 1 nature Website or App to show the alien. Choose any wiki, blog, online game or App but make sure you can do stuff, e.g. add text, choose 'like', role play in a game or upload a video to share with your friends. Then fill out at least one of the boxes below:

17. Cut/paste the web address (the URL) and complete the sentence below:

Choose any wiki, blog, online game or App.
- Website address (the URL)
- This is nature because…

18. Cut/paste the web address (the URL) and complete the sentence below:

Choose any wiki, blog, online game or App.
- Website address (the URL)
- This is nature because…

19. Cut/paste the web address (the URL) and complete the sentence below:

Choose any wiki, blog, online game or App.
- Website address (the URL)
- This is nature because…
vi. At the finish line [20-22]

20. Are there any final comments you’d like to add, either about this survey or about social media or nature...

21. Would you be willing to talk about social media and nature, in a small focus group?*

[ ] Yes
[ ] No

22. Your contact details
Optional, but required if you are willing to be part of a focus group or wish to be entered into the draw to win either a $20 iTunes voucher or 3 free movie passes for you and your friends.

Survey completed!

Thank you for completing this survey.
You will be notified directly if you have won the movie vouchers.
If you have any questions at all please contact either myself or my supervisor:

Gillian Elliot  
Geography Department  
gillian.elliot@otago.ac.nz

Associate Professor Claire Freeman  
Geography Department  
cf@otago.ac.nz
Appendix 3: Focus group outline

Social Media and Nature 2.0 Study: Focus group outline

WELCOME AND INTRODUCTION [5 mins]

Welcome and thank you all for coming along today, I really appreciate your time and interest.

First of all, I should re-introduce myself and my research, my lovely assistant, Karen and explain the purpose of this meeting. My name is Gillian Elliot and I’ve been a librarian here at Otago for over 10 years. I’m studying a PhD part-time and I’ve just completed two years of study. You’ve already done my online survey, so you’ll have an idea about my research interest, which is around ‘nature and social media’. Karen, would you like to introduce yourself and your role…?

The purpose of this meeting is to build on what I’ve already learned through the online survey, to listen to your ideas and experiences on this topic. I value your views and opinions and what we discuss here today will be incredibly helpful for my project. If any of you are interested to know more about my research you are very welcome to ask me any questions at the end of this discussion.

I don’t know if you’ve participated in this kind of activity before, but the idea of a ‘group discussion’ is to allow you to share your views, opinions and experiences in a relaxed and informal environment. There are no right or wrong answers to any questions, just different points of view and all of your comments, both positive and negative, are important. Of course, what you say, how you say it, and how much you say is up to you, but you don’t need to worry about what you’re expected to say or do, whether you’re on the right track, or whether you should agree with what other people say.

I do ask that you please respect others’ right to speak and try not to talk at the same time, or interrupt others when they’re talking.

So that I don’t miss any of your comments, I’d like to record this discussion. I asked for your permission to do this on the form that you signed, as it will help me make sense of what’s discussed, within the context of my wider research. Please be assured that any contributions that you make today will be kept confidential, and any published research will, of course, contain fictitious names.

This discussion will last about 45 minutes. During that time, I would like to explore a number of issues on this topic and hear everyone’s responses.

Has everyone got a drink and something to eat?
FOCUS GROUP QUESTIONS

**Ice-breaker** [5-10 minutes]

I’d like to start by asking each of you to introduce yourselves, by telling us your name, where you come from and what you’re studying.

<table>
<thead>
<tr>
<th>A. Growing up - activities and computer use [10 minutes]</th>
<th>Online survey question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You all did the online survey (thank you again for doing that) and you told me about your use of social media… Can you talk about the social networking sites that you and your friends used when you were growing up - if you used any?</td>
<td>7. What do you usually do on social media?</td>
</tr>
<tr>
<td>2. Can you tell me about any other activities you enjoyed when you were younger? Did you spend much time outdoors, for example?</td>
<td>6. How long–on average - do you spend on social media?</td>
</tr>
<tr>
<td>Probes: where did your family go on holidays; are you still interested in these activities?</td>
<td>11. Which of the following have you done in the last 3 years? [relates to outdoors]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Nature concepts and ideas [10 minutes]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Moving on to thinking about ‘nature’, can you talk about words or ideas that you would associate with the natural world? I know you already suggested 3 words in the survey, but could you say a bit more about any ideas that spring to mind?</td>
<td>8. Which three things would you most strongly associate with nature?</td>
</tr>
<tr>
<td>4. As well as words like trees, rivers and mountains (nouns) lots of survey respondents chose more abstract words for ‘nature’ - like purity, calmness or freedom. Would you associate any of these, or any other positive or negative ideas, with the natural world?</td>
<td>9. Which three things would you say are definitely not nature?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Nature and social media [15 mins]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I’m sure you’ll be interested to see what is a fairly representative selection of the nature websites that survey respondents chose to show the alien.</td>
<td>17. Use this Google link to find one or more nature website or apps to show your new alien friend.</td>
</tr>
</tbody>
</table>
7. Do you think the alien will get a fair understanding about ‘nature’ or the natural world from these social media sites? Can you explain further?

8. There were also a couple of questions in the online survey about experiencing nature via social media; whether this might be a good thing or a bad thing.

   Do you have any thoughts about experiencing the natural world through social media?

*Ending questions:*

9. Do you have any other thoughts, about nature or representations of nature through social media?

10. Summarising what we’ve discussed…

15. *Do you think it might be good or even better to experience nature via social media? If yes, can you suggest when this might be a ‘good idea’*

16. *Do you think experiencing nature via social media can ever be a ‘bad idea’ or unwise thing to do? If yes, can you suggest when this might be a ‘bad idea’*

---

**CLOSING AND THANK YOU**

- Thank you again for your time and your contributions, which will be really important to my research. I’m happy to talk more about this, at any time, if you’re interested. I’m also more than happy to share information about any findings that I come up with—if you’re interested.

- As I said at the start, please be assured that all information will be kept confidential; no one will be identifiable, either in my thesis or any other research publications

- Can I ask, is there anything I should change about the focus group; that might improve it and make it a better experience for the other groups?


Castree, N., Adams, W. M., Barry, J., Brockington, D., Büscher, B., Corbera, E., et al. (2014). Changing the intellectual climate. *Nature Climate Change, 4*(9), 763-768. doi: [http://dx.doi.org/10.1038/nclimate2339](http://dx.doi.org/10.1038/nclimate2339)


374


philosophies regarding nature in Germany, the Netherlands and the United Kingdom (pp. 129-152). Berlin: LIT-Verlag.


King, K., & Church, A. (2013). ‘We don't enjoy nature like that’: Youth identity and lifestyle in the countryside. Journal of Rural Studies, 31, 67-76. doi:http://dx.doi.org/10.1016/j.jrurstud.2013.02.004


Papacharissi, Z. (2015). We have always been social. Social Media + Society, 1(1), 1-2. doi: http://dx.doi.org/10.1177/2056305115581185


RIN. (2010, July). If you build it, will they come: How researchers perceived and use Web 2.0. Retrieved 4 Dec 2011, from [www.rin.ac.uk](http://www.rin.ac.uk)


Salvador, P. (2011). The myth of the natural in advertising. *Catalan Journal of Communication & Cultural Studies, 3*(1). doi: [http://dx.doi.org/10.1386/cjcs.3.1.3_1](http://dx.doi.org/10.1386/cjcs.3.1.3_1)


Shao, G. (2009). Understanding the appeal of user-generated media: A uses and gratification perspective. *Internet Research, 19*(1), 7-25. doi: [http://dx.doi.org/10.1108/10662240910927795](http://dx.doi.org/10.1108/10662240910927795)


van den Belt, H. (2004). Networking nature, or serengeti behind the dikes. *History and technology, 20*(3), 311-333. doi:[http://dx.doi.org/10.1080/0734151042000287023](http://dx.doi.org/10.1080/0734151042000287023)


Williams, R. (1976). Mediation *Keywords: A vocabulary of culture and society* (pp. 170-173). London: Fontana.


Yetter, G., & Capaccioli, K. (2010). Differences in responses to web and paper surveys among school professionals. *Behavior Research Methods, 42*(1), 266-272. doi:[http://dx.doi.org/10.3758/BRM.42.1.266](http://dx.doi.org/10.3758/BRM.42.1.266)

