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Supervised Project Report

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***Why Kiwi's Fly South: An Assessment of New Zealand's
Place in Antarctica***

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Place is a contested term. With many different definitions able to be used to define place in Antarctica, the definition decided on to conduct this research was: place can be noted when it has invested meaning given to it through human use and experience. In identifying place in Antarctica, it was found that, in a global context, Antarctica could be said to have a weaker sense of place than long-inhabited countries, or it could just be said to be different. In assessing New Zealand's place in Antarctica, the decision to use interviews to collect data was revised to conducting an online survey due to time constraints and in the interest of collecting as many responses as possible. Despite best efforts very few responses were collected, meaning that the results of this research cannot be said to be representative and conclusions drawn from it not considered entirely accurate in this context. It was found that the main reasons New Zealanders travel to Antarctica was to effectively assert their claim on Antarctica, and to monitor the environment to ensure its quality and to assess the continent's widespread effects.

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Introduction

New Zealand's affiliation with Antarctica began with the gifting of the Ross Dependency (Figure 1) to New Zealand by the United Kingdom. Despite now having territory in Antarctica, New Zealand didn't engage in activity in the continent until the Commonwealth Trans Antarctic Expedition of 1955-58. This expedition saw the construction of the original Scott Base, and Sir Edmond Hillary travel to the South Pole via tractor. This endeavour saw Antarctica capture the hearts and imaginations of New Zealanders. Twenty years later Antarctica again entered the minds and hearts of New Zealanders. The Mount Erebus disaster of November 1979 saw over 200 passengers and crew perish when Air New Zealand flight 901 fatally crashed into Mount Erebus. The changing face of Antarctica for New Zealanders, from a place of achievement to a place of foreboding and death, is something that has not been explored to a great extent. Here we will be investigating the concept of place in Antarctica. To do this, place will be explored as a concept and applied to Antarctica. Qualitative research methods are investigated and implemented in order to determine how New Zealanders who have travelled to Antarctica view the continent. The results gained from this will be compared to similar international studies in order to draw conclusions and analyse common themes.

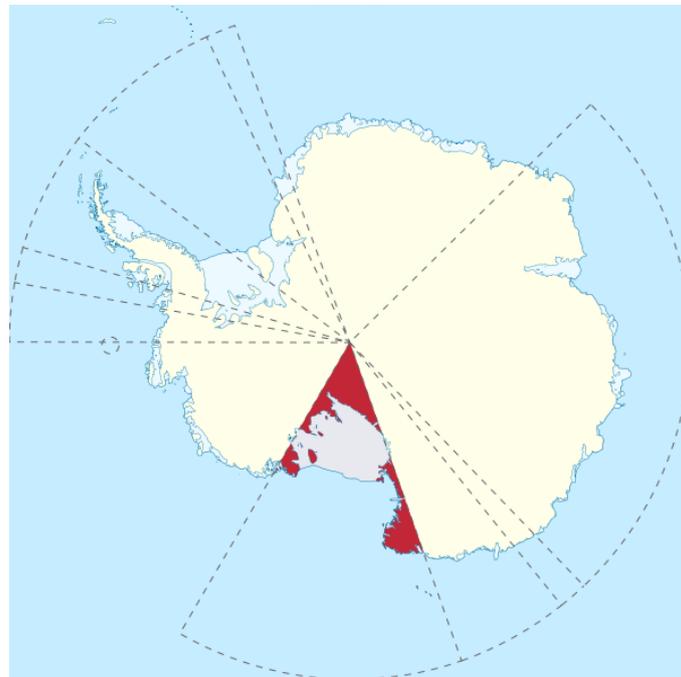


Figure 1: Antarctic map showing the Ross Dependency in red (source: http://fr.wikipedia.org/wiki/Fichier:Ross_Dependency_in_Antarctica.svg)

Place

The word 'place' tends to be a "throw around" term in the English language. It is used by people most every day with no real thought given to what a place is and what it means. Place is an idea, a concept, a way-of-being in the world. There is no clear cut definition of place throughout literature. In order to effectively apply a definition of place to Antarctica for analysis, examples will be investigated and discussed.

Defining place

Place is everywhere. There is no one clear definition of place. Place can refer to a particular region, settlement, location, or position on the surface of the earth (Azaryahu, 2009). Place can also be defined differently depending on what discipline it is studied under, causing it to be an obscure concept that is hard to grasp. Place can be defined as spaces which people have made meaningful, through population and culture (Azaryahu, 2009; Cresswell, 2004; Glasberg, 1998). This definition hinges the concept of place on the humanistic element; without people there is no place. What begins with undifferentiated space becomes place as we get to know it better and endow it with value, transforming it from unknown to known territory (Fox, 2005; Tuan, 1977).

Agnew (as cited in Cresswell, 2004) identifies that place has three fundamental aspects. It must have a location, a where. These locations need not be stationary. A place can be a park, or it can be a cruise ship. A place must have a locale, a material setting for social relations. Places must also have a sense of place. It must have some relationship to humans and the human capacity to produce and consume meaning.

There are three levels of approaching place (Cresswell, 2004). The first is the descriptive approach. Here the world is viewed as a set of places which can be studied as unique entities, for example the world is made of countries, but each one is different. The second is the social constructionist approach, where places are instances of more general underlying social processes. For example North Korea has a highly communist regime due to how it is governed, whereas Antarctica has a predominantly science focus due to the Antarctic Treaty goals. Finally, there is a phenomenological approach which suggests that human existence is of utmost importance in place, that is there is no place without human existence or vice versa.

Within contemporary cultural geography, place is about what it means to people and is expressed in terms of values, obligations, intentions, and commitments as well as emotional and social involvement (Azaryahu, 2009). In spatial science, central place theory uses place to describe locations where particular functions, services and populations were concentrated (Christaller and Baskin as cited in Cresswell, 2004). Tuan (as cited in Cresswell, 2004) stated that place is about stopping and resting and becoming involved. Human experience in a space makes it a place. It seems that place must be created from space. As such, the definition of place used here will be: place can be noted when it has invested meaning given to it through human use and experience.

Sense of place

Agnew (as cited in Cresswell, 2004) noted that a place must have a sense of place – but what is a sense of place? Sense of place is a common allusion to what makes a place distinct, special or unique. It suggests a particular feel or specific character that makes a place stand out among other places. Sense of place refers to the emotive bonds and attachment people develop or experience in particular locations and environments (Azaryahu, 2009). As places can have either positive and negative associations in accordance with how they are perceived, the bonds formed can themselves be either positive (including bonds of comfort, safety, authenticity, attachment, belonging and well-

being) or negative (including feelings of fear, dysphoria and placenessness). Sense of place highlights particularities and uniqueness in the human experience of place (Azaryahu, 2009). How someone views a place will determine how they interpret it. A tourist on a cruise ship may view Antarctica as a destination whereas a scientist working out of a research station may view it as a land full of potential discoveries.

The importance of place

Place gives meaning to a space. Cresswell (2004: 2) gives an excellent example of how this can be achieved:

“If we heard that two planes had flown into 40.46°N 73.58°W it would not have quite the same impact as hearing that they had flown into New York, into Manhattan, into the Twin Towers.”

The public hearing that there had been a plane crash in a coordinate location would likely as not be highly regarded. Had they heard instead that there had been a plane crash into the Twin Towers, there would be a highly emotive response. In this ability to denote meaning, scientists also have a certain “power”. They are able to create places from spaces by giving them meaning through identification (Tuan, 1977). A relevant example here being the creation of Marine Protected Areas, These areas are sites that have restricted use due to their importance to the wider ecosystem and to protect them from human exploitation. Before they were given this title, these areas were just another area of the ocean. Now they are protected places due to their invested meaning. Place is important to identity as people identify themselves through attachment to particular places (Azaryaha, 2009). This is evident in New Zealand, a multicultural society, where the ability for communities of people from the same country can get together to celebrate their traditions and common heritage.

Place manifestation and perception

Places are made, maintained and contested (Cresswell, 2004). A park may be seen by families as a safe place to raise kids, whereas the homeless may view the same park as a place for the night. Tuan (in Cresswell, 2004) asserts that we know the world through human perception and experience. Places can be used to assert identity; it is how we make the world meaningful and how we experience the world. For example, Waitangi is seen as an essential part of the New Zealand identity. A tourist visiting New Zealand may visit geysers in Rotorua and go bungee jumping in Queenstown as that may be what they see as an essential New Zealand experience. New Zealanders however may just view these as attractions and not necessarily a part of their identity.

There are many manifestations of place. Cresswell (2004) highlights examples of how place can become manifest. Places can be places of memory and sites of identity and history in a city. That which has happened in the past can characterise a place and lend it its identity. A place is a manifestation of what belongs there. Having a concept of who and what belongs where and when means that those that exist outside of these societal norms are seen as deviant. For example, a

person in Antarctica with a gun would be seen deviant as there are no weapons allowed in the continent. But had they been in America (with the proper licence) it would not be seen as deviant as it is a societal norm.

Places are recognised by their unique settings. A place achieves concrete reality when we completely experience it (Tuan, 1977). Tuan (1977) also notes that culture and experience strongly influence perception and interpretation of an environment. One who has experienced long residence in a place will likely have an intimate knowledge of a place, whereas another place may lack the weight of reality due to a lack of experience there. Those who have the privilege to spend time in Antarctica tend to form an attachment to the continent and regard it fondly. Someone removed from the continent, such as a resident of Thailand, conversely, may regard it as a cold, white, unappealing place. Perspective of experience stresses the uniqueness of places as a function of human experience rather than an inherent, objective quality of the place (Azaryaha, 2009).

Perception is a learned process, and not simply a response to stimulus. People often see in an object what they anticipate, rather than what is actually there. Memory and experience can condition how a place is seen (Simpson-Housley, 1992). The perception of people dealing with a scientific fact is as accurate and real as the scientific facts regarding the issue (Trapasso, 2001). With forthright and uncontested scientific evidence, such as the existence of gravity, people tend to have a more accurate view of the subject. Where contested scientific evidence exists, such as climate change, the contested views are reflected in the public. The public view can also be reflective of mass media portrayal. The evolution of our perception of the Antarctic from an unknown space to a comprehensible place can be traced through its portrayal in visual art (Fox, 2005). Human understanding of Antarctica has developed as there has been more exposure to it through the visual arts.

Place in Antarctica

Antarctica is a vast place which is gaining international interest. But according to Glasberg (1998) on a global scale, Antarctica fails the test of place as it has no indigenous population, little human history, no accessible resources and no landscape to be apprehended under aesthetic visual regimes. Place is understood in relation to populations and specific cultures. The culture of Antarctica could be said to be predominantly scientific. But as with any culture, deviations can exist on regional levels, such as between stations. This view of Antarctic place seems to put it in direct comparison to place identity of the rest of the world where there has been permanent human presence for hundreds of years, as compared to 50 years in Antarctica. Using this example, place could be said to be merely indicative in Antarctica. Further arguing for the weakness of place in Antarctica is Rowell (1995) who asserts that sense of place is weakened by the distinct feeling of a place without borders. With its wide white expanses, Antarctica could be said to be a borderless place, therefore potentially suffering from a weakness of place. Comprehension of environments quite unlike our own escapes us unless we can relate them to the world we know (Rowell, 1995). As Antarctica is quite unlike most of the rest of the world, and in this case, quite dissimilar to New Zealand, it can make interpretation difficult. This is in accordance with Simpson-Housley's (1992) findings where the misperceptions of Antarctica were attributed to the sheer strangeness of the

southern continent, the prevalence of mirages, and the inability to determine exact location through difficulties of calculating longitude.

Despite this, Antarctica is a popular place. Existing research suggests that Antarctica is highly valued by the populace at large (Neufield, O'Reilly, Summerson and Tin, in press). There has been numerous meanings associated with Antarctica. These include a scientific laboratory, a potential resource source and a source of political influence (Neufield et al., in press). Despite the expanse and unfamiliarity of the Antarctic region, Antarctica is a place which people can connect with. Polar regions have the ability to seamlessly merge with each person's known world until their mysteries begin to stand out in bold relief (Rowell, 1995). Here they can be identified and interpreted within the individual's realm of knowledge. Those that travel to Antarctica have found the continent exerts a unifying force, bringing them closer through shared experience (Mocellin, 1988). Early explorers, in contrast, saw the Antarctic in a negative perspective due to traumatic experiences. The importance of Antarctica is increasing. Antarctica is seen as the world's last great wilderness. As pristine, untouched, and wild areas disappear in the world, what wilderness does remain will become even more important (Neufield et al., in press).

Method

To answer the focus question of why New Zealanders travel to Antarctica, qualitative research methods were used. This meant that the proper humanistic responses could be accurately recorded and effectively translated into data at a later date. Initially it was decided to convey this research in audio-visual form. Due to a lack of footage taken whilst in Antarctica, this was revised to a written report approach.

Interviewing

In order to gain an understanding of how New Zealanders viewed Antarctica it was decided to interview New Zealanders who had visited the continent. Interviewing encourages individuals to share rich description of phenomena. In this case: Antarctic perceptions. Targeting individuals who have experienced Antarctica allowed for the provision of rich and in-depth information about the place and experiences. Including those who had not been to Antarctica could potentially lend the results towards more superficial concepts, likely influenced by the media.

Interviews are used to find information from people what we cannot directly observe. Interviews have been found to be a useful research methodology for exploring meaning and perception to gain a better understanding on a given issue (DiCicco-Bloom and Crabtree, 2006; Hannabuss, 1996; Knox and Burkard, 2009). They are among the most common qualitative data collection methods. Interviewing has its natural basis in human conversation and allows the researcher to adjust the pace and style of asking questions to bring out the best in respondents (Hannabuss, 1996). In order to have a proper conversation with interviewees and attempt to elicit the best possible responses, a

semi-structured interview was to be used. This ensured that certain aspects were covered but also meant that should new avenues of interest arise, that the conversation could evolve accordingly.

The interview, as a research tool, aims to establish a context-free truth about objective reality, producing relevant responses with minimal persuasion (Qu and Dumay, 2011). The truth is not always able to be gained though. As in any cases when dealing with human responses, there is the potential for misinformation to be presented as the interviewee tells the interviewer what they think they should be saying rather than answering the question from their own perspective. Other environmental factors, such as location, can also affect the data collected. Interviews enable the researcher to gather information from a range of individuals to contribute to a wider body of conceptual knowledge.

Despite the potential interviews have to gather extensive and in-depth knowledge, they were revised as the choice for data gathering for this project. Interviews are intensive and time-consuming which runs the risk of covering a small and possibly unrepresentative sample of respondents (Hannabuss, 1996). Due to a lack of organisation, the time in which to find and interview interested parties was not conducive to the production of good results. Bearing this in mind, the research approach was revised in order to sample a larger proportion of the targeted population.

Surveying

The data collection method was revised from interviewing to surveying. Surveying allows a larger proportion of the targeted population to be targeted and less intensive per capita. For the survey to be distributed as widely as possible, an online format was chosen. This meant that the survey could be shared nationally, immediately, rather than having to confine the targeted population to the Canterbury region, as would have been the case had interviews been used instead. Due to the survey structure (Appendix 1), the regional representation of the respondents cannot be commented on as location was not an included question.

The main pitfall of this method compared to a semi-structured interview is the inability to develop the questions to pursue ideas that might develop over the course of questioning. A set questioning format does allow for the data to be analysed and compared with much greater ease compared to a constantly evolving range – of which there may result no constant themes.

In the survey both open and closed question format was used. These enabled respondents to provide direct answers to questions, as well as go into greater detail about certain aspects. The closed questions ensured that the data collected would be easy to analyse. The pitfall of this style question though is that respondents do have to confine their answers to the option provided. Open ended questions allow more freedom of expression by respondents. They are able to provide their own perspective on the questions at hand. For the open ended questions examples were provided. This could potentially lead itself to being a source of error, as respondents tend to confine their answers to the choices offered despite this not being the purpose of the question (Krosnick, 1999).

Choosing the survey method over interviewing meant that a larger population could be targeted. To do this, an advertisement was run in The Press, and an email was circulated around the New Zealand Antarctic Society with the survey link. Seeking respondents in this way, I was hoping to get at least

20 respondents for survey participation. The advertisement did not gather as much interest as I had hope, only getting one email response. The link was also provided to PCAS members in the hope of getting at least 5 responses from this group. The survey was hosted using a Google document. This document was revised during the surveying phase as glitches were periodically discovered. It is likely that, because the document was not operating smoothly, I lost the interest of potential respondents.

Results

Due to the fact that there were only three responses to the survey, no conclusive results can be drawn, despite best efforts to attract as much interest to participate in this research as possible.

Demographics

The respondents consisted of two male (40-49 and 50-59yrs) professionals and one female student (20-29yrs).

The Antarctic experience

One participant travelled to Antarctica in 1978, one in 2011 and one in 2012. All indicated that they had a significant interest in travelling to Antarctica prior to their trip. All respondents indicated that there were elements of their first experience that surprised them. All were surprised by the “scale and enormity of the environment” (survey response). One respondent was also surprised at the level of regulation around activities, though did not say if they felt that this was a positive or negative impression. Though examples were provided for attributes associated with Antarctica, there were no common answers across all three respondents. Common themes in response to this question included environmental aspects (including features and concerns), the continent's history, and a challenging, harsh environment.

The importance of Antarctica

The importance of Antarctica was assessed using a scale of 1 (unimportant) – 10 (very important). All respondents gave a rating of 10 when asked how important they thought maintaining a New Zealand presence in Antarctica was. When asked how important they thought Antarctica was to the general New Zealand population, ratings ranged between 7 and 10.

Uses of Antarctica

Respondents were asked to rate the importance of five uses of Antarctica (Appendix 1). The least important use (1) was deemed to be tourism, as indicated by all three respondents. Restoration was ranked at 2, also unanimously. Monitoring was deemed to be the most important with one 5 value and two 4 values. Occupation was deemed to be slightly more important than science. When asked to support the allocated rankings, concerns over the risk of conducting science at the expense of the environment were expressed. The link between occupation and monitoring was made, potentially why together they were deemed the most important uses. One participant also commented on the necessity to maintain a presence in order to support the New Zealand claim to Antarctica. Restoration was seen as a “nice” touch but not deemed to be necessary, and there was very negative views expressed regarding tourism. The argument was made by the female participant that tourism is a good way to create ambassadors, but “visiting the place isn’t 100% necessary to achieve strong ties” (survey response).

Antarctica and New Zealand

Three short questions aimed to establish the importance of Antarctica in a wider New Zealand context. All three respondents considered spending by the government in Antarctica useful, and not at all wasteful. Reasons being that study conducted in Antarctica will be useful in science, economics and for the planets future, though one respondent does recognise that not everyone may see it as useful. Unanimously respondents indicated that Antarctica does need to be protected. It needs to be protected from commercial gain and its wilderness value needs to be preserved. One participant takes the view of Antarctica as a resource stating “The resource needs to be managed in a way that provides for sustainable use of that resource.” When asked if Antarctica formed part of the New Zealand identity, one respondent disagreed, stating “while I think New Zealanders have an affinity for Antarctica, I think outside of Christchurch much less is known about the continent and New Zealand’s involvement with its history.” A view regarding it as part of the New Zealand identity approached this view due to geography and the role Antarctica has on the weather, and historic links.

Discussion

Method

Completing survey research at this time of year was likely detrimental to the research quality. The time period for collecting responses was restricted as a result of much of the New Zealand population being on holiday for at least two weeks in the time when research could have been conducted. It tends to be a busy time of year with people resuming work and children returning to school. Better organisation could have allowed for a longer sampling period. However, had sampling begun earlier, it would have potentially been completely in the holiday period so it is debateable

that this would have dramatically improved response rates. Had this research been conducted at a quieter time of year such as mid to late autumn, it is possible that more responses could have been generated. Fully testing the survey before distributing it would have increased responses. Though I ensured that it worked properly for me, I did not have it tested online by anyone else. As such, issues with the survey execution were discovered by respondents. The unprofessionalism of this approach could likely have deterred respondents from completing the survey. I believe that I drew enough attention to the survey to gather a reasonable enough of participants, but clearly there was a significant pitfall in my method as the response rate was extremely poor.

Results

As there were so few responses, conclusions drawn from their interpretation cannot be said to be representative of the population of Antarctic travellers in New Zealand. They therefore should not be applied to a wider sphere. Recommendations for a longer sampling period at an alternative time of the year, though not practical for this course, would likely yield better response rates in similar studies.

Two respondents travelled to Antarctica in the last three years and one over 30 years ago. Despite this large gap in dates, there was not a significant difference between responses detected in Antarctic attitudes. Nor was there much difference in responses between gender or age. This could be indicative of surveying only those with Antarctic experience, and because of the low response rate. The common themes from the respondents regarding Antarctic aspects were environmental and historic. These aspects included temperature, animals, historic huts and the heroic age impressions. Responses such of these could be said to be evident of knowledge of 'common' aspects of Antarctica. One respondent did mention things such as "katabatic winds" which is evident of higher knowledge of Antarctica.

All respondents agreed that it was important for New Zealand to remain in Antarctica. This could be an indication of the knowledge of the importance that presence in Antarctica holds as a result from travelling there. The respondents considered Antarctica as less important to the general population than what they themselves considered it. This could be an experiential approach though, with a more positive perception of Antarctica by those who have visited owing to a greater bond formed through visitation as opposed to interpreting from a distance, as discussed in *place manifestation and perception*. Rowell (1995) also commented that inspiring people to care about places they do not know and cannot easily define is a major challenge. As Antarctica is so remote and different, this can cause a significant challenge.

Monitoring was deemed to be the most important activity conducted in Antarctica. This was to ensure a high standard of environmental quality, and to track changes that occur on and around the continent and assess how they might affect the rest of the world. Continued occupation was also deemed to be important, but only in support of monitoring and supporting New Zealand's Antarctic claim. Antarctica continues to be significant in emboldening claims to a more benevolent national identity and national character in New Zealand (Dodds and Yusoff, 2005). Tourism was deemed to be the least important activity due to the unnecessary presence of humans on the continent. Neufeld et al. (in press) suggested that there should be no large-scale human activity allowed in Antarctica,

and small-scale activities should be kept for the benefit of not-for-profit purposes, notably science and education. This view seems to be reflected by the respondents in this study. Generally speaking, management should ensure that a balance is maintained between science and wilderness, including the minimisation of stations and other large-scale infrastructure development (Neufield et al., in press).

Case studies

In 2011 Tin, Bastmeijer, O'Reilly and Maher (2011) conducted a study of a European community regarding Antarctic wilderness perceptions. This community had no experience themselves in Antarctica. The study here, as in New Zealand, found that Antarctica was considered important. The aspects rated of greatest importance were its wilderness value and its role in the global climate system. Antarctic environment was something that was noted in New Zealand respondents as important also. The high awareness of Antarctica's role in the global climate system was likely because respondents were from the Netherlands, which is a low lying country, so are aware of the effect that melting icecaps would have. Half of the respondents also noted that Antarctica was important as a "science laboratory for the benefit of all mankind" potentially alluding to a reasonable extent of knowledge about Antarctica possessed by respondents prior to participating in this study. When advised of the annual visitor numbers to Antarctica, respondents deemed that the rate of visitation to Antarctica currently is too high, which is reflected in the respondents to this research of concern over high tourist use. This is likely reflective of the respondents desire to preserve Antarctica's wilderness values.

In a 2010 study conducted by Enrique and Mariano, attitudes of young Argentines (15-35) to Antarctica were assessed. With such close ties to Antarctica, one would potentially expect there to be more awareness of Antarctica and its issues by the residents of Argentina. However, the Netherlands do have better levels of education than Argentina (Nation Master, 2013), so this could lend them to be more knowledgeable about the world around them. Responses regarding Antarctic perception included viewing Antarctica as an experience, belonging (both part of the natural environment) and as a symbol (for peace, cooperation and expression of creation), similar to the findings in New Zealand. Around 30% of respondents identified Antarctica as part of their national identity, reflecting the close ties of Argentina and Antarctica. Despite this, 33% of respondents exhibited indifference towards the continent. Potentially a reflection of education levels, less than 50% of respondents were aware that Antarctica faced environmental issues, showing the lack of knowledge the youths had regarding issues Antarctica is facing.

As the last frontiers, the Polar Regions are still perceived as wastelands. Many of the wastelands of the nineteenth century have undergone complete reversal in public perception and are now considered places of wild beauty to be set aside for posterity (Rowell, 1995). Consideration should be put in place to ensure that as much of Antarctica as possible remains in its original condition (Neufield et al., in press). In this instance I believe it would be worthwhile investigating how these places have undergone such transformations and seeing what lessons can be learned and translated to improving the global perception of Antarctica. Antarctica's future is shaped by both people with

and without direct experience of the continent, through individual experiences, behaviours, cultures and systems (Neufield et al., in press).

From the information gathered, we can make a few assumptions. Though Antarctica is seen as important, it does not necessarily form part of the New Zealand identity. New Zealanders have an affinity for Antarctica through shared experiences such as the Trans Antarctic Expedition and the Mount Erebus disaster, this could be the limitation of the connection, but this research suggests that it is deeper than just an affinity. The participants do realise the importance of Antarctica and maintaining a high environmental standard there, potentially as a result of visiting the continent. As such the support is evident for the desire to maintain a presence on the continent, with the purpose of information gathering for the benefit of mankind without detriment to the environment.

Conclusion

In response to the focus question of 'why Kiwi's fly South' there are two answers that can be given as a result of the research conducted. The first is to maintain a presence in support of New Zealand's claim to Antarctica under the Antarctic Treaty. Monitoring the Antarctic environment through observation and research was found to be of primary importance to the respondents and is a key component of the scientific activity that New Zealand conducts in Antarctica. Improving our environmental knowledge and awareness can therefore also be said to be a key reason why New Zealand engages in Antarctic activity.

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Appendix 1

Why Kiwi's Fly South: An Assessment of New Zealand's Place in Antarctica

Information text

Thank you for your interest in participating in my research. This survey is being conducted in order to collect information for a research project as part of the Postgraduate Certificate in Antarctic Studies offered through the University of Canterbury. As a student with a Geography background, I am applying my skills in an Antarctic setting. Having recently visited Antarctica myself, the experience has highlighted to me the wide range of people that engage in activity through and in support of the New Zealand operation. As such, I am interested in identifying how New Zealanders view Antarctica and in establishing how these views have developed over time.

This research aims to gain a better understanding of the wide range of perceptions of Antarctica, with specific focus on New Zealanders that have engaged with Antarctica, and how Antarctica feeds into their sense of identity.

This online survey is designed to capture some of New Zealanders' opinions about and interpretations of Antarctica. I value your thoughts, no matter whether or not you have visited Antarctica or have been exposed to information about Antarctica through the media. Please answer all required questions.

This project has Human Ethics approval through the University of Canterbury. Your participation in this survey is voluntary, and your responses will be anonymous. If, at any stage, you should choose to withdraw your responses, please contact me at nlc26@uclive.ac.nz for this to be arranged. This survey takes approximately 20 minutes to complete, and I thank you in advance for taking this time to support my research project.

Section 1

1. Have you been to Antarctica?
 - a. Yes
 - b. No
2. When did you visit?
3. What motivated you to go to Antarctica?
4. Did anything about your first experience surprise you?
 - a. Yes
 - b. No
5. What surprised you?
6. What attributes do you associate with Antarctica? (e.g. temperature, wildlife, scenery, etc.)
7. Rate the importance of maintaining a Kiwi presence in Antarctica (scale of 1 (unimportant) to 10 (very important))

8. Rate the importance of Antarctica to the wider New Zealand public (scale of 1 (unimportant) to 10 (very important))

Section 2: Rank the following aspects of Antarctic operation in terms of importance from 1 (least important) to 5 (most important)

9. Tourism
10. Restoration
11. Scientific research
12. Occupation (maintaining a presence on the continent)
13. Monitoring (animal populations, weather patterns, ice extent, etc.)
14. Please provide your reasoning for assigning these values

Section 3

15. It is a waste of money to study Antarctica
 - a. True
 - b. False
16. Why?
17. Antarctica needs to be protected
 - a. True
 - b. False
18. If yes, why does it need protecting?
19. Antarctica forms part of your identity as a New Zealander
 - a. True
 - b. False
20. Please provide a reason for your choice
21. Any further comments you wish to make regarding your view of Antarctica

Section 4: Demographics

22. Gender
 - a. Male
 - b. Female
 - c. I do not identify with a gender
23. Age
 - a. 20-29
 - b. 30-39
 - c. 40-49
 - d. 50-59
 - e. 60-69
 - f. 70+

24. Profession

25. Highest level of education

- a. Postgraduate qualification
- b. Undergraduate qualification
- c. Professional training
- d. NCEA/bursary/GCSE/High school level equivalent
- e. Other

Thank you for your participation in this survey. Your responses will remain anonymous. The information you have provided me will go towards identifying common themes of New Zealand's perception of Antarctica.

If you have any further queries, please feel free to contact me directly (nlc26@uclive.ac.nz) or my supervisor (Daniela Liggett: Daniela.liggett@canterbury.ac.nz).

Thank you once more,

Nicole Calder-Steele.