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Supervised Project

Voyage to the South: Selection and social-psychological implications on polar personnel

By Chiu-Pih Tan
Student I/D: 42814889

Supervisor: Dr Gary Steel
What influence might the different selection procedures have on social-psychological phenomena among the polar personnel? –
A case study of British Antarctic Survey (BAS) and Antarctic New Zealand (AntNZ)

EXECUTIVE SUMMARY

A review of literature suggested the importance of social-psychological adaptation among the polar personnel (i.e., scientists and support personnel) in Antarctica. Most research investigated biomedical, socio-psychological, and performance issues related to working and living on the ice, but insufficient research has been done in comparing and contrasting the deployment practices for these polar personnel (such as recruitment and selection, training and development, on-site support, and re-entry) in different national Antarctic programmes (NAPs). This becomes more crucial, from socio-psychological perspectives, with the increasing diversity within the workforce (e.g., socio-cultural, demographical, and occupational backgrounds, language) in NAPs, international collaboration with scientists who work and share facilities on the ice, and increasing demand for logistic support for scientific and non-scientific activities.

This paper reviews the selection process and criteria for polar personnel use by two NAPs and leads to the main research question: What influence might the different selection procedures have on social-psychological phenomena among polar personnel? - A case study of New Zealand (AntNZ) and British Antarctic Survey (BAS). Using a case study approach, models and theories related to employment selection were analysed in light of known polar social-psychological issues. Objective and subjective measures such as semi-structured interviews, documents, and websites were used for data collection.

The finding shows that both NAPs are unique in terms of their organisational backgrounds (e.g., size, structure, system, and requirements for polar personnel and human resource support). For examples, BAS deals with larger, wider, and diverse range of recruits (e.g., scientists and support personnel; different nationalities) for different research stations and ships with different requirements (e.g., length of missions and types of job requirements); AntNZ deals with smaller group of support personnel for SB for both seasons. These might have implications on their selection methods (e.g., choices of interview questions and techniques).

Interestingly, both NAPs suggested: 1) polar selection is a complex mechanism; 2) the importance of finding the right mix of polar crew (including the balance among task and social abilities, as well as emotion stability); 3) the importance of training; 4) meeting work role requirements in a labour market characterised by a scarce supply of some professions; and 5) ways to overcome some organisational challenges to improve the adaptation of polar personnel.

Although putting the ‘right ones’ in the ‘right place’ at the ‘right time’, is the first and most critical step to increase the likelihood of polar adaptation, various factors might affect personnel adaptation during various stages of the deployment in isolated and confined extreme (ICE) environments. For examples, social-cultural factors (e.g., crew compositions), techno-structural factors (e.g., mission attributes, habitability and life support, and physical conditions), and learning factors (e.g., training) (Taylor, 1987, 2002; Palinkas, 1997, 2000, 2003; Suedfeld & Steel, 2000; Illeris, 2004; Sandal et al., 2006). In addition to the above, due to different Antarctic and selection experience of the participants; limited access to more participants in the NAPs; and time constraint for using more mixed methods approach for this study, one should be aware of the implications of these limitations and treated the findings with cautious. Therefore, future research should take a holistic and longitudinal approach to look into the dynamic process of human adaptation begins from, but not ended in, selection process.
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<th>Description</th>
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<td>AEP</td>
<td>Antarctic Employment Pool, BAS</td>
</tr>
<tr>
<td>AFT</td>
<td>Antarctic Field Training, New Zealand</td>
</tr>
<tr>
<td>ALD</td>
<td>Administration and Logistics Division, BAS</td>
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<td>AntNZ</td>
<td>Antarctic New Zealand</td>
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<td>ATS</td>
<td>Antarctic Treaty System</td>
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<td>BAS</td>
<td>British Antarctic Survey</td>
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<td>BASMU2</td>
<td>British Antarctic Survey Medical Criteria (form)</td>
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<td>BAT tax</td>
<td>British Antarctic Territory tax</td>
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<td>CEA</td>
<td>Collective Employment Agreement, New Zealand</td>
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<td>COMNAP</td>
<td>Council of Managers of National Antarctic Programme</td>
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<td>DSIR</td>
<td>Department of Scientific and Industrial Research, New Zealand</td>
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<td>EAP</td>
<td>Employee Assistance Programmes, New Zealand</td>
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<td>EEO</td>
<td>Equal Employment Opportunity</td>
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<tr>
<td>EID</td>
<td>Environment and Information Division, BAS</td>
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<td>FIDS</td>
<td>Falklands Island Dependency Survey</td>
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<td>HR</td>
<td>Human resource</td>
</tr>
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<td>HSE</td>
<td>Health, Safety, and Environmental</td>
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<td>ICE environments</td>
<td>Isolated and confined extreme environments</td>
</tr>
<tr>
<td>IGY</td>
<td>International Geophysical Year</td>
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<td>IPY</td>
<td>International Polar Year</td>
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<tr>
<td>INACH</td>
<td>Instituto Antártico Chileno (Chilean Antarctic Institute)</td>
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<tr>
<td>KSAOs</td>
<td>Knowledge, skills, abilities, other attributes</td>
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<tr>
<td>MFAT</td>
<td>Ministry of Foreign Affairs and Trade, New Zealand</td>
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<td>MORs</td>
<td>Monthly Operation Reviews, AntNZ</td>
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<td>NAP</td>
<td>National Antarctic Programme</td>
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<td>NZAI</td>
<td>New Zealand Antarctic Institute</td>
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<td>NZDF</td>
<td>New Zealand Defence Force</td>
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<tr>
<td>NERC</td>
<td>Natural Environment Research Council, United Kingdom</td>
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<td>NZAP</td>
<td>New Zealand Antarctic Programme</td>
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<tr>
<td>PPR System</td>
<td>Personal Performance Review (PPR) System, AntNZ</td>
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<td>Standing Committee on Antarctic Logistics and Operations</td>
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<td>SCAR</td>
<td>Scientific Committee on Antarctic Research</td>
</tr>
<tr>
<td>SB</td>
<td>Scott Base, New Zealand</td>
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<td>TAE</td>
<td>Trans-Antarctic Expedition</td>
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<tr>
<td>TDRs</td>
<td>Tasks, duties, responsibilities</td>
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CHAPTER 1: INTRODUCTION

1.1 Overview

Isolated for 140 million years, Antarctica was not fully mapped until 1950s. Although human adaptation issues in Antarctica have been recorded as early as the 1800s in the personal diaries of polar explorers, the importance of crew selection criteria come under the spotlight in Shackleton's newspaper advertisement in 1913: "Men wanted for hazardous journey. Small wage, bitter cold, long month of complete darkness, constant...Safe return doubtful...and recognition in case of success." Approximately 5000 applications applied for 28 job vacancies (Taylor, 1987, p17).

Crew selection and human adaptation have certainly attracted much attention since International Geophysical Year (IGY) 1957/58 when the demand for support increased and national Antarctic programmes (NAPs) were set up to support increased scientific projects, research stations and facilities, as well as campsites (Rothblum, 2001; Fogg, 2007). Today, predominant polar personnel who go south are scientists and support personnel. There are at least 64 research stations and facilities operate during summer and/or winter and 60 countries are involved in scientific research during the International Polar Year (IPY) 2007/08 (www.comnap.org/operations/facilities; http://classic.ipy.org/development). Besides that, increasing use of civilian instead of military as support personnel in some NAPs and the advancement of technologies (e.g., communication, transport, and human resource know-how) over the past 50 years present an interesting question on how the deployment practices and needs might have changed alongside with these developments (Nelson, 1968; Owen, 1975; Gunderson, 1973; Gunderson & Palinkas, 1998; Selection, 1984; Taylor, undated, 1987; Hanson, 1992; Rothblum, 2001; Grant et al., 2007).

From the aspect of habitat, polar environments (e.g., research station, weather station, field camp, or research ship) are unique workplace as polar personnel has limited privacy (due to the isolated and confined working and living environment, often in research stations range from less than 10 to more than 1000 people in the case of McMurdo; absent of 24 hour day (i.e., total darkness or daylight); and extreme environment, to name a few (Suedfeld & Steel, 2000; Rothblum, 2001; Sandal et al., 2006). The main research interests on human/social science in these isolated and confined extreme (ICE) environments (Palinkas, 2003) and capsule environment (Suedfeld & Steel, 2000) include the following aspects:

- Health, safety, and environmental aspects
- Selection and human performance
- Social-psychological aspects
- Support needs: Human, logistic, life, and real-time support; crew member and crew-ground interactions; abort and fast return capability (Training: pre-, during, and post-ice)
- Design, facilities, and support technology
- Applications of Antarctic human/social science for other settings especially for prolonged missions (e.g., space missions, isolated field and weather stations, submarines, and offshore drilling rigs)

A review on literature suggested although information are shared within Antarctic-related network such as the Council of Managers of National Antarctic Programme (COMNAP) and Standing Committee on Antarctic Logistics and Operations (SCALOP), insufficient academic research has been done in comparing and contrasting the deployment practices (e.g., recruitment and selection, training and development, on-site support, and re-entry) of polar personnel in different NAPs, from a mix of human resource and psychology perspectives. This becomes more crucial, with the development of the NAPs over the last 50 years in terms of operational and manpower needs; increasing diversity within the workforce (e.g., socio-cultural, demographical, and occupational backgrounds, language) in NAPs; international collaboration in sharing support and facilities on the ice; and increasing demand for logistic support for scientific and non-scientific activities (http://classic.ipy.org/development; www.comnap.org/operations/facilities). This paper aims to review the selection process and criteria use by two NAPs and their social-psychological implications on the polar personnel.
1.2 Research question and objectives
What influence might the different selection procedures have on social-psychological phenomena among polar personnel going south? - A case study of Antarctica New Zealand (AntNZ) and British Antarctic Survey (BAS).

In order to answer the above question, this research aims:
1. to review the selection methods and criteria use by the selected Antarctic national programmes;
2. to identify and discuss their potential social-psychological implications for polar personnel;
3. to discuss the challenges faced by these Antarctic national programmes and polar personnel; and
4. to provide recommendations to meet those challenges, where possible.

Various models and theories related to employment selection and social-psychological issues were reviewed from cross-disciplinary perspectives, ranging from organisational, management, and social science, to psychology. Conceptual theories and models were examined via multiple case studies approach. Objective and subjective measures such as semi-structured interviews, documents, and websites were used for data collection.

1.3 Significance of study
Polar environments are ideal place for the study of employment selection and their social-psychological implications for at least two reasons: 1) the unique nature of polar environments and holistic model of employment selection and polar adaptation; and 2) the mission and psychological health of the polar workforce.

As a natural laboratory, polar environments present an opportunity for the testing of a holistic model of employment selection and polar adaptation (Suedfeld & Weiss, 2000). Isolated work communities and ICE environments offer relatively fewer and unique variables or distractions, as compare with other common workplace, for the study of selection methods and social-psychological adaptation on the ice (Palinkas, 1997, 2000, 2003; Suedfeld & Steel, 2000); that is to say, the feedback from human adaptation can further improve the effectiveness and efficiency of the selection practice of NAPs. In turn, improved selection practices will promote the crew adaptation in terms of improve physical and social-psychological well-being and performance in achieving their mission in ICE (Palinkas, 1997, 2003; Palinkas et al., 2004; Suedfeld & Steel, 2000; Sarris, 2006). In sum, this research will add to the body of scientific knowledge about polar psychology and contribute to a healthier polar workplace.
CHAPTER 2: LITERATURE REVIEW

This chapter reviews the issues related to organisation, human resource management system (in particular recruitment and selection) and their social-psychological implications on polar personnel. A framework is proposed here for the purpose of this study.

2.1 Organisational and human resource system
NAP manages and supports the logistic and scientific needs for those going south; and that its missions and operations are guided by government’s scientific, social-cultural, economic, and political interests and strategies as well as other external stakeholders such as associate political (e.g., Antarctic Treaty System/ATS), scientific (e.g., Scientific Committee on Antarctic Research/SCAR), and logistic agencies (e.g., COMNAP). Therefore, its organisational design, including recruitment and selection system, is very much reflecting this unique nature. Although this project focuses mainly on the recruitment and selection mechanism within NAP, it is important to note that successful adaptation to the polar environments depending on other organisational system, including the interrelationship of other human resource management functions: 1) human resource planning; 2) job analysis and design; 3) performance management system; 4) health and safety; 5) compensation system; 6) human resource information system; 7) industrial relations; and 8) human resource development system (e.g., organisational development, career development, and training and development) (DeSimone & Harris, 1998; Noe, 2002; Dessler, 2003). Therefore, these factors will be discussed in brief.

2.2 Selection, psychological, medical, and intellectual “fitness” for deployment
Due to the high risks, challenges, and cost of operating in Antarctica, selection of personnel for deployment are critical aspect for the accomplishment of missions, especially for pro-longed missions such as winter-over in Antarctica (Grant et al., 2007). The challenges of employment selection often relate to the most effective and efficient methods and criteria for choosing the ‘right ones’; when the selection is done ‘off-the-ice’ for ‘on-the-ice’ missions (i.e., the design of selection mechanism and panel play a critical role in this aspect).

2.2.1 Models: Human resource planning, job analysis, recruitment, and selection process
The general model for recruitment and selection practices has not changed for the last 15 years, although the specific methods and techniques used in each human resource management function might have: human resource planning, job analysis, recruitment and selection (refer to Model 1, 2, and 3, below) (Adapted from Robertson & Smith, 2001; Dessler, 2003). These changes often depend very much on the organisational system, culture, resources, people, job nature, and the work environment (Robertson & Smith, 2001; Dessler, 2003)

As an example, although job analysis (refer to Model 1) continues to serve as the fixed starting point for all subsequent steps in the selection process; the dynamic and rapid changes in work-related technology, work practices, and organisational forms within the lifetime of an individual or within a specific decade, has changed the approach of human resource planning and job analysis, mainly from traditionally task-oriented job analysis to more flexible approach that focuses on the task and cross-functional skills of workers (Robertson & Smith, 2001). In other words, the use of flexible databases that contain information such as personality, cognitive behavourial, and situational variables may increase the sophistication of the job analysis exercise and thereafter the recruitment and selection processes (ibid, 2001).

In general, the outcomes of job analysis are job/position/role description (i.e., tasks, duties, responsibilities/ TDRs), and job/position/role specification (i.e., knowledge, skills, abilities, and other attributes/ KSAOs) (Dessler, 2003). Upon recognising the needs for manpower, human resource personnel decide to recruit internally (usually consists of closed system or job posting) or externally after making decisions on the methods, media, and techniques to reach the target pool of candidates (refer to Model 2) (Dessler, 2003). Once the pool of recruitment is ready, selection process begins. A typical selection process involves initial screening; testing (e.g., job-related tests and psychological battery); interview; background check (e.g., personal background check and employment background check); pre-
employment check (e.g., medical examination); and job offer (Dessler, 2003) (refer to Model 3). However, the order of the selection steps, criteria, methods, and techniques used for each step, are depending on the organisational system, culture, resources, people, job requirements and its work environment (Robertson & Smith, 2001; Dessler, 2003).

Research Framework

Model 1: HR Planning, Job Analysis, Recruitment, and Selection

- Human Resource (HR) Planning
  - Job Analysis = Job Description (TDRs) + Job Specification (KSAOs)

Model 2: Recruitment Process

- Head of Department Identify the Job Vacancy + Submit to HR Dept: Request For Staff Form + Job Description & Job Specification
- HR Determine Appropriate Recruitment Sources: Internal or External Sources
- Methods (e.g., Advertise), Media (e.g., Newspaper), Techniques (e.g., Writing Ad)

Model 3: Selection Process

- HR Department
- Application Form
- Initial Screening
  - Selection Test(s)
  - In-depth Interview
  - Background Check
  - Pre-employment Check
  - Job Offer

Notes:
1. TDRs-Tasks, Duties, Responsibilities
2. KSAOs-Knowledge, Skills, Abilities, Others

Adapted:
2.3 Selection as a social process

Selection is suggested to be a social process based on academic literature (e.g., social psychology aspect) and organisational selection systems perspectives (Herriot, 2002). First, selection is a two-way interaction and intersubjective process instead of just one-way objective evaluation (ibid, 2002). Second, recruitment and selection is the first step to an employment relationship that might later develop into psychological contract between the two parties (ibid, 2002). Lastly, both parties may exit the relationship at any given point during the selection process (refer to Model 3, above).

According to Herriot (2002), at least five social theories can be used to explain the dynamic between the interviewer and interviewee during selection process. First, the theories of self propose that self acts as the actor (seeking to impress others) and reflector (conscious of self-evaluation). Second, the theory of social relationships proposes that individual in selection process “both affecting and being affected by the selves of others.” (p. 386). Third, social identity theory suggests that the stronger a person holds a social identity (e.g., shared beliefs, values, and norms) with a perceived members of a social group or category of persons, the likeliness they are to perceive others who do not share it to be in differ and therefore “not fit” in his or her social group. Fourth, self-categorization theory, an extension of social identity theory, proposes that “identities are cognitively represented as category” and individual tends to perceive a situation in a particular way and therefore response to the situation based on the degree of centrality of a particular category (p. 386). The more prototypical (i.e., an ideal type of a member of the category) an individual member’s of a category, the more they associate themselves with the category, and therefore less likely to possess a wide variety of other category memberships. Lastly, it is suggested that the experience and expression of emotion (e.g., pride, anxiety, and anger) change according to the development of social interaction or social episodes associate with self-esteem and self-categories. In addition to the above, prior to the employment selection, a process called self-selection might have took place by the applicant to choose to apply for the job (Evans & Lepore, 1997).

Although it is beyond the scope of this project to discuss the above research in-depth, these theoretical development in social psychology have been applied to work and organisational psychology in areas such as socialisation, leadership, decision-making, power, productivity, and emotion at work (Herriot, 2002). They may serve as a background to understand how selection is implemented in NAPs and their implications on social-psychological adaptation of the polar personnel going south; the group dynamic of crew going south (e.g., social network); the roles of interviewers in selection process; the interactions between interviewers and interviewee during the interviews; and the relationship among selection and other human resource functions (refer to Model 1, 2, and 3, above).

Via versa, the findings of social-psychological adaptation issues and factors might help human resource personnel to further improve their selection process, as discussed in this paper.

2.4 Social-psychological issues in polar environments

Social-psychological research in Antarctica has covered a diverse set of topics: physiological and psychological adaptation and stages (Gunderson & Palinkas, 1998; Suedfeld, 1998; Taylor, 1998; Palinkas & Houseal, 2000; Steel, 2001; 2005); polar self image (Rosnet et al., 2000); perceptions of ICE (Burns & Sullivan, 2000); psychological support and countermeasures (Schmidt et al., 2005); psychiatric disorders in Antarctica (Palinkas et al., 2001, 2004); mission objectives in Antarctica (Dudley-Rowley, 1999); crew size and time (e.g., duration of missions; mission interval; cycle; winter vs. summer) (Dudley-Rowley, 1999; Dudley-Rowley et al., 2001; Weiss & Gaud, 2004); sex/gender issues in Antarctica (Leon & Sandal, 2003); composition of crew: homogeneous vs. heterogeneous (e.g., cultural issues such as crews from collectivism society vs. individualistic society); group development, dynamic, autonomy, roles; inter- vs. intra-group; social and communication network; leadership; decision-making; problemsolving; support; and performance (Dudley-Rowley, 1999; Steel, 2000; Tafforin, 2004; Schmidt et al., 2005; Nolan, 2005). Most of the factors that are affecting human adaptation and performance are summarised in Figure 1, below. For examples, physical condition; habitability and life support; crew characteristics; and mission attributes (Sandal et al., 2008).
Figure 1: Factors affecting human adaptation in isolated and confined extreme (ICE) environments

- **Physical condition**
  e.g., temperature, microgravity, weather condition, dark-light cycle

- **Habitability and life support**
  e.g., space, noise, facilities, and supplies

- **Crew characteristics**
  e.g., size, heterogeneity, member attributes (previous experience, profession, training, gender, age, culture)

- **Mission Attributes**
  e.g., task, workload, duration, danger, communication with outside

- **Individual psychological adaptation**

- **Performance, error management, safety**

- **Group Dynamic**

- **Individual health and well-being**


Many of these findings have been discussed in terms of the process of polar adaptation and performance. For example, four stages of adaptation patterns are observed in winter-over crews in Antarctica (Gunderson & Palinkas, 1998; Suedfeld, 1998; Taylor, 1998; Palinkas & Houseal, 2000; Steel, 2001). During the first stage, crews attempt to adapt to the physical environment, routine of work and live, and workload. Second stage starts after the crews adapt fully to the novelty of the living conditions but have yet to adjust to a second wave of challenges that arise from the inherent social and physical monotony of the environment. The third stage (or third-quarter phenomena) usually involves severe stressors cause by (social) monotony and boredom related to hypo activity and hypo stimulation, isolated of family and friends, and restricted social contacts within small group. Symptoms including emotional stability, hypersensitivity, depressive reactions, decline of motivation and vigour are possible. It should be noted, however, that research into ‘salutogenic’ effects has indicated that not all impacts are negative. There are several psychological health-enhancing outcomes of a winter stay. The fourth and final stage occurs shortly before the end of the mission where feelings of euphoria and uncertainty have been observed prior to their return to the ‘civilised world’.

Although there are insufficient longitudinal studies that link personnel selection to social-psychological issues, most of the issues mentioned above originated, in part, from the selected composition of crew going south. Interestingly, although advancement of technology (e.g., telecommunication and logistic support) has improved the life of those going south since 1960s, three types of abilities have been identified and remain valid for successful adaptation to polar missions: Task abilities, emotional stability, and social ability (Nelson, 1968; Gunderson, 1973; Taylor, 1987, 2002; Steel et al., 1997; Palinkas, 2003; BAS1, 2007). It is therefore, interesting to see how this might reflect in the selection methods and criteria use by NAPs in this study.
2.5 Selection methods and criteria
One of the challenges in selection process is the selection criteria, usually develop from job analysis (Robertson & Smith, 2001; Dessler, 2003). Various selection methods are therefore used to identify individual who meet the criteria. Nevertheless, debates on the effectiveness of various selection methods continue to be a challenge for human resource professionals, psychologists, management, and organisation as a whole. Figure 2 shows a meta-analyses of 17 selection methods (Schmidt & Hunter, 1998). The methods on the left side of the figure deal with their validity with respect to training outcomes, while those on the right pertain to overall job performance. The figure suggests a consistency between personnel selection criteria and criteria developed from: 1) job performance rating—usually by supervisors (refer to the right side of the chart); and 2) the training needs (refer to the left side of the chart) (ibid, 1998).

![Figure 2: Accuracy of Selection Methods](image)


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2.6 Selection tests and pre-employment check

As an analogue of space environment, selection methods used in polar and space personnel are quite similar (e.g., pre-employment check such as medical and dental; selection criteria; and other assessments such as selection tests and selection interview) (Suedfeld & Weiss, 2000; Musson et al., 2004). Due to the concerns for the physical condition, habitability and life support available in ICE environments, pre-employment check such as medical and dental fitness is therefore critical in the polar selection (BAS1, 2007; BAS2, 2008; ANTNZ1, 2008).

Although there is usually no explicit intellectual assessment used in NAPs as compared with space programmes, psychiatric criteria are usually used for ‘selecting out’ individuals with psychiatric disorders, while psychological criteria are usually used for ‘selecting in’, in an attempt to predict human adaptation and performance in these environments (Grant et al., 2007). The use of psychological assessment for selection is unresolved issues in different NAPs (Olson, 2002; Grant et al., 2007). For examples, while NAPs from US, Canada, Chile, French, New Zealand, and Australia use psychological battery for personnel selection, the selection panel from UK chooses to do without it (Olson, 2002; Grant et al., 2007). Psychological inventory such as NEO-FFI (the ‘Big Five’ personality inventory) is used in some NAPs (Costa & McCrae, 1992; Steel et al., 1997; Sarris, 2006). Similar to the issues in space programmes, the absence of standard criteria for assessing polar personnel performance across NAPs and limited research opportunities have made it difficult to evaluate the predictive utility of personality measures in Antarctica (Musson et al., 2004; Grant et al., 2007). Nevertheless, it is suggested that the use of psychological inventory in the selection methods increases the chance of identifying good performance and reduces the chance of selecting poor performers (Grant et al., 2007).

2.7 Selection interview

Although selection interview is often commented as a controversial selection method, it remains the most popular method use in employment selection, including in NAPs (Wiesner & Cronshaw, 1988; Posthuma & Morgeson, 2002; BAS1, 2007; BAS2, 2008; ANTNZ1, 2008). A meta-analytic investigation of the impacts of interview format (individual vs. panel interview) and degree of structured interview (structured vs. unstructured interview) suggests that: 1) structured interview questions should be developed based on the outcomes of formal job analysis (i.e., TDRs and KSAOs); and 2) when using structured panel interview, consensus panel may be preferable to the statistical combination of individual panel member ratings (Wiesner & Cronshaw, 1988).

Although putting the ‘right ones’ (i.e., individual factors) in the ‘right place’ at the ‘right time’, is the first and most critical step to increase the likelihood of polar adaptation, it should be noted that various factors might affect personnel adaptation during various stages of the deployment in ICE environments. For examples, social-cultural factors (e.g., group compositions), techno-structural factors (e.g., mission attributes, habitability and life support, and physical conditions), and learning factors (e.g., training and workplace learning) (Taylor, 1987, 2002; Palinkas, 1997, 2000, 2003; Suedfeld & Steel, 2000; Frensch & Rünger, 2003; Illeris, 2004; Sandal et al., 2006).
CHAPTER 3: RESEARCH METHODOLOGY

3.1 Scope of study and method of inquiry
The focus of this project has extended to include 'scientists' and the title of the project has been renamed as "Voyage to the South" due to the fact that the employment selection in BAS involves both the scientists and support personnel in a large scale and some of them work on research ships (i.e., going South) instead of "the ice" or "in Antarctica".

Literature from cross-disciplinary perspectives, including organisational, management, and social science, and psychology (e.g., industrial and organisational psychology, personnel psychology, polar psychology, and applied psychology) are selected for review. Conceptual theories and models are tested via multiple case studies approach between the selected NAPs. Objective and subjective measures such as journals, reports (e.g., corporate documents), websites (e.g., Antarctic national programmes), and semi-structured interviews with recruitment and selection personnel were used for data collection, as shown below, in the 4 stages of process between December 2007 and January 2008.

3.2 Research stages
Stage 1: Background studies and preparation for research
Background studies were conducted ranging from polar psychology, to human resource practices, such as the elements shown in Model 1-3 and Figure 1, above. Approval of project proposal and human ethic application were obtained and initial contact with NAPs such as BAS, Chilean Antarctic Institute (INACH), and AntNZ was conducted in early December 2007.

Stage 2: Data collection
A one to two-hour, face-to-face interview was conducted separately with recruitment and selection personnel from BAS and AntNZ between December 2007 and January 2008; and they were recorded using digital audio recorder. In addition to that, questionnaires were emailed to the recruitment and selection personnel who are beyond reach at BAS and INACH in December 2007 (refer to Appendix 1). Although an interview has been conducted with INACH management staff, insufficient human resource related data was available on-time for this study, resulting in the need to drop the investigation on this NAP. Therefore, only two NAPs are included in this study: BAS and AntNZ.

The participants from BAS (referred to as BAS1, 2007 and BAS2, 2008 in this paper) have approximately 25 years of selection experience with the organisation. The participant from AntNZ (referred to as ANTNZ1) has 4 years of selection experience with the organisation, but more than 10 years in human resource professions. Data collected including technical-organisational factors related to selection mechanism, as shown in Model 1-3, above, and their social-psychological implications, as shown in Figure 1, also above.

Stage 3 and 4: Data entry, analysis, conclusions, and submission
Upon completion of the transcription of the interviews, data collected from the other sources such as questionnaire, journals, reports, and websites were reviewed in order to identify interrelated factors that might contribute to selection mechanism and their social-psychological implications on polar personnel. Using a multiple case studies approach, the selected models and interrelated factors between selection mechanism and social-psychological implications in the polar environments were identified for discussion. Conclusions were drawn based on the analysis. Recommendations were made on the selection models within NAPs to contribute to the body of scientific knowledge about polar psychology and the well-being of polar workplace.

3.3 Limitations of studies
Due to different Antarctic and selection experience of the participants; limited access to more participants in the NAPs; and time constraint for using more mixed methods approach for this study, one should be aware of the implications of these limitations and treated the findings with cautious.
CHAPTER 4: RESULTS AND DISCUSSION

This chapter is divided into two sections; the first section covers BAS, and the second on AntNZ. Each section consists of three sub-sections.

The first sub-section provides a background understanding of the organisation, in relation to their unique employment issues. Five organisational factors are reviewed here: 1) organisation structure and chain of command; 2) research stations/ ships in Antarctica and requirements for support; 3) current projects and manpower requirements; 4) operational process and system; and 5) NAP culture.

The second sub-section discusses human resource management functions and adaptation related issues, for examples: 1) the size, structure, and role of human resource department; 2) human resource planning; 3) job analysis and design (e.g., job/ position/ role descriptions and job/ person/ role specification of polar personnel at NAP); 4) performance management system; 5) health and safety; 6) compensation system; 7) human resource information system; 8) industrial relations; 9) human resource development (i.e., organisational development; career development/ career opportunities, and training and development).

The third and last sub-section reviews polar recruitment and selection mechanism (i.e., stages/ criteria/ methods/ tools/ time factors), preparation going south, and social-psychological implications of selection mechanism issues.

4.1 BAS

4.1.1 Organisational factors
The following information is based on the findings from BAS website (http://www.antarctica.ac.uk). Originated in political tension in 1944, from a secret Royal Naval mission during World World II, Operation Tabarin was designed to deny Antarctic water to enemy ships (http://www.antarctica.ac.uk). During the last two years of the war, it has expanded to Antarctic scientific research in biology, geology, and weather. At the end of the war in 1945, three bases in Tabarin and its scientific work were transformed into a new organisation, the Falklands Island Dependency Survey (FIDS). It was renamed as BAS in 1962. BAS has been responsible for most of UK’s scientific research and logistic arrangement for the past sixty years. Although BAS has occupied nineteen research stations and three refuges since its establishment, stations that are no longer in use are managed under the Protocol on Environmental Protection to the Antarctic Treaty. For example, some of the abandoned bases and work sites had been cleaned up, transferred, or preserved as historic sites and monuments.

Currently, BAS operates five research stations, two royal research ships, and five aircrafts in and around Antarctica (http://www.antarctica.ac.uk). As part of Natural Environment Research Council (NERC) and a world-leader in Antarctic research, BAS’s headquarter is located in Cambridge, United Kingdom (BAS2, 2008). It provides support to three stations in the Antarctic: Sidny (summer only), Rothera, and Halley; and two stations on South Georgia, at Bird Island and King Edward Point (BAS2, 2008).

The Director and Deputy Director from the BAS Directorate overseeing the operation of three science divisions (Biological, Physical, and Geological Division); and two support divisions (Environment and Information Division/ EID; and Administration and Logistic Division/ ALD) (BAS2, 2008). ALD consists of six sections that support BAS science programmes: Personnel (Human Resource); Finance; Purchasing and Shipping; Technical Services; Operation; Safety Advisor and Cambridge Facilities (http://www.antarctica.ac.uk) (refer to Appendix 2).

In order to achieve BAS’s vision “to become by 2012 the leading international centre for Global Science in the Antarctic Context”, two out of its seven priorities for 2002-2012 are to “build a top-quality, professional workforce” and to focus, achieve, and lead national and international science efforts and partnerships (http://www.antarctica.ac.uk). Working on a five-year science research programme, BAS’s interdisciplinary science programme named Global
Science in the Antarctic Context, 2005-2010, was proposed and currently support by BAS staff (http://www.antarctica.ac.uk).

BAS employs approximately 450 staff at Cambridge, in Antarctica, and on two royal research ships (http://www.antarctica.ac.uk). BAS staff going south consists of a wide range of professionals, from scientists to support personnel such as engineers, logistic specialists, carpenters, electrician, boat handlers, divers, chefs, field assistants, communication specialists, and mountaineers (http://www.antarctica.ac.uk). The forms of employment range from open-ended, contracted, graduate opportunities, to unpaid work (http://www.antarctica.ac.uk). ALD consists of half of the BAS workforce and it is responsible for two-third of BAS’s expenditure (http://www.antarctica.ac.uk).

BAS website consists of a wide scope and depth of information on the scientific, operation, and employment related issues to interest groups, including potential job applicants. BAS’s cultural values, PRICE, provide a framework for their operation and employment practices (http://www.antarctica.ac.uk) (refer to Appendix 4).

4.1.2 Human resource management system

While the Head of Operations in BAS is responsible for managing Antarctic manpower, Personnel provides services on: 1) recruitment and training for all staff; 2) staff administration and welfare (including acting as first point of contact for those going south); 3) salary administration; and 4) medical matters (in conjunction with the BAS Medical Unit) (BAS2, 2008). There are nine people working in Personnel (BAS2, 2008). The Head of Personnel is supported by two Personnel Managers, three Personnel Officers (including a marine personnel officer), and three Personnel Assistants (BAS2, 2008). One of the teams focuses on recruitment and related issues, and the other on training and development, discipline, grievance, Antarctic Employment Pool (AEP) management and personal issues in Family and Friends Liaison Office (BAS2, 2008; http://www.antarctica.ac.uk). The support provides to those go south including unexpected death of family, relationship problems, financial difficulties, insurance issues, to name a few (BAS1, 2007). For example, due to the lack of understanding on the part of some insurance companies, the insurance policies of some BAS staff might be affected by the staff taking blood test for HIV prior to going south (BAS1, 2007). Personnel will therefore help to sort out these issues.

In terms of performance management system, every polar support staff agrees on an annual Forward Job Plan with their line manager which will be monitored throughout the year and openly appraised (BAS2, 2008). During the appraisal, training and development needs of the AEP staff is discussed (BAS2, 2008). All AEP are entitled to a comprehensive training and development programme that includes being a delegate at the BAS Annual Briefing Conference that covers a wide range of issues such as in technical, lifestyle, environmental, scientific, and welfare aspects (BAS2, 2008). A 3-day Antarctic specific medical emergency training course is conducted at that time (BAS2, 2008). In addition to that, other professional trade trainings are also provided by the manufacturers, recognised outside bodies, and training organisations (BAS2, 2008).

In terms of compensation system, the starting point of the salary/wage will take into the consideration of the relevant qualifications and experience (BAS2, 2008). Scientific or trades staff will move to the next point of the salary scale after each year of continuous service (BAS2, 2008). Examples of some benefits are: 30 days' annual leave; 10½ days' public and privilege holiday; final salary pension scheme; sick pay; flexible working practices; family-friendly policies; paid maternity and paternity leave; special leave; healthcare cover plan; welfare service; training and development; sports and social club (http://www.antarctica.ac.uk). Tax situation for wintering staff is more completed as it depends on the time that they work on the ice (http://www.antarctica.ac.uk). For example, whether it is during tax year (April to April) or a period of 365 days (http://www.antarctica.ac.uk). For those who go south for more than a whole tax year, they are liable only for about 7% of British Antarctic Territory (BAT) tax (http://www.antarctica.ac.uk). For those who are away for less than a tax year, they are liable for Double Taxation (i.e., BAT tax and UK tax, although the total of the two should not exceed the UK tax liability) (http://www.antarctica.ac.uk).
Other human resource management functions also help to support the operation. BAS staffs have the right to join staff associations and unions (http://www.antarctica.ac.uk). All activities within BAS are carried out in compliant with UK Health and Safety Act and that are reflected in their health and safety policies (BAS2, 2008). BAS is currently using Oracle based system called "PeopleSoft" to manage its human resource related information (BAS2, 2008). As an organisation with people from diverse background in terms of professionally, and an equal opportunities employer, BAS provides equal opportunities in their employment policies regardless of sex, race, religious beliefs or sexual orientation (http://www.antarctica.ac.uk). For example, NERC now operates a Guaranteed Interview Scheme for all applications with disabilities but meet the minimum requirements of a particular post the chance for interview (http://www.antarctica.ac.uk).

The structure and roles of Personnel are currently under review (BAS2, 2008). Today, the section has 86 years of collective experience in supporting human resource related issues in BAS (BAS2, 2008).

4.1.3 Polar recruitment and selection mechanism

In general, BAS relies on professional judgement of experienced Antarctic staff by using operation criteria, interviews, background check, and general medical examinations for polar recruitment and personnel selection.

Recruitment mechanism and related issues

The duration of a tour of duty may range from a few weeks to 33 months (i.e., two consecutive winters) (BAS2, 2008). A typical wintering tour is now between 16 and 18 months (BAS2, 2008). Upon completion of a satisfactory probation (equivalent to one Antarctic Season) at the end of an initial tour of duty, appraisals will be completed and confirmed by the Base Commander (BAS2, 2008). A 10% "satisfactory completion of service" bonus is paid to all Antarctic specific employees, as appropriate (BAS2, 2008). In addition to that, staff who receive Making a Positive Difference Award scheme may receive additional small bonus (BAS2, 2008).

The recruitment mechanism at BAS is quite similar to the elements proposed in Model 1 and 2, above. All employees especially the Antarctic staff join the Antarctic Employment Pool (AEP) (BAS2, 2008). Antarctic staff who has completed a satisfactory probation period might be appointed to further tours of duty without having to re-apply (BAS2, 2008). The annual or seasonal re-appointment depends on the length of the tour (BAS2, 2008). As BAS requirement for trades and support staff depends on the project requirement at a particular time, AEP staff might be given an open-ended appointment but work are not guaranteed and they are only paid for the period when they are contracted to south (BAS2, 2008). Similarly, BAS is aware that staff may not always be available to work for BAS if they are engaged in other work or career activities (BAS2, 2008). Therefore, there is a mechanism in place for managing the manpower supply and demand (BAS2, 2008). Besides an annual human resource planning for core over-wintering support for each station, Antarctic support posts are advertised on BAS website (including the detailed guidelines on working for BAS and a complete online recruitment package), UK trade and national press under open competition on an equal opportunities basis (BAS2, 2008). These posts have to be approved within agreed staff ceilings (BAS2, 2008).

For internal recruitment, increasing returnees (on an average of 60 percent return rate) to BAS from the AEP helps to reduce the recruitment and training cost (BAS2, 2008). For example, science staff who had overwinter experience still tend to do a traditional BAS tour of 30 months (i.e. two consecutive winters), mainly for the purpose of the research projects and maximisation of training investment (BAS2, 2008). In a way, it is "self-fulfilling because you want experienced people, experienced people actually tend to stay longer because they are the right people in the first place, and they are enthusiastic about Antarctica in the first place." (BAS1, 2007). Although there is an effort to work on a maximum of 18 months tour (i.e., a normal commitment of one winter) for both science and support staff, they may choose to extend their contract to the second winter, subject to AEP and manpower demands (BAS2, 2008).
A typical external recruitment campaign, from advertising to interviews, will usually take six to eight weeks (BAS2, 2008). Additional appointment will then depend on post, destination, and time that must be allowed for appropriate training (BAS2, 2008).

Selection mechanism and preparation going south
The selection mechanism at BAS is quite similar to the elements proposes in Model 1 and 2, above, except that they have not been using psychological battery (BAS1, 2007; BAS2, 2008) and that medical examination is conducted on the same day with the interview (BAS1, 2007). Due to increasing use of flights instead of ships to send new recruits to south, BAS do not have the luxury that it used to have for experienced observers on board to assess new hires’ fitness to their missions during the journey (BAS1, 2007). Therefore, getting the right ones in the first place is important (ibid, 2007).

Initial screening
Upon receiving the completed, comprehensive applications downloaded from BAS website, candidates are usually short listed by the line manager of the job vacancy using an initial screening form and job specification profiles (BAS2, 2008). Subject to the quality and quantity of the candidates, usually five to six applicants will be called in for interview (BSAS1, 2007; BAS2, 2008).

Selection Interview: panel, criteria, techniques, and related issues
The interview panel is usually consisted of three interviewers: a Station Commander, a line management representative of the trade area, and chaired by an experienced member of the Personnel (BSAS1, 2007; BAS2, 2008). Most of them have experience south (BSAS1, 2007; BAS2, 2008). Although there is a concern on the potential effect of panel members with less or no overwinter experience for the past 10-15 years (BAS1, 2007), potentially due to the retired or resigned experienced ex-winter staff as a result of “influxes of new staff post the Falklands conflict in 1982 and again in 1990s when BAS expanded it's operations diluted the ratio of ex-winter experienced staff working in BAS back in UK” (BAS2, 2008); such problem is believed to be overcome by Station Commander and the Chair with overwinter experience (BAS2, 2008). Interestingly, there is only a few Chairs traditionally in BAS (BAS2, 2008). “When I started to chair boards in 1983, I believe I was only the 6th to do so since 1961” (BAS2, 2008). Today, more junior Personnel members are encouraged and trained to chair the panels (BAS2, 2008). At the present, some of the Chairs have only experience south, but not overwinter (BAS2, 2008).

Selection or rejection is based on a 50-minute interview that consists of a wide range of open questions, comment, and observation, where candidates are put at ease so that they may share more of themselves (BAS1, 2007; BAS2, 2008).

The percentage of job questions to personal/character questions is 20/80 (BAS2, 2008) (refer to Appendix 5). Although the order of these questions are not that critical, there is a tendency to explore firstly the personal issues and personal aspirations, then the professional knowledge and lastly the lifestyle and culture related issues (BAS2, 2008). Besides the technical competency, other concerns are their interests and personal relationships with others (BAS1, 2007; BAS2, 2008). For examples, “people who are enthusiastic, tolerant, outward looking, and they are dynamic and they are technically competent and...friendly.” (BAS1, 2007). In sum, someone whom you ’won’t mind of spending the whole winter with...” and “…the sort of person that I would want to know in 5 years time...” (BAS1, 2007). It’s not difficult to ‘select out’ unsuitable candidates, the challenge lies on the skill to identify those who can fit in the “isolated (but not lonely) cheek by jowl living” (BAS2, 2008) and getting a “balance of leaders and followers”(BAS1, 2007). “The best qualified person may not be the individual who will bring most to the team. Conversing with candidates at interview so that they can freely talk about their experiences, ambitions and expectations, hopes and fears, faults and foibles in themselves and others will usually allow the panel to make a positive and considered judgement on suitability.” (BAS2, 2008)

“Selection for Antarctic Service is a complex area but also a matter for a low key and commonsense approach.” (BAS2, 2008) and often an intuitive judgement on the part of the panel (BAS1, 2007). For experienced panel, “the
first 15 minutes can tell an enormous amount of the person" (BAS1, 2007). For example, candidate’s ability to overcome the stress factors during the interview and forming an opinion out of a balanced conversation (BAS1, 2007; BAS2, 2008). As the concern of the panel can be told in the way that they ask and form their questions during the interview, “it is usually possible even before everyone (panel) draw their conclusion (jointly) to know whether or not this is going to be the person or not.” (BAS1, 2007).

Selection test
Although BAS has never used psychological tools and testing in their employment selection, their selection has shown a high success rate for the past 40 years (BAS2, 2008). This finding is supported by the proceedings written by J.R.W. Hanson (1992) and a five-year programme (between 1999 and 2005) run jointly by BAS Medical Unit and University of Bergan, Norway that resulted in a paper named Psychological selection of Antarctic personnel: The “SOAP” instrument, published in August 2007 (Grant et al, 2007). The overall failure rate on selection is about 1.5 to 2 percentage, not including repatriation on compassionate and medical ground (i.e., on disciplinary or capability grounds) (BAS2, 2008). “I remain totally unconvinced and so far that a large number of psychological tests would tell me anymore than the...three people who between them spend about 30 years in Antarctica.” (BAS1, 2007) Based on more than 6000 individual interviews over a 25 year period; 22 trips to Antarctica; and more than 39 years with BAS between the two participants, they are confidence with the effectiveness of the current selection system (BAS1, 2007; BAS2, 2008).

Pre-employment check, background check, and job offer
Without prioritised, interviewees who pass the basic interviews will proceed to do medical examination to confirm fitness to work in Antarctica on the same day of the interview (BAS1, 2007; BAS2, 2008). The screening aims to confirm a good and general level of acceptable health that have been agreed within the international Antarctic community through various medical representatives, and it is conducted by BAS Medical Unit (BAS2, 2008). Due the potential operational and personal risk, and taking into the consideration of medical facilities in Antarctica and skill level of the medics, certain immunisations are required (BAS2, 2008). All going south are required to take blood test as they might be the blood donor in case of emergency (BAS2, 2008). The criteria for fitness to work and live with BAS in Antarctica are available on their website (BASMU2) (http://www.antarctica.ac.uk). In addition to that, candidates are required to provide two professional (including the current and previous employers) and two personal references and list any convictions (BAS2, 2008). Checks will be made if appropriate (BAS2, 2008). Successful candidates will then be offered the job a few days after the interview, followed by contractual letter and relevant forms for a tour south (BAS2, 2008).

Preparation going south
A mandatory pre-deployment training is designed to involve group in “lifestyle”, addressing social issues such as the influence of their behaviours on others and social balance of a group (ibid, 2008). In most cases, peer group pressure is expected to keep the isolated Antarctic community in balance; and if fails to do so, “...BAS has the experience and ability to remotely manage difficult situations.” (ibid, 2008)

Social-psychological implications of selection mechanism
Various adaptation factors are considered in the selection mechanism at BAS: 1) physical condition; 2) habitability and life support; 3) crew characteristics; 4) mission attributes; and 5) other factors not include in Figure 1, above.

Firstly, BAS uses initial screening to select only those who meet the requirements stated in the job/role/person description and specification for interview (subject to the availability and suitability; approximately 6 person per post). These job/role/person description and specification would have taken into consideration physical condition; habitability and life support; the mission attributes (e.g., task, workload, duration); and expected qualifications for the work roles (e.g., previous experience, profession, and training).

Secondly, selection interview is one of the most critical tools use in BAS. Starting with its selection panel (i.e., Station Commander, line management representative of a trade area; and the Chair from Personnel) who have extensive
experience going south and/or working with BAS. This indicates that they have extensive and cumulative knowledge and understanding of the polar adaptation issues and the requirements for those going south, for examples task, social, and emotion related demands of working and living in ICE environments. In fact, line managers are encouraged to go south for more exposure during their employment with BAS (BAS2). Some of these concerns are covered in their: 1) interview questions (refer to Appendix 5; and the 20/80 percentage for job questions to personal/character questions); 2) general sequence of asking the questions (e.g., emphasis on personal/character questions); and 3) interview techniques and concerns (e.g., more open-ended and emphasis on emotional stability) (BAS1, 2007; BAS2, 2008). These social-psychological concerns include: 1) the compositions of crew (e.g., the demands of task, social, and emotional related characteristics; first as an individual, and then as a crew member in a team going south); 2) mission attributes (e.g., task, workload, duration, and danger); 3) habitability and life support (e.g., space, facilities, and supplies); and 4) other issues concerned include the support for/ from their family and communication; BAS cultural values; and training needs.

For examples, BAS has considered on the facilities and support available at different workplace; summer or winter season; and the potential adaptation of police personnel to these physical conditions. Therefore, the use of medical examination to select the right personnel to avoid operational and personal risks. A typical example, but no longer an issue, is the physical condition in a research station where the phenomenon of 'the stare' was detected and therefore the concerns on physical fitness for those going south. "The stare" refers to the situation "where people were always looking through you toward the horizon....and in part that was due to the fact that the station is entire buried and they lived underground for two and a half years, and only come out to the surface to do some work on the equipments." (BAS1) "You can see people on the ship on the way back home and you could immediately tell the one who come from Halley because it was really a remarkable experience for them. But they all integrated back ...it is just a natural exposed to... (ICE environments)" (BAS1)

Besides the issues of finding the right mix of leader and followers, other crew composition-related issues include: 1) increasingly diverse workforce; and 2) small number of married men and women overwinter.

Although "we have been criticised for recruiting the crone of ourselves which may very well be truth", the system opens to diverse groups of people who might be "eccentric" but "turn out to be very good base man" (BAS1, 2007). Under the European union rules, Equal Employment Opportunity/EEO, and different 'non-traditional' employment schemes such as students and visiting fellows, there is an increasing wider spectrum of people in terms of occupations, nationalities, and age, to name a few, within BAS system now (BAS1, 2007). In general, women are the minority mainly due to the lack of logistic women for recruitment (BAS1, 2007)

An interesting observation over the years in BAS is the small number of married men and women overwinter, potentially due to the conflicts with the partners whom they left behind (BAS2, 2008). The reasons may be many and complicated, for examples pre-deployment communication with the partners, communication while separation, or the escaping from a falling marriage to begin with (BAS2, 2008). "...the influx of new to BAS middle grade / mid career people 20 and 10 years ago....were already established in relationships and their partners were placed under greater pressure by the change in their partners career and lifestyle and the family adjustments that had to be made." (BAS2, 2008).

The above issues will be discussed later when comparing with the situation in AntNZ, below. In sum, the experienced Antarctic staff in the selection panel and the coverage of the critical selection criteria on task, emotion, social-related capability might have led to its choice of not using psychological battery in its selection mechanism. This implies the needs for continuity of selection panel to be involved in selection process (yet be cautious of not being affected by the issues discussed in the five social theories of selection process, above) and constraint exposure to social-psychological issues of those going south.
4.2 AntNZ

4.2.1 Organisational factors

Named after Sir James Clark Ross who led the first expedition into Ross Sea in January 1843, Ross Dependency was claimed by Britain and put under the care of New Zealand in 30th July 1923 (http://www.antarcticanz.govt.nz). Scott Base (SB), named after Captain Robert Falcon Scott (1868-1912), was built at Pram Point initially to support: 1) British Trans-Antarctic Expedition (TAE); and 2) International Geophysical Year (IGY) 1957/58 related science activities (http://www.antarcticanz.govt.nz).

In 1959/60, SB become a permanent base. It is placed under Department of Scientific and Industrial Research (DSIR) and managed by the New Zealand Antarctic Programme (NZAP) (Handbook, 2007/08). The responsibility was transferred to the Ministry of Foreign Affairs and Trade (MFAT) in 1992 (ibid, 2007/08). Through the New Zealand Antarctic Institute (NZAI) Act (1996), New Zealand Antarctic Institute (or Antarctica New Zealand/ AntNZ) was set up on 1 July 1996 to develop, manage, and support New Zealand’s activities in Antarctica and Southern Ocean (Statement of intent 2007-2010, 2007). This involves developing and supporting international-quality science, protecting environmental values, delivering information services, guiding tourist and commercial activities, and coordinating logistical support (Handbook and events, 2007/08).

To achieve its vision, "Antarctica and the Southern Ocean: Valued, Protected, Understood", two out of six developmental priorities stated in AntNZ’s Statements of Intent 2007-2010 (2007) recognise the challenges of the shortage of skilled labour in New Zealand. These development priorities include the need to: 1) recruit high quality applicants for advertised vacancies, and to be a well regarded equal opportunity employer with fair and supportive personnel policies; as well as 2) provide opportunities for staff development, training, personal growth and leadership experience (Statement of Intent 2007-2010, 2007). AntNZ website consists of the information on the scientific support, operation, and employment related issues to interest groups, including potential job applicants. AntNZ’s cultural values, TTCQSC, provide a framework for their operation and employment practices (http://www.antarcticanz.govt.nz) (refer to Appendix 4).

AntNZ is located in the same building with United States and Italian Antarctic Programmes, at International Antarctic Centre in Christchurch. It collaborates closely with MFAT, New Zealand Defence Force (NZDF), United States and Italian Antarctic Programmes in: 1) the operation of a flight pool and personnel between Christchurch and McMurdo Sound and Terra Nova Bay; as well as 2) the field logistic for field parties in Antarctica (Handbook, 2007/08; Statement of Intent 2007-2010, 2007). The Chief Executive Officer is supported by Executive Assistant, Senior Antarctic Representative (Scott Base), and managers from five sections (Corporate Services; Science and Information; Executive and Outreach; Antarctic Support; and Antarctic Programme) (http://www.antarcticanz.govt.nz) (refer to Appendix 2). Currently with approximately 30 permanent staffs at the Christchurch office, AntNZ employs support personnel annually for scientific and non-scientific events and projects at SB (http://www.antarcticanz.govt.nz). SB specialist teams consist of Base Services, Engineering, and Operations (http://www.antarcticanz.govt.nz). Subject to the projects at different seasons, SB staff range from approximately 30-35 during the summer (October-February) and 10-20 during the winter (October-October) (Statement of Intent 2007-2010, 2007; http://www.antarcticanz.govt.nz).

A 'new' (this structure was used years ago), flatter managerial structure was implemented since 1 December 2006 to involve senior AntNZ representatives from Christchurch office taking turns to carry out managerial roles at SB during the summer (ANTNZ1, 2008; http://www.antarcticanz.govt.nz). It aims to promote a more effective and efficient cooperation, communication, and "one culture" between the Christchurch office and SB (ANTNZ1, 2008) (refer to Appendix 2). During the summer, a senior AntNZ representative works with the manager of Antarctic Programme and Project Manager, and support by the Programme Support Supervisors, SB Coordinator, and Engineering Supervisor (http://www.antarcticanz.govt.nz). In addition to that, a NZDF senior national officer stations at SB to support communication and cargo (http://www.antarcticanz.govt.nz). During the winter, the winter manager at SB is
supported by the supervisors of various fields and he reports directly to the manager of Antarctic Programme at Christchurch (ANTNZ1, 2008).

The new structure will be reviewed by the management in February 2008, after getting the feedback from the focus groups at SB (ANTNZ1, 2008).

4.2.2 Human resource management system

While Antarctic Programme Manager is responsible for managing Antarctic workforce, being the only human resource staff, the Human Resource Advisor works under Corporate Services to provide: 1) recruitment, selection, and training for all staff; 2) staff administration and welfare; and 3) other human resource support (ANTNZ1, 2008). AntNZ adopts EEO practices in terms of age, ethnic or national origin, gender, sexual orientation, marital status, disability, religious or ethical belief, and economic background (Corporate Policy Manual, 2007).

The compensation package for SB staff consists of: 1) salary and incentives (e.g., salary is based on market rate, discretionary payments, higher duties allowance, and recognition rewards); and 2) benefits (e.g., leaves covered by a Collective Employment Agreement (CEA); food; clothing; lodging; Employee Assistance Programmes (EAP) (ANTNZ1, 2008; Corporate Policy Manual, 2007). Although there is no overtime pay and less career development opportunities for seasonal staff at SB (mainly due to the nature of the job) upon the completion of their on-Ice mission, good performers might be considered for future vacancies (ANTNZ1, 2008). In some cases they continued their service as permanent staff at the Christchurch office when there is opportunity (ibid, 2008).

Manager and supervisors meet monthly to discuss Monthly Operation Reviews (MORs) (Corporate Policy Manual, 2007). MOR system will then support Personal Performance Review (PPR) System that incorporates Personal Development, Role Descriptions, and Remuneration to manage the performance of the staff (ibid, 2007). Besides that, Health, Safety, and Environmental (HSE) policies provide guidelines on the training and behaviours of the staff (ibid, 2007). In addition, AntNZ uses software system to manage its human resource related information, such as recruitment and payroll (ANTNZ1, 2008).

4.2.3 Polar recruitment and selection mechanism

In general, AntNZ relies on professional judgement of Human Resource Advisor, Antarctic Programme Manager, and job related supervisor by using operation criteria; psychological battery (for winter applicants only); structured interview; background check; and general medical examinations for polar personnel recruitment and selection.

Recruitment mechanism and related issues

Subject to the projects for every season, role descriptions and specifications are reviewed before recruitment campaign begins annually in April-May (ANTNZ1, 2008). Online recruitment enables a year-round recruitment process to be in place so that Human Resource Advisor and relevant managers can manage and review the recruitment pool anytime without having to wait till the main recruitment period begin (ibid, 2008). Human Resource Advisor may contact applicants from the talent pool regarding recruitment related information and provide advice to applicants on what they might need to get for a better chance of being select prior the main recruitment process begin (ibid, 2008). Besides AntNZ’s website and going around the country for recruitment, advertisement are usually posted in related news papers (usually in New Zealand, except in the case of scare labour supply where job might be advertised in Australia) and trade magazines (ibid, 2008). Advertisement media will be reviewed annually for further improvement in the following season (ibid, 2008). Similar to the challenge faced at BAS in competing with the labour market for some scare trade professionals such as electricians and engineers, it is believed that ‘once in-a-lifetime Antarctica experience’ and word of mouth are some of the best strategies to attract job applicants (ibid, 2008). On an average, AntNZ received 200-300 applications for approximately 20 positions (ibid, 2008).
Selection mechanism and preparation going south

Initial screening and selection test

Selection process starts with initial screening of applications by the relevant supervisors and Human Resource personnel in May-June (ANTNZ1, 2008). Candidates who applied for the summer vacancies are short listed and called in for interview (ibid, 2008). Those who are short listed for winter vacancies will be given a psychological instrument to complete prior to calling in for the interview (ibid, 2008). In addition to the cost of psychological instrument, the rationale to use it for only winter recruits are: 1) the likelihood of social-psychological challenges to happen during the winter in ICE environments is greater due to the degree of intensity; and 2) the chance for replacement is unlikely to happen and expensive (ibid, 2008). Panel interviewers may also use the outcomes from the psychological battery as a reference to generate additional questions during the interview should they have any doubt (ibid, 2008).

Selection Interview: panel, criteria, techniques, and related issues

The interview panel involves two to three persons: the Human Resource Advisor and one to two job-related supervisors (ANTNZ1, 2008). The one to one and a half hour of structured interview consists of a mix of structured, task-related, behavioural-related (e.g., teamwork, personality, motivations, interests, and hobbies), and scenario-related questions (e.g., handling of stress) (ibid, 2008) (refer to Appendix 5). Although there is no emphasis on which characteristics are more important than another, examples of ideal characteristics include competency, maturity, and personality (ibid, 2008). In addition, it is crucial to find out during the interview if the applicant's intention of going south is supported by his or her family or significant others (ibid, 2008). Each interviewee is evaluated using evaluation form and the panel come together at the end of the interview to discuss and select the most qualified candidates (ibid, 2008).

Pre-employment check, background check, and job offer

Human Resource Advisor will check the certifications provided by the applicants such as licenses, first aid and other certifications (ibid, 2008). It is required to provide two to three referees from ex- and/or current employers (ibid, 2008). Similar to psychological test, background check is usually done by external agency (ibid, 2008). All job offers are subject to the medical check (ibid, 2008). Employment contracts are then wrapped up by July-August before pre-departure training starts (ANTNZ1, 2008).

Preparation going south

Subject to the nature of the jobs, various training, ranging from two to eight weeks, are conducted between September-October prior to pre-departure (ibid, 2008). For examples, IT new hires might be trained in NIWA at Wellington while field support personnel are trained at the mountains in South Island (ibid, 2008). All new hires will meet later in Christchurch for a two-week training in September (ibid, 2008). An introduction to Antarctic related issues such as ATS and the events that they will be supporting at SB is conducted during the first week (ibid, 2008). This is also the opportunity to built teamwork. During the second week of the training, 90 percents of new hires will go for fire training, while the field support personnel will join the US Antarctic programme for job-related training (ibid, 2008). At the end of off-the-Ice training, new hires will continue with Antarctic Field Training (AFT) and training on their specific roles during the handover period, when they arrive at SB, between September and October (ibid, 2008). Usually there is no event scheduled during the first two weeks of handover period (ibid, 2008).

Selection for Winter Manager

The winter crew may express their interest in the winter manager position in November (ANTNZ1, 2008). Another round of selection interview for this position will be conducted among the Human Resource Advisor and Antarctic Programme Manager at Christchurch office, and Supervisor of the applicant and the applicant at SB, in December (ibid, 2008). Supervisor's review, personality, leadership abilities (including peer acceptance), and workload will be taken into consideration for the selection (ibid, 2008). The selected winter manager will then fly back to Christchurch and be trained by various management teams, including Human Resource Advisor and Antarctic Programme Manager on management control, communication between Christchurch and SB, and Human Resource related matters, to name a few (ibid, 2008).
Social-psychological implications of selection mechanism

Similar adaptation factors are considered in the selection mechanism at AntNZ: 1) physical condition; 2) crew characteristics; 3) mission attributes; 4) habitability and life support (but not as critical as the issues of multiple locations in BAS); and 5) other factors not include in Figure 1, above.

Similar to BAS, AntNZ conducts initial screening to select only those who meet the requirements stated in the job/role/person description and specification for interview. These job/role/person description and specification would have taken mission attributes (e.g., task, workload, duration); and expected qualifications (e.g., previous experience, profession, and training) into consideration. For those who applied for winter vacancies, the concerns on the adaptation to ICE environments (e.g., crew characteristics; mission attributes; and physical condition) are greater than those who apply for summer, therefore a psychological battery will be used prior to being shortlisted for interview (ANTNZ1, 2008). This approach complements the use of selection interview where further questions can be explored during the interview should there be any concerns.

The structured interview consists of questions based on a 5-point Likert scale, targeting on specific areas: 1) motivation / enthusiasm (targeted behaviours: realistic understanding of organisation, culture and job requirements); 2) job related skills and experience (targeted behaviours: industry knowledge, technical knowledge); 3) communication / interaction (targeted behaviours: listening skills; intuition; verbal communication); 4) team work / team building (targeted behaviours: exercises tact, tolerance and humour in team interactions; promotes harmony; accomplishes shared goals by accepting responsibility); 5) compatibility (targeted behaviours: tolerance, sensitivity to others, peer acceptance, patience) (ANTNZ1, 2008).

Interestingly, the general criteria (i.e., task, social, and emotion related criteria for ICE environments) between BAS and AntNZ are not too far from each other. However, BAS appears to use semi-structured to open-ended questions and it covers more social-psychological types of questions (i.e., personal/character questions) than task-oriented questions for ICE environments; while AntNZ's questions are more task-oriented (including the emphasis on checking the qualifications and background should the candidates be considered for the next step of selection process), comparatively.

This might be due to various reasons, including: 1) BAS has more diverse ICE work environments with different facilities and supports at those locations (i.e., less 'standardized' or 'structured' as SB); 2) the lengths of their missions going south are relatively longer than those from AntNZ (i.e., implying a higher degree of concern for social-psychological adaptation); 3) the crew is more heterogeneous than those from AntNZ (e.g., size, occupations, nationalities, and ethnicity) (i.e., implying less likely for crew to be prototypical as per social identity theory, discussed above). An interesting phenomenon is that French staff that we have for the most parts actually like our system than the French one (ANTZ1, 2007).

Comparatively, SB facilities, transportation, and communication technology are more accessible from Christchurch and from McMurdo, especially during the summer; therefore the demand on the physical condition, habitability and life support of polar personnel might not be as high as those in BAS. Nevertheless, it is a must to pass the medical examination for those going south. The aim is also to avoid operational and personal risks. In addition to that, other issues concerned include the support for/ from their family and communication (There and Back brochure, 2008); AntNZ cultural values; and training needs.
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

To sum up, both NAPs are unique in terms of their organisational backgrounds (e.g., size, structure, system, and requirements for polar personnel and human resource support). For examples, BAS deals with larger, wider, and diverse range of recruits (e.g., scientists and support personnel; different nationalities) for different research stations and ships with different requirements (e.g., length of missions and types of job requirements); AntNZ deals with smaller group of support personnel for SB for both seasons. These might have implications on their selection methods (e.g., choices of interview questions and techniques).

The recruitment and selection mechanism used in both NAPs are rather different: one use psychological battery and the other do not and is relied extensively on experienced Antarctic staff; one arranges the medical examination on the same day of the interview (i.e., BAS), the other later (i.e., AntNZ). Interestingly, both NAPs suggested: 1) polar selection is a complex mechanism; 2) the importance of finding the right mix of polar crew (including the balance among task and social abilities, as well as emotion stability); 3) the importance of training; 4) the need to meet work role requirements in a labour market characterised by a scarce supply of some professions; and 5) some ways to overcome some organisational challenges to improve the adaptation of polar personnel.

According to participants from BAS, "selection for Antarctic Service is a complex area but also a matter for a low key and commonsense approach." (BAS2, 2008). The selection procedures themselves are said to have minimal impact on the polar personnel at present (BAS2, 2008). Besides that, BAS is fortunate in attracting motivated and enthusiastic people, especially approximately 60% returnees from AEP for at least a second tour, and in a few cases for many seasons between 20-30 years. "The challenge is to maintain and attract the right mix of returning expertise against new intake." (BAS2, 2008) Besides that, another challenge is "to remain competitive in a buoyant employment market for trades and support people. As a public service employee, financial remuneration is average and BAS can find itself competing with commercial salaries for major schemes. For examples, London Heathrow Airport Terminal Five, and London 2012 Olympics." (BAS2, 2008)

It is suggested that the teamwork between the office in UK and those going south is one of the keys to success (BAS2, 2008). This involves planning; line managers of people going south get regular exposure to life on an Antarctic station and leading by example; mutual respect for roles and responsibilities in order to maintain reputation and attract new applicants and returnees who "...want to relive the experience, not because they focus purely on financial reward without adventure and lifetime learning and development opportunity." (BAS2, 2008)

According to the participant from AntNZ, "there is no formula in recruitment and selection process" and that "it is not a science" (ANTNZ1, 2008). A mix of the human resource experience and use of human resource tools might help in the selection process (ibid, 2008). The selection procedures themselves are said to have minimal impact on the polar personnel but critical for choosing the right crew, especially for winter-over crew (ibid, 2008). For example, good performance returnees might help in training and handover period but the challenge is how to find a good balance team between the returnees and new recruits (ibid, 2008). Psychological battery, training, and Antarctic experience of the selection panels are some of the ways to find this balance (ibid, 2008).

Besides that, another challenge is to remain competitive for its recruitment, especially for scarce professionals in New Zealand (ibid, 2008). Besides that, the overall recruitment and selection process is rather lengthy (April-June) (ibid, 2008). However, it is believed that it is necessary due to the nature of the job and that applicants have been informed the due dates of each selection process (ibid, 2008). These challenges are believed to be overcome by online recruitment system and the promotion of "Antarctic experience" and word of mouth (ibid, 2008).

Lastly, although There and Back brochure (2007) provides guidelines to better prepare the support personnel and their significant others during pre-departure, during, and post-Ice adaptation, Human Resource Advisor is also looking into the possibility to introduce 'winter partner network support' in upcoming season. The challenge is finding the balance between the administrative and strategic roles of human resource in the face of the workload.
In summary, although putting the ‘right ones’ (i.e., individual factors) in the ‘right place’ at the ‘right time’, is the first, critical step to increase the likelihood of polar adaptation, it should be noted that various factors, as discussed above, might affect personnel adaptation during various stages of the deployment in ICE environments. For examples, social-cultural factors (e.g., group compositions), techno-structural factors (e.g., mission attributes, habitability and life support, and physical conditions), and learning factors (e.g., training and workplace learning) (Taylor, 1987, 2002; Palinkas, 1997, 2000, 2003; Suedfeld & Steel, 2000; Illeris, 2004; Sandal et al., 2006). It is suggested that polar adaptation could be a dynamic, multifaceted phenomenon, and that it might involve interrelated factors on- and off-the-Ice; within and outside of the organisation.

In addition to the above, due to different Antarctic and selection experience of the participants; limited access to more participants in the NAPs; and time constraint for using more mixed methods approach for this study, one should be aware of the implications of these limitations and treated the findings with cautious. Therefore, future research should take a holistic and longitudinal approach to look into the dynamic process of human adaptation begins from, but not ended in, selection process.

ACKNOWLEDGEMENTS
Special thanks to all the participants, supervisor, Gateway Antarctica, and Human Ethic Committee for your kind assistance and contribution to this project. Your enthusiasm, encouragement, and inspiration have shown the spirit of Antarctic and made this project special and interesting. Thank you.
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http://classic.ipy.org/development
http://www.antarcticanz.govt.nz
http://www.antarctica.ac.uk


There and Back brochure. Antarctica New Zealand. (Obtained on 16 Jan 2008)


www.comnap.ag/operations/facilities
APPENDIX 1:
LETTER OF INVITATION AND QUESTIONNAIRE FOR INTERVIEW

Date: 17 December 2007

Re: Invitation to Participate in a Research Project

Dear ____________________,

Greetings. Thank you for agreeing to participate as a subject in a project entitled “Voyage to the Ice: Selection and social-psychological implications of support personnel in Antarctica”. This project is undertaken by the researcher as a requirement for Graduate Certificate in Antarctic Studies (GCAS) 2007/08 at University of Canterbury, New Zealand. The aim of this project is to find out the selection methods use by Antarctic national programmes and the social-psychological implications on the Antarctic support personnel. Your participation in this project is very much appreciated and it will contribute to the body of scientific knowledge and lead to healthier and positive polar experience and working environment.

Please:
1) read the Research Information Sheet that provides details of the research project;
2) complete and return the Consent Form (please use digital signature if this is done via email) and Questionnaire to the researcher at your earliest convenience, by 10 Jan 2008. Please email to: cptan08@yahoo.com

Please email me if you have any question. As I will be out on my field trip to Antarctica between 20 Dec 2007-5 Jan 2008 and will not be able to reply, I will reply you as soon as I return. Thank you in advance for your kind cooperation and looking forward to receiving your reply soon.

Merry Christmas and Happy New Year!

Warm regards,
Chiu-Pih Tan (Researcher/ Student)
Gateway Antarctica
Level 1, Geography Building
University of Canterbury
Private Bag 4800, Christchurch, New Zealand
Email: cptan08@yahoo.com

Enclosure:
Appendix A: Research Information Sheet and Consent Form
Appendix B: Questionnaire
Appendix A
University of Canterbury
Gateway Antarctica

Research Information Sheet

You are invited to participate as a subject in a project entitled “Voyage to the Ice: Selection and social-psychological implications of support personnel in Antarctica” for the purpose of the research project undertaken by Chiu-Pih Tan. The aim of this project is to review the selection methods use by Antarctic national programmes and the social-psychological implications on the Antarctic support personnel. Your participant in this project will involve approximately 1 to 2 hours of interview (either face-to-face and/or email). Interview will be recorded using an audio recorder, if possible.

There are no risks foreseen in conducting the interview and the project. The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation. To ensure anonymity and confidentiality, pseudonyms will be used in filling, analysis, report, and publication. Your participation is voluntary. You may also choose not to answer any particular question, and you can withdraw your information at any time throughout the study, by 20 January 2008. Please complete and return the Consent Form to the researcher.

Contact details of the research team:

Researcher: Chiu-Pih Tan
Gateway Antarctica
Level 1, Geography Building
University of Canterbury
Private Bag 4800, Christchurch, New Zealand
Email: cptan06@yahoo.com

Supervisor: Dr Gary Steel
Gateway Antarctica
Level 1, Geography Building
University of Canterbury
Private Bag 4800, Christchurch, New Zealand
Email: gary.steel@canterbury.ac.nz

This proposal has been reviewed and approved by Gateway Antarctica, University of Canterbury.

Consent Form

Name of Project:
Voyage to the Ice: Selection and social-psychological implications of support personnel in Antarctica

I have read and understood the description of the above-named project. On this basis I agree to participate as a subject in the project, and I consent to publication of the results of the project with the understanding that anonymity will be preserved. I understand also that I may at any time withdraw from the project, including withdrawal of any information I have provided, by 20 January 2008.

Name (Last, First name):

Contact details:
Email Address:
Office Phone:
Mailing Address:

Signed: ___________________________ Date: ___________________________
Appendix B
QUESTIONNAIRE

Instructions for Participant:
This form is to be used for the purpose of the Graduate Certificate in Antarctic Studies (GCAS) project, titled “Voyage to the Ice: Selection and social-psychological implications of support personnel in Antarctica”, undertaken by Chiu-Pih Tan. This questionnaire consists of a total of 2 pages (including this page). If you have further questions, please feel free to contact Chiu-Pih Tan at her email address. Please use the following instructions to complete and return the form:

Completing the Form
Step 1: Please read the instructions and answer ALL questions (in English) in this Questionnaire.

Step 2: Please type your answer using this template and attach any relevant information to this form (e.g., organisational chart). Feel free to use as much space to type your answer as needed.

Returning the Form
Step 3: Please return the Consent Form (with your digital signature) and Questionnaire to the researcher at your earliest convenience, by 10 Jan 2008. Please email to: cptan06@yahoo.com
A) Background Information of National Antarctic Programme (NAP)

Please provide the background information of your NAP and the roles that you play in the NAP:
1. organisation structure and chain of command
2. list of research stations and support given to the research stations in Antarctica
3. current projects and manpower requirements
4. operational process and system
5. NAP culture/ polar culture
6. Any other relevant information

B) Background Information of Human Resource System in NAP

Please provide background information of the human resource department at your NAP (e.g. What, who, when, where, how, and why; especially those factors with *):

Current Human Resource Management system:
1. job analysis and design *
   (e.g., job/ position descriptions and job/ person specification of support personnel at NAP)
2. performance management system and performance appraisal
3. training and development (T&D)
4. health and safety
5. compensation system *
6. Human Resource Information System (HRIS)
7. Industrial relations

Current Human Resource Development system
8. Organisational Development
9. Career Development/ Career Opportunities (if any) *
10. Training & Development *

11. Size of HR department and their structure/ roles
12. Any other relevant information

C) Recruitment & Selection

Q1. Please explain the employment selection system in your NAP:
1. Employment opportunities and programmes
2. Recruitment process/ methods/ sources (internal vs. external recruitment)/ time
3. Selection stages/ criteria/ methods/ tools/ time interval. For examples:
   • Initial screening
   • Testing (e.g., use of psychological tool, etc. Please illustrate)
   • Interviews
   • Pre-employment/ background check
   • Medical check
   • Job offer
3. Equal Employment Opportunities (EEO)-if any
4. Any other relevant information

Q2. What influence might these selection procedures have on social-psychological phenomena among Antarctic support personnel? Please explain and support with relevant examples.

Q3. What are the selection-related challenges currently faced by your NAP and support personnel?

Q4. What recommendations would you give to the stakeholders in meeting these challenges?

Q5. Is there anything else that you would like to add on?
# APPENDIX 4: ORGANISATION CORPORATE VALUES

<table>
<thead>
<tr>
<th>BAS (Source: <a href="http://www.antarctica.ac.uk">http://www.antarctica.ac.uk</a>)</th>
<th>AntNZ (Sources: <a href="http://www.antarcticanz.govt.nz">http://www.antarcticanz.govt.nz</a>; Statement of intent 2007-2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision</td>
<td>Antarctica and the Southern Ocean: Valued, Protected, Understood</td>
</tr>
<tr>
<td><strong>Mission</strong></td>
<td><strong>Mission</strong></td>
</tr>
<tr>
<td>- To undertake a world-class programme of scientific research, survey and long term observations addressing key issues of global or fundamental importance that can best be dealt with by research requiring access to the Antarctic or related regions.</td>
<td>- Advancing appreciation, conservation and knowledge of Antarctica and the Southern Ocean for the benefit of New Zealand and the world community through leadership, partnership, and involvement in high-quality Antarctic and Southern Ocean-related activities.</td>
</tr>
<tr>
<td>- To sustain for the UK an active and influential regional presence and a leadership role in Antarctic affairs.</td>
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<tr>
<td>- To maintain an integrated, well-managed national capability to support the overall NERC science strategy, to exploit research outcomes, and to raise public awareness worldwide.</td>
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<tr>
<td>- To assist in the discharge of the UK's international responsibilities under the Antarctic Treaty System and with the administration of the British Antarctic Territory.</td>
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<tr>
<td>- To provide reliable and independent advice to the UK government and other stakeholders, contributing to the effectiveness of UK public services and policy.</td>
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<tr>
<td>- To provide a focus for national and international co-operation, and for the co-ordination of major research programmes, especially those addressing complex scientific problems or requiring significant technology or infrastructure.</td>
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<table>
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<tr>
<th>Cultural Values</th>
<th>TTCQSC</th>
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<tbody>
<tr>
<td><strong>PRICE</strong></td>
<td><strong>TEAMWORK:</strong></td>
</tr>
<tr>
<td><strong>POSITIVE:</strong></td>
<td>Recognise each other's expertise in a wide range of areas and succeed by working together.</td>
</tr>
<tr>
<td>Positive attitude, energy, realism, enjoys the work.</td>
<td><strong>TRUST:</strong></td>
</tr>
<tr>
<td><strong>RESPONSIBLE:</strong></td>
<td>Have confidence in one another.</td>
</tr>
<tr>
<td>Safety conscious, environmentally friendly, accountable for one's actions, honourable, ethical, open and fair.</td>
<td><strong>CARING FOR THE ENVIRONMENT:</strong></td>
</tr>
<tr>
<td><strong>IMAGINATIVE:</strong></td>
<td>Recognize the intrinsic value of the natural environment and are committed to its operation.</td>
</tr>
<tr>
<td>Creative, flexible, thinking of better ways, constructively challenging, learning from experience, problem solving, entrepreneurial and outward looking.</td>
<td><strong>QUALITY:</strong></td>
</tr>
<tr>
<td><strong>COOPERATIVE:</strong></td>
<td>Strive to deliver ever-improving value to our stakeholders.</td>
</tr>
<tr>
<td>Open, communicative, caring and loyal to one another, working in the best interests of BAS and science.</td>
<td><strong>SAFETY:</strong></td>
</tr>
<tr>
<td><strong>EXCELLENT:</strong></td>
<td>Ensure high safety standards to the planning and conduct of all activities.</td>
</tr>
<tr>
<td>Professional, efficient and effective, successful and recognised, high quality, applying best practice and developing our people.</td>
<td><strong>CUSTOMER SERVICE:</strong></td>
</tr>
<tr>
<td></td>
<td>Aim to meet all realistic expectations with professional standards and proactive behaviour.</td>
</tr>
</tbody>
</table>
### APPENDIX 5: SCOPE OF INTERVIEW TOPICS/QUESTIONS

<table>
<thead>
<tr>
<th>BAS (source: BAS2, 2008)</th>
<th>AntNZ (source: ANTNZ1, 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. motives for applying</td>
<td>1. Motivation/ Enthusiasm</td>
</tr>
<tr>
<td>2. interest in Antarctica</td>
<td></td>
</tr>
<tr>
<td>3. do they know anyone who has been and had the experience (recently or otherwise as there is often some &quot;word of mouth&quot; contact pre interview).</td>
<td>• What lead you to apply for this position, Why Antarctica, why now?</td>
</tr>
<tr>
<td>4. depth of knowledge on Antarctica beyond a candidates own trade or area of science</td>
<td>• What do you know about AntNZ / SB, visited the website? any books etc.</td>
</tr>
<tr>
<td>5. if a scientist, have they accessed and read relevant previous and contemporary journals and papers</td>
<td>• What do you imagine the role, from what you know at present, will consist of? (After the answer give brief description)</td>
</tr>
<tr>
<td>6. if a trades person have they researched the true nature of the position</td>
<td>• What aspects of this role appeals to you?</td>
</tr>
<tr>
<td>7. has individual thought about time away, who is being left behind, family issues, partner</td>
<td>• How do you keep yourself motivate on a boring or repetitive jobs? An example of a job that falls into this category</td>
</tr>
<tr>
<td>8. emphasise and discuss the isolation</td>
<td>2. Job-related skills &amp; experience</td>
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<td>9. explore any reservations - what are negatives and downside, what do they find daunting about the possibility. (links with other prompts above of course) i.e., looking for confidence but not over confidence and reassuring about the organisation if someone appears over anxious.</td>
<td>• You’re presently working at........... As,, so could you describe your typical working day? What are you working on at present?</td>
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<td>10. exploring BAS cultural values and why they are important</td>
<td>• What job are you working on at the moment, what is your involvement?</td>
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<td>11. raise and explain communication (these days e-mail, telephone, web and snail mail - the latter still being very important)</td>
<td>• What do you enjoy most about your present job?</td>
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<td>12. identify positives and negatives of isolated (but not lonely) cheek by jowl living</td>
<td>• What do you most dislike about it, how do you handle that aspect?</td>
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<td>13. explore examples candidate may have of isolated and or close community living</td>
<td>• Briefly describe and expand on your background within the following areas-</td>
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<td>14. questions to explore candidates strengths and weaknesses but could include looking at humour, faults and foibles in themselves and others, controlling temperament, dislikes in others, dealing with difficult people – indeed what is a difficult person, ability to use time well, what like when not so busy, how shy, how gregarious, awareness of how they come across to others, managing personal relationships, attitudes to and</td>
<td>• Petrol engines, vehicles and small plant</td>
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<td>• Diesel engines /equipment</td>
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<td>• Heavy plant/tracked vehicles, include driving experience, give examples of where you drive/operate equipment</td>
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<td>• Auto electrics</td>
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<td>• Welding/general fabrication, give examples</td>
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<td>• Relate your experience of field work in remote locations</td>
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<td>• What classes of driver licences held?</td>
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<td>3. Communication and Interaction</td>
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<td>• Can you relate a time when you had to deal with conflict in the work place?</td>
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<td></td>
<td>• Would you have done anything different?</td>
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<td></td>
<td>• How often do you use a computer?</td>
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</tbody>
</table>
15. interests and hobbies; just lists or do they have a passion for their interests (without being obsessive)

16. training and development the individual might expect from BAS

17. how the individual is expecting time in Antarctica to do for them (how it might be regarded on their CV - i.e., and being extreme to make the point, are they adventurous and motivated hard worker v lazy society opt out) without being negative looking at the down sides of time away on a career - A medical officer for example might be leaving a 7 year government foundation training scheme with potential impact on later life career expectation)

18. maybe discret questioning to take up a point made by a referee

19. not least, but usually easiest to assess; can they do the job; are they professionally qualified, what flair / inspiration will they bring to job, can they add value, make a difference, how will they take the role forward and not just stagnate etc. Are they over qualified for the job, this can hold issues in respect of job satisfaction, motivation, boredom etc. Note: Some of the hardest cases of unease over winter are people who find the job, in their opinion, beneath them.

20. Additionally, depending on profession or trade (e.g., explore IT ability, comfort in submitting reports, working with a remote line manager and the challenges it brings, views on Health and safety and risk assessment).

21. Finally, questions from the candidate, usually taken at the end can be revealing in gauging level of real interest and commitment.

4. Team Work / Team Building
   - Working at SB as part of a greater team delivering a quality service to our clients for a better word- The need to pitch in and help wherever and whenever required, even if it means doing tasks outside of your area of responsibility, can you relate this to any past experiences?
   - Explain SB fire crew- (relate the training), have you ever been involved with training in a group similar to this?
   - The social side of life at SB depends on people organizing their own activities as far as parties etc go, how do you consider yourself- a "mover" or more of a "follower", any experiences to share
   - Does your present employer have an active OSH committee, if so do you have a role in this?
   - Any personal views on OSH?

5. Compatibility
   - What does it take to get under your skin?
   - Being at SB means limited access to the outside world, personal situations at home have proven to be a bigger influence than people expect- life at home must go on- have you any similar experiences - do you have any support plans in place?
   - Life at SB can be quite restrictive at times (relate examples like flagged routes, sign-out book etc), any experiences to similar situations?
   - Speak about the restrictions on smokers at SB
   - Communal living- you're going to share a room with one other person, who would be your worst roommate?

Information for candidate
   - Remuneration for position
   - Any job offer is dependent on passing a full medical exam.
   - Personality Profile if successful summer candidate.
   - Interviews completed by 30 June
   - Employment offers 11-13 July
   - Employment begins dependant on position 19 September
   - Season starts 4 October