# SOCIAL IDENTITY THEORY AND INTERGROUP RELATIONS IN GENDER DOMINATED OCCUPATIONS

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# ABSTRACT

Previous research has found that men and women have quite different experiences of working in opposite gender dominated occupations. The effect of societal status on the processes that occur in gender dominated occupations often results in negative outcomes for women and positive outcomes for men. The study aimed to explore the attitudes and beliefs of individuals working in gender dominated occupations. It focussed specifically on how people who work in gender dominated occupations react to their group's position as a numerical majority or minority and the groups' attitudes towards their situation. Social Identity Theory (SIT, Tajfel & Turner, 1979) was adopted as a guiding framework for the research.

The sample for the study consisted of male and female volunteers working in gender dominated occupations. 110 male and female nurses and 97 men and women working in two male dominated occupations (engineers and prison officers) participated. To achieve the aims of the study specific areas of SIT were measured. The areas included identification with the gender group, how prominent gender and occupation were in the self-concept, and whether gender was used as a basis for categorisations of others. Also measured were perceptions of the status of the groups and beliefs about how fair and open to change the intergroup situation was. In addition, perceived acceptance of the ingroup and acceptance towards the outgroup, beliefs about changing the groups' position and the support or rejection of outgroups' beliefs were measured. The following specific measures were used: the Spontaneous Self-concept, the Gender Salience Scale, and Hinkle, Taylor, Fox-Cardamone and Crook's (1989) measure of group identification. SIT makes specific predictions about how beliefs about the intergroup situation and identification with the group are related to social change beliefs.

Results showed that gender affected choice of social change beliefs for achieving positive distinctiveness, with men being higher on social mobility beliefs, and women higher in social creativity and social competition beliefs. Engineers were higher in social mobility beliefs and social creativity beliefs than nurses. Status also affected

social change beliefs with low status groups being more likely to choose social competition strategies than high status groups.

Women showed less support for social competition and social creativity beliefs in the outgroup than men. Women showed more support for social mobility beliefs in the outgroup than men. Nurses showed less support for social mobility beliefs in the outgroup than engineers. Nurses had lower social competition (maintaining status) beliefs than did engineers. Status also affected support of the outgroup's social change beliefs. The low status group showed higher support of social mobility beliefs in the outgroup than the high status group, and higher social competition beliefs than the equal and high status groups. The equal group showed less support for outgroup social competition than did the high status group.

The results of regression analysis showed that gender was the best predictor of ingroup social mobility beliefs and ingroup social competition beliefs. Gender also was the best predictor of attitudes towards outgroup social mobility beliefs and ingroup social competition (to maintain status) beliefs. Gender identification was the best predictor of ingroup social creativity beliefs, and support for social creativity beliefs in the outgroup. Legitimacy beliefs were the best predictor of support or rejection of the outgroup's social competition beliefs.

The results of this study highlight the importance of using an approach that explores the different variables that predict each social change belief rather than focussing on the relationship between identification and differentiation as previous studies have done.

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# CHAPTER ONE

## 1:1 Background

Comedian Paul Reiser highlights the complex intergroup relations that exist between the genders: "When you're a couple, each person represents their gender. You're the flag bearer for the whole team. And if any member of your team, anywhere in the world, past or present, does something to offend, you have to answer for it" (Reiser, 1994, p.174). Although men and women interact and co-operate as individuals at work and at home with their families, at times they are aware of difference between the genders and identify with their own gender. Viewing the genders as two different and often conflictual groups is encouraged by the media, where the conflict between genders often forms the basis of stand up and television comedy. Popular authors such as Gray (1993) and Pease and Pease (1998) also overemphasize the difference between the genders as groups and ignore the differences that exist within the gender groups. Gender relations are not straightforward as there is a degree of competition between the genders as groups, but there is also a high level of interdependence between the gender groups and between individual members of the groups (del Boca & Ashmore, 1986).

A large number of men and women work predominately with the opposite gender. Women's involvement in the paid workforce in New Zealand has continued to increase since women first began entering the workforce. However, the distribution of women and men across occupations and industries has remained segregated (Statistics NZ, 1999). Detailed analyses of gender segregation have not been published from the last New Zealand census in 1996. Statistics from the 1991 New Zealand Census show different profiles for male and female dominated occupations. Women were concentrated in a narrower range of industries and occupations than were men. The proportion of women working in female dominated occupations (defined as less than 32% male) increased between 1971 and 1991. In addition between 1981 and 1991 the 10 occupations employing the largest numbers of men maintained the same degree of numerical male domination while the 10 occupations employing the largest numbers of

women became less numerically female dominated (NZ Department of Statistics, 1993). Although the same detailed analyses were not published from the last census in 1996, the trends have continued with the statistics showing that "women work in a narrower range of occupations than men and occupational segregation by sex remains a feature of the workforce" (Statistics NZ, 1999, p. 95). For example, over 90 percent of early childhood workers, nurses, and secretaries are women, and over 90% of carpenters and mechanics are men. The 10 occupations employing the largest number of women and the 10 employing the largest number of men have only two occupations in common. These two occupations were supply and distribution managers, and salespersons and demonstrators (Statistics NZ, 1999).

According to McClean and Kalin (1994) occupational segregation by gender is extensive, persistent, and slow to change. Occupational segregation is particularly important because of the implications that it has for wages, as women tend to be over-represented in lower paying jobs. The traditional gender pay gap remains in New Zealand. A recent study shows that females earn between 18-19% less than comparable males ("Qualifications play" 2000). Ryan (1994) identifies three consequences of gender based segregation of the labour market. Firstly, individuals' perceptions of the managerial role and the characteristics of managers can become based on masculine notions of hierarchy and control. It also creates occupational hierarchies, where women are over-represented in the jobs at the bottom. These are usually repetitive, boring, and low skilled jobs offering poor wages and conditions. Thirdly, occupations such as childcare that reproduce domestic work are undervalued and seen as unskilled. Bond and Kemp (1991) provided support for Ryan's statements, finding that respondents in New Zealand perceived female dominated occupations as lower in value than male dominated occupations.

Research suggests that men in female dominated occupations have different experiences to women in male dominated occupations. Researchers have found that men find it easier to be accepted into female dominated jobs and that men's minority position can assist in their career progression (C. Williams, 1992). Benokraitis and Feagin (1986) even suggest that men are valued in non-traditional jobs simply because

they are not women. Men also find that "female jobs" can be stepping-stones to jobs in management. Although the New Zealand Ministry of Women's Affairs monitors women's representation in the workforce, there is no governmental body responsible for monitoring males' entry into female dominated occupations. There is also less research available on men in female dominated occupations than on women in male dominated occupations. Many companies and labour organisations do not keep statistics on the gender demographics of their workforces. There is also little research into the gender-based stereotypes of men, men's gender roles and men's views of gender relations. Researchers on the effects of tokenism in the workplace have assumed that the same processes operate for any under-represented group regardless of their societal status (e.g., Kanter, 1977). This assumption has been criticised for not taking into consideration the effect of the status differences between the genders that are brought into the workplace from society. For example, Zimmer (1988) states that women's treatment in the workforce is due to "notions of inferiority rather than scarcity" (p. 72).

Cockburn (1991) identifies institutions and culture as two factors that obstruct sex equality in organizations. Institutions involve structures, procedures, and rules that disadvantage women. Cultures arise in discourse and interaction, and influence what people feel, think, and do. The men Cockburn studied created a masculine focused culture around the work they did that made women feel like they did not belong. There is some evidence that the type of discrimination confronting minorities in the workplace is changing. Overtly unequal treatment of women or racial minorities is no longer socially acceptable and has been replaced by more subtle or covert discrimination (Benokraitis & Feagin, 1986; Swim, Aiken, Hall & Hunter, 1995).

The change to subtle or covert discrimination represents a change from institutional discrimination to cultural discrimination. Legislation and methods of complaint have been put into place to ensure at least an outward show of equality for minorities in the workplace. In New Zealand, this includes the ratifying of the Convention for the Elimination of Discrimination against Women in 1984, the formation of the Equal Employment Opportunities Trust in 1991, and the introduction of the Human Rights Act in 1993. The move to more subtle and covert discrimination

means that minorities are most likely to experience cultural and interactional forms of discrimination (Swim et al., 1995). Thus, the study of attitudes toward gender relations is crucial to understanding discrimination in the workplace.

Occupations that are gender dominated become gendered, or gender stereotyped, which means the attributes or skills needed for the job are seen as either feminine or masculine (Liff & Aikenhead, 1992). This creates additional pressure for gender minorities in these occupations, as they may be perceived as gender role deviants. Minority women in male dominated occupations have been referred to as double deviants because they differ from the dominant gender in the workplace and they do not conform to occupational norms (Yoder, 1994).

The current study aims to explore the attitudes and beliefs of individuals working in gender-dominated occupations. Social Identity Theory (SIT) (Tajfel 1975, 1978, Tajfel & Turner, 1979) will be used as a guiding framework for the present research. SIT is particularly suitable because it takes into account the reactions and attitudes of both the majority and minority groups in an intergroup situation. The scope of SIT is very broad, covering identity, categorizations, actions, and discrimination between groups. SIT was a departure from the previous theories on intergroup relations such as Realistic Conflict Theory (Sherif, 1966, cited in Tajfel & Turner, 1979). SIT did not focus solely on individual causes of prejudice and intergroup action, and claimed not to impose individual processes onto intergroup relations as previous theories had done. In contrast, SIT considered how the group contributed to and constitutes part of the individual, and how these in turn influence the groups' actions and beliefs. SIT was designed to consider groups' situations where the groups did not have equal status, and makes specific predictions of what individuals in a group of lower status will do in reaction to their situation. SIT also includes predictions about how advantaged groups react to threats to their status, and can predict when the advantaged group will accept the change in position of the lower status group and when it will not (Finchilescu & de la Rey, 1991). SIT takes more factors into account than just numerical proportions when assessing groups' status, and so is ideal as a framework for studying men and women in gender dominated occupations. SIT has been previously applied to the study of gender relations (Breinlinger & Kelly, 1994, J.

Williams, 1984) and has been successfully applied to organizational settings (e.g., Haslam, Powell & Turner, 2000).

## 1.2 Overview of the Current Study

Large numbers of people work in a gender dominated environment. The present study used Social Identity Theory (SIT, Tajfel & Turner, 1979), as a framework to explore the relations between the gender groups in three gender dominated occupations: nursing, engineering and prison officers. The current study explored the attitudes of individuals' who work in gender dominated occupations towards their group's position as a numerical majority or minority. The particular focus was on the social change beliefs that individuals hold about their group's situation. The current study also explored whether status in society affects the attitudes of the majority and minority groups. Studying minority groups' attitudes to their situation, and majority groups' attitudes to other groups will be useful for organisations when trying to increase the numbers of a minority group in a gender-dominated occupation, or when trying to improve relations between different groups. These are areas of SIT that researchers have not previously studied, therefore this study will contribute to knowledge about relations between natural groups in natural settings. The study also extends SIT by providing information about the beliefs and attitudes of groups who see their status as equal, and about groups' support or rejection of each others beliefs.

To achieve these aims specific constructs of SIT were measured. These included identification with the gender group, how prominent gender and occupation were in the self-concept and whether gender was used as a basis for categorisations of others. Also measured were perceptions of status, beliefs about how fair, open to change and accepting the groups were; beliefs about changing the groups' position and the attitudes of the groups to the outgroups' beliefs.

The current study begins with a chapter proving a background of the experiences of men and women who work in gender dominated occupations. The three specific occupations that were studied are introduced in this chapter. Chapter 3 introduces SIT:

particular attention is given to the research that has been conducted on gender groups. Chapter 4 outlines the research themes and hypotheses of the current study. Chapter 5 outlines the methodology that was used, and Chapter 6 presents the results of the study. Chapter 7 is the discussion of the results and conclusions.

# CHAPTER 2: GENDER DOMINATED OCCUPATIONS AND TOKENISM

## 2.1 Introduction

Chapter 2 aims to give a background on the experiences of minority genders in gender dominated occupations. Firstly, the issues and processes of tokenism and discrimination will be introduced; this includes an overview of previous research. Lastly, the three specific gender dominated occupations sampled, engineering, nursing and prison officers, will be described.

'Tokenism' as a term is widely used but less often adequately defined. Kanter (1977) defines tokens as those few members (under 15%) of a social type in an environment dominated by another social type who control the environment and its culture. She calls these category members tokens as they are treated as symbols rather than individuals. Tokenism does indicate more than just numerical under-representation, but is a situation where one group is in control. Kanter (1977) also described tokens as being readily identifiable as group members. Gender and race are often readily identifiable social categories facilitating tokenism. The dominant group also holds certain assumptions about the attributes, behaviour and suitable roles of the tokens. Lone category members are not always tokens. It is possible that their presence in the situation is taken for granted and seen as unremarkable then they do not experience tokenism processes. Tokenism is also often used to refer to the situation that exists when minority group members are hired or promoted solely because of their minority group membership or to ensure that government or organizational quotas are met (Zimmer, 1988).

## 2:2 Tokenism

Gender dominated occupations have been approached for study in three main ways. Field research has looked at the general principles and processes of tokenism.

Laboratory based research has manipulated token situations, stereotypes and attitudes. A third group of studies has examined the experiences of individuals in specific occupations, including experiences of gender based discrimination. Many of the studies of gender based discrimination are carried out in gender dominated occupations as it is often assumed to be more prevalent in these occupations. Researchers in all areas have approached tokenism from a wide range of perspectives and disciplines including women's studies, sociology, and psychology.

## *Principles and Processes of Tokenism*

The first group of research studies was initiated by the work of Kanter (1977). Previously Kanter (1976) had begun examining how some of the attributes that were previously seen as sex differences may actually be attributed to the structural position of the genders in the work place. Kanter identified four types of group based on the relative proportions in the group. 'Uniform' groups have only one type of member. 'Skewed' groups have a ratio of around 85% of one type of member and 15% of a different type. 'Tilted' groups are those with a ratio of around 65% to 35%. Lastly, 'balanced' groups have from around 50-60% of one group and 40 to 50% of another. These terms are now widely used to describe the different proportions in token situations such as those in gender dominated occupations. Token dynamics are strongest in the skewed groups. As well as being numerically uncommon, tokens are also usually readily identified by ascribed characteristics such as gender and ethnicity.

Kanter (1977) identified three main processes that tokens experience, namely, 'visibility', 'polarization', and 'assimilation'. Visibility imposed performance pressures on tokens as they felt that people noticed them, and often people remembered the names of the tokens more easily. Visibility also made the tokens feel as if they were representing their category to the dominant group and that the worth of the whole category hung on their performance. The women in Kanter's study also felt that they were being evaluated on two measures: "how *as women* they carried out the sales role and how *as salesworkers* they lived up to images of womanhood" (p. 973, author's

emphasis). The visibility of a token took the form of attention to the discrepant characteristics of the token rather than to their achievements and abilities. For example, colleagues noticed physical appearance more often than credentials. The additional attention created performance pressures for the token and although the tokens felt that they had to work extra hard to prove themselves and have their achievements noticed, they felt that they could not work so hard that they made the dominant group look inferior.

Polarization is the process by which the dominant group exaggerated their commonality and the difference of the token. According to Kanter, "the presence of a token makes dominants more aware of what they have in common at the same time that it threatens that commonality"(p. 975). The dominants emphasized and exaggerated the aspects of their culture that the tokens did not share. For example, one of the behaviours of the dominants that emphasized the tokens' difference was to question or apologize for certain behaviour. The men that Kanter (1977) studied would often apologize for swearing or ask if they could tell a 'dirty joke'. This served to reinforce the dominant group's own understanding of their culture and at the same time set boundaries on the behaviour that was expected from the token. Tokens were also excluded from informal networks because of their difference. Often their loyalty to the dominant group was tested. For example, the dominant group required tokens to laugh at jokes at the expense of their own group or to side with the dominant group against their own group.

The last process Kanter (1977) identified was assimilation. The dominant group distorted the characteristics of the tokens, to fit with their pre-existing stereotypes or generalizations about the tokens' category. There were several aspects of this process. As the tokens were uncommon in their role, people they came across assumed them to be in the role more common for their gender. For example many of the women in Kanter's study were assumed to be the secretary, or in informal settings the wife of a businessman. In addition, the dominant group often gave tokens assignments more suitable to the alternative role, such as secretarial duties. This occurred even when the dominant group was aware of a token's true position. Another aspect of assimilation

was 'stereotyped role induction'. Members of the dominant group Kanter observed tried to induce the tokens to take on stereotypical roles, with which the dominant group felt more comfortable interacting. Some tokens were treated as a 'mother', used by the dominant members as a listener for their problems and as a source of nurture and support. Other tokens were seen as sexually desirable or available and their role was to play 'the seductress'. If the token placed in this role favoured one dominant member over others this caused jealousy among them. The 'pet' was a token who was treated as a symbol or mascot. Pets were an audience for displays of the dominant culture, and were often treated as 'precious or precocious' when they showed any occupational competence. Women who resisted being inducted into any of these roles were typically forced into the 'iron maiden' role. These women were seen by the dominant to be tough and often labelled as feminists.

Kanter (1977) focused mainly on numerical proportions and assumed that these had the most effect on tokens' experience. She also mentioned some other variables that will affect the tokenism processes. For example token status was heightened if the tokens' deviant characteristics were physically obvious, as is gender and if the tokens' group was new to the setting. The opportunity and power structure of the organization and sex roles also affected the tokens. She did briefly mention the effect of societal status on tokenism, but downplayed its relevance, claiming that "if the token's master status is higher than that of the situational dominants, some of the content of the interaction may change while the dynamics remain the same" (p. 986). Kanter claimed that the importance of these aspects is heightened if members of the dominant group are accustomed to interacting with the tokens in roles different to those they occupy in their current situation.

Zimmer (1988) criticizes Kanter for focusing too narrowly on the effects of numerical under-representation, and not taking into account the effect that societal sexism has on the organizational processes. Kanter (1977) sees increasing the numerical representation of the group as the solution to tokenism processes. Zimmer claims that social attributes are at least as important as numbers and gender-neutral theories of organizational behaviour such as Kanter's (1977) mask reality.

One of the societal attributes that can influence group members in token situations is that although organizational structures are assumed to be gender neutral they are not. Acker (1990) stated that an organization's idea of a worker is usually a white male with total commitment to the organization. Cockburn (1991) also states that organizations are not gender neutral in their approach to workers as they do not take into account the differing responsibilities that men and women often take on in a gendered society. She claims that "until the symbolic man-as-citizen has his mind on the cooker, his eye on a toddler and a hand on granddad's wheelchair no constitution will guarantee social equality" (p. 95). Ryan (1994) suggests that discriminatory behaviour at work often results from the attitudes held by the dominant group that women are secondary earners with less attachment to work and less interest in advancement than men.

Fairhurst and Snavely (1983a) highlight the importance of the power distribution between groups on tokenism processes. Tokens generally have less power in an organization than the dominant members. Fairhurst and Snavely found (1983b) that male tokens did not experience as much social isolation as the female tokens in Kanter's (1977) study. They suggest that this may be because male tokens are not as powerless as female tokens. Male tokens have a higher societal status than female tokens and this aids them in the workplace. Fairhurst and Snavely (1983a) explain that this gives the male tokens a power base that balances the power women have from being a majority and enables them to resist their token status.

In addition, men may find it easier to be accepted by female colleagues in female dominated occupations than women in male dominated occupations (Benokraitis & Feagin, 1986). Ellemers, Doosje, Van Knippenberg and Wilke (1992) studied the relationship between status and numerical minority or majority. Being a numerical minority or majority does not automatically determine status. Ellemers et al. (1992) emphasize the fact that status, power, and numerical size are different characteristics and that they should not be used interchangeably. They found that a high status minority was viewed more favourably than a low status minority. However, when the ingroup was a majority there was no difference in positive feeling towards the group in the low or high status conditions. Their research suggests that because males in female dominated occupations

are a high status minority they, may identify more with their group than women in male dominated occupations.

Yoder (1994) also discusses the different aspects that can affect tokenism processes. She claims that there were actually four factors at work in the situation that Kanter (1977) studied, and Kanter predominately focused on one of these: numeric imbalance. The other three aspects that Yoder mentions are gender status, occupational gender-inappropriateness, and changes in the positions of the genders in the occupation as a whole.

Benokraitis and Feagin (1986) identify some characteristics of tokenism in their discussion of subtle discrimination. They suggest that tokenism is used as an outward show of equality; it creates the impression that no group is totally excluded while it enables the dominant group to control the entry of other groups. They describe tokens as marginal, alienated members of the workgroup. Tokens are often hired and retained only as long as it is cost effective. In this situation turnover is inexpensive, so as soon as the minority starts requiring equal treatment or promotion they can be replaced by other token members. They also describe situations in which the minority members are placed in highly visible niches that have some power and status as symbols to signify that the organization is not discriminatory, which may become a role trap for the token and may limit their upward mobility. Tokenism can also be used as a threat to members of under-represented groups, as it can be used to make them doubt their abilities and position. For example, the members of the dominant group may say that a token only received a promotion because of their token status rather than their abilities.

Benokraitis and Feagin (1986) also found that sabotaging tokens' work was an effective form of discrimination in both traditionally female jobs and traditionally male jobs. In female dominated jobs, men may use sabotage to take control and take advantage of women's inferior job status. In traditionally male jobs, sabotage controls women's entry because women are seen as "potentially threatening the 'old gang' cohesion, camaraderie, and esprit de corps" (p. 109).

Another interesting example of covert discrimination that Benokraitis and Feagin discuss is the selection of women or other tokens who are brought into the

system and used to control the entry and promotion of other women. The selection of tokens decreases the tokens' identification with other women as they think they achieved their position through hard work. It gives the impression that the organization is gender neutral and does promote the minority group. Benokraitis and Feagin claim that letting some tokens succeed in the system also causes the other tokens to attribute their own positions to their lack of ability rather than structures within the organisation. The acceptance of some tokens discourages group challenges to the system.

Swim, Aiken, Hall and Hunter (1995) studied what they termed modern sexism. They found that individuals who were high in modern sexism were more likely to attribute sex segregation to individualistic causes. A denial of continuing discrimination, antagonism towards demands for equal treatment, and resentment of positive discrimination characterize modern sexism. They found that respondents who scored highly on the modern sexism measure also overestimated the percentage of women in male dominated occupations, which was related to their disbelief in the existence of continuing discrimination.

Other types of discrimination that contribute to the gender segregation of occupations are access and treatment discrimination, which involve discriminatory selection by employers, differential treatment, direct discrimination and harassment and gender stereotypes and expectations. Socialization also contributes to gender segregation. Gender appropriate role models direct individuals into gendered interests, traits and attitudes. Individuals also match their gendered self-image to a gendered occupational image that can contribute to the choice of occupation (McLean & Kalin, 1994).

## *Experimental Research*

Laboratory experiments have usually studied the effects of different numbers in the group on different attributes and attitudes. Crocker and McGraw (1984) carried out laboratory experiments designed to test whether behaviour in groups were, as claimed by Kanter (1977), caused by the structure and availability of power in the organization

or by gender differences. Crocker and McGraw used groups of differing proportions of males and females. They discovered that being the solo member of a gender did affect performance in a small group. The processes were similar for males and females but the outcomes were different depending on the status of the token. They found that gender salience is high for solos and the other members of their group. Gender was most salient for solo females. Males were more likely to be identified as group leaders in all groups. Group members were more satisfied with the group conditions when their group included a solo male than when it included a solo female. Crocker and McGraw conclude that the problems in gender dominated occupations may be caused by the violation of traditional gender roles, rather than just minority status.

Yoder (1994) also studied the different processes involved in tokenism focusing on perceptions of occupational deviance by measuring students rating of vignettes. She found that token numbers alone did not produce the tokenism processes identified by Kanter (1977). Subordinated gender status also contributed regardless of the gender appropriateness or prestige of the occupation. She also found contrary to her expectations that women in male defined occupations were not rated lower by respondents on work related qualities than traditionally occupied women, although their personal qualities were rated lower. The work atmosphere of female tokens was rated lower than that of male tokens and female non-tokens. The research by Crocker and McGraw (1984) and Yoder highlight that numbers alone do not create tokenism processes, interactions and the culture of the workplace also have an impact on tokenism processes.

The tokenism processes that minorities experience can affect tokens' own self-concepts. Macke (1981) studied the impact of sex related characteristics such as physical attractiveness and occupational competencies such as intelligence on the self-esteem of individuals in different gender dominated occupations. She found that sex-related characteristics were important determinants of self-esteem for individuals working in occupations dominated by either gender. The relative importance of occupational competencies was higher for those working in same gender dominated occupations. She explained her findings by claiming that characteristics that others in

the social environment emphasize become more salient. Colleagues of tokens emphasize tokens' gender more than their occupational competency, so gender becomes more salient for tokens' self-concept.

Another experiment designed to test differences between genders in token situations was conducted by McClean and Kalin (1994). They focused on the matching of a gendered self-image to an occupation. They found that both men and women in male dominated occupations have more masculine self-concepts than those in female-dominated occupations. They found that respondents saw stereotypically male occupations as high in dominance and low in affiliation. They also found that the individuals in the gender traditional occupations in their study showed a higher level of similarity between their self-concept and their relevant occupational stereotypes than those in the gender non-traditional fields. They also compared students' self-concept with their occupational stereotypes, finding that individuals entering female dominated occupations were higher in affiliation, and women were overall more affiliative than men were. The students' self-concepts were most similar to the field they were studying. McClean and Kalin's research suggests that women in male dominated occupations may not identify highly with their gender group because their self-concepts may be more masculine than other women's.

McCauley and Thangavelu (1991) also studied stereotyping and gender dominated occupations. They measured the strength of sex occupation stereotyping, using a sample of students and non-student adults. They specifically examined the link between occupational and personality-trait stereotyping. They found substantial gender stereotypes linked to occupation and personality traits. They found individuals' general perceptions of which occupations are gender dominated was accurate, but that the respondents tended to underestimate the percentage of women in both male and female dominated occupations. Respondents who saw a strong link between gender and occupation also saw a strong link between gender and personality traits.

Metcalfe (1987) studied the self-concepts of men and women in management. She found that men and women were equally ambitious, controlling, and forceful. Women also saw themselves as more intellectual than men which was in fact

demonstrated practically by the women holding higher academic qualifications than the men. The women managers had often experienced resentment and suspicion from male colleagues. Like Kanter (1977), Metcalfe found that the women saw themselves as highly visible, and as having to prove themselves. Women did not feel comfortable in the male dominated managerial environment and felt alienated by the emphasis on competitiveness and aggression. The women experienced conflict between their gender identity and the role that they were fulfilling. The conflict was expressed as a pressure "to separate themselves from their identity and reflect male gender-stereotyped behaviour as embodied in organizational cultures" (p. 218).

## *Research into Specific Occupations*

There has been a great deal of research focusing on the experiences of individuals working in specific gender dominated occupations, a brief overview of some of the research is provided here.

Morgan, Schor and Martin (1993) studied gender inequality in banking, finding that men advanced faster to middle management than women. Men had more work experience outside of banking than did women, and tended to have more mixed career paths with experience in more than one area within banking. They discovered that within banking, men were more likely to work in lending which was higher paid and lead more directly to management, whereas women more often worked in customer service positions.

Similar results were found in a study of women in business. Schneer and Reitman (1994) studied the career progress of women in business, an area which has traditionally been male dominated. They found that although women and men had similar experiences at the start of their careers, their mid career experience was not the same. They found the mid career environment was not supportive of women and that women had lower job satisfaction, were less appreciated by their bosses, experienced more discrimination and earned less than men.

An unsupportive environment may be an important factor in token processes. O'Farrell and Harlan (1982) compared male co-worker hostility towards women and job satisfaction in non-traditional jobs, defined as those predominately held by men and considered atypical for women, versus traditional female jobs. They also found that the women in non-traditional jobs were more satisfied with their pay and work than the women in the traditional jobs, and that the women in traditional jobs were more satisfied with their supervisors. They found no difference in satisfaction with co-workers. Both groups identified job security, pay, and work content as the most important job characteristics, and social interactions as least important. They also surveyed the women in the non-traditional jobs about the reactions of their male co-workers. They found that 18% strongly approved of women's presence, 44% approved, 11% had no opinion, 9% disapproved and 18% strongly disapproved. Thirty percent of the women in non-traditional jobs also reported that male co-workers gave them 'a hard time' and often excluded them from on the job training opportunities. Women in non-traditional jobs who had experienced harassment were less satisfied with every aspect of their job except pay. The women in non-traditional jobs who had not experienced harassment had higher overall job satisfaction than did the women in the traditional jobs.

Women who enter male dominated occupations may gain status from their occupation, while men may lose status by joining a female dominated occupation. Wharton and Baron (1991) studied the benefits and problems for women in male dominated workplaces compared to women in predominately female workplaces. They found that women in male dominated occupations were the most satisfied with their jobs; which was despite the fact that they were more likely to report discrimination. The least satisfied women worked in female tilted (15-30% male) settings. They explain these findings by suggesting that well-being is influenced by a combination of the positive aspects (such as higher pay) and negative aspects (such as discrimination) of the total situation. Wharton and Baron found that women's well-being was threatened most when males were a workplace minority, which is counter to the predictions of gender-neutral theories of tokenism processes. Wharton and Baron emphasize that power and

status in society as well as numbers in the workplace must be considered in analyses of gender dominated occupations. They also highlight the importance of gender mix in the workplace as an important determinant of job satisfaction.

Wharton and Baron (1987) also studied the effect of gender segregation on men's well-being. They found that the men in the mixed gender setting experienced lower job satisfaction and self-esteem than the men in the male dominated or the female dominated work setting. They concluded that token males might actually interact better with females in the female dominated setting than in the mixed setting. Their findings support theories such as SIT, that claim that increasing numbers of a new group increases the threat to the original group. They also discovered that the gender mix in the workplace affected women's well-being less than it affected men's well-being. They suggest that men have more to lose from gender integration than women do which may make them more sensitive to co-worker gender than women.

Other studies of men in female dominated occupations have been conducted. In a study of four female-dominated occupations, C. Williams (1992) found that men were mostly accepted into the occupations she studied, which were nursing, librarianship, social work and teaching. The men in her study experienced very little discrimination or prejudice from colleagues, although they did experience prejudice from the public, clients and people they met socially. She found that "unlike women who enter traditionally male professions, men's movement into these jobs is perceived by the 'outside world' as a step down in status" (p. 262).

C. Williams (1992) found that the men in her study often encountered preferential hiring, as there were so few men in their occupations that they were sought after. The women colleagues were often eager to accept men into their profession and yet they also resented the speed with which the men often advanced. Men were also advantaged when compared to female tokens in that even though they worked in a female dominated occupation, their superiors and supervisors were most often men. Men's difference is also often viewed in female dominated occupations as something positive, which gives men more of an incentive to group together than women tokens

have (C. Williams, 1992). For female tokens their gender is often seen as a negative thing, to be hidden, and this discourages bonding between the token women.

C. Williams (1992) found that men were often encouraged to enter specialties that others assumed were more appropriate for them as men. Men were often encouraged into the less hands-on areas of their occupations such as management, teaching and administration. Benokraitis and Feagin (1986) identify this as an aspect of subtle discrimination termed 'containment'. Tokenism generally refers to the exclusion of minority members, or quantitative exclusion. Containment is exclusion of a qualitative nature. It is the process used to direct minorities to certain areas of an occupation considered more appropriate for their gender.

Overall C. Williams found that men were advantaged by their minority status, and she emphasizes the need to use different solutions for enhancing men's experience of female dominated occupations than are used to assist women in male dominated occupations.

## 2.3 Male Dominated Occupations – Engineers and Prison Officers

### *Engineers*

Since the pioneering work of Kanter (1977) there have been numerous studies of women who work in male dominated occupations. Although there are similarities in the situations of women in the different male dominated occupations, there may also be aspects of their situations that are unique.

The present profile of women in engineering is very similar to women in other male dominated occupations as previously discussed. Entry into the profession for women has become easier over the last 20 years; and increasing numbers of women are entering the profession. However, women are still clustered in some fields of engineering and are under-represented at the more senior levels. In New Zealand at the last published census women made up 3.6% of professional engineers (Institute of Professional Engineers New Zealand, 1999). The largest number of female engineers

work in the chemical and civil engineering fields. Although women still only make up 22.1% of chemical engineers and 1.7% of civil engineers in New Zealand (IPENZ, 1999).

Studies have been conducted to try to discover the factors that contribute to the under-representation of women in engineering. Jagacinski, LeBold, and Linden (1987) found that in the United States, women engineers reported lower salaries and less supervisory responsibility than did men after only five years in the workforce. Jagacinski et al. found one factor that accounted for most of the difference between the men and the women in their sample. The women were more likely to have taken a career break than the men were. However, even controlling for this factor did not account for all of the difference between the salary and supervisory responsibility of the men and women. They found no educational differences between the men and the women, and they could not explain the difference between the men and the women. They suggest that less obvious factors such as "stereotypes and cultural values" (p. 246) may affect the progress of the women engineers.

Bailyn (1987) conducted a study with matched pairs of male and female engineers, and like Jagacinski et al. (1987) found that women were paid less and had less supervisory responsibility than comparable men. She found that women were lower in self-confidence than men were and that they put less value on technical expertise, than men. She suggests that technical work is gender alien for women.

In historically gender-dominated occupations such as engineering, not only are women under-represented numerically but they may also be disadvantaged by the link between the occupation and the gender role. Robinson and McIlwee (1989) compared engineers in four different specialties, aerospace, high tech, mechanical and electrical. Initially they thought that there would be less discrimination against women in the high tech and electrical areas, as these are the least traditional areas of engineering and have the highest numbers of women. They found that the women engineers working in aerospace and mechanical engineering had more experiences of overt discrimination and harassment from colleagues and sometimes from their managers, than women engineers in high tech and electrical areas. Surprisingly they found that the women did better in

these very male dominated environments, in terms of moving into senior positions in the organization. They explain these results by suggesting a number of factors that contribute to women's advancement in these organizations. Firstly, in aerospace the companies were mostly working on contract to the government and therefore must have affirmative action programmes in place, which work in favour of the women in the organization. In addition, these types of organization tend to be very bureaucratic and formal which, "means that the 'rules of the game' are clear. The newcomer in a non-traditional field can quickly learn the rules, and can rely on formal structures and qualifications as she seeks to advance" (p. 461). In the areas of high tech and electrical engineering, the organizations tend to be less traditional. The rules for promotion are less clear and rely more on "personal reputations and peer evaluations" (p. 461). The criteria for advancement rely on male defined styles of interaction. They also found that assertiveness and self-confidence were problems for the women engineers trying to work in these less structured environments.

Robinson and McIlwee (1989) suggest that structures and procedures within an organization are important because they define power relations. An individual's ability to progress in an environment is affected therefore by the structures and by the socialised gender attributes that may assist or hinder their ability to work with the structures.

In 1991, Robinson and McIlwee again studied engineers. They focussed particularly on the culture of engineering. They found that the culture of engineering was strongly identified with the male gender role. They argue that an occupational culture of this sort is maintained through the day-to-day interactions with others, and that conformity to the culture is the best way to fit into the strong group environment. They discovered that the culture was expressed through a strong ideology of obsession with tools and other hands-on abilities; which often excluded women, and prevented them from fitting in.

Robinson and McIlwee (1991) claim that women's odds of success improve as competence becomes less male defined. The tool-oriented hands-on aspect of the work is the most male identified. The other aspects that are important to the job for example,

research, writing, calculating, and administering are less male identified. As an engineer moves into more managerial positions, the work they do is less identified with the male gender role. The position of female engineers is therefore similar to male nurses. For male nurses the fact that management positions are less female identified than the hands-on nursing, works in their favour and enables them to rise to managerial positions quickly. However for the female engineers there are still gender role conflicts with the managerial role. Evetts (1993) described some of the difficulties that female engineers have moving into senior positions. She suggests that the manager ideal is still male defined, and that authority is still seen as a masculine attribute. She also mentions the problems women have with their family life influencing the time available to them to put into their careers. Evetts also suggests that what is defined as the competence necessary for a managerial position is still defined by the men holding those positions. These men can use criteria such as being solely committed to the job with no family commitments, which means that men in positions of power hold on to the rewards and exclude women.

## Prison Officers

The position of female prison officers is similar to that of female engineers, although there are some more specific problems that are related to the physical aspects of the job. In the prisons involved in the present study 21% of the prison officers were women. Corrections officers' work consists of three types of duties (Crouch, 1985): routine housekeeping and logistical duties, establishing and maintaining personal authority in relations with inmates and handling confrontations and physical violence.

Research outlines some of the difficulties female prison officers have encountered since being allowed to work in male prisons. In the United States, this occurred in the 1970's. Before that female prison officers were only permitted to work in women's prisons (Crouch, 1985). Jurik (1985) relates the move to permit female officers in men's prisons to the shift away from custodial prisons to an emphasis on rehabilitative prisons. An emphasis on rehabilitation changes the skills and abilities that

are needed in a prison officer. Jurik sees the previous custodial prisons, which focussed on social control as organisations where the traits perceived as masculine are valued. Rehabilitative prisons need staff that are more service oriented which creates an atmosphere that can place a greater value on traits that are perceived as feminine.

Jurik's (1985) study identified five major areas that create problems for female prison officers trying to integrate into the prison service. These are tokenism, conflicting organizational goals, external environmental conditions, informal organisational structures, and inadequate strategies for institutionalising correctional reforms. Some of these areas are specific to the prisons that she studied, and some of the areas are more general. Tokenism is common to women in all male dominated environments. Conflicting organisational goals is the conflict between a security emphasis and a rehabilitative emphasis that had not been successfully resolved in the prisons Jurik studied. External conditions refer to such problems as overcrowding and lack of staff due to high turnover. The female prison officers also often missed out on formal training because of staff shortages, which made it more difficult for them starting out on the job. Like the female engineers, female prison officers also seem to have most difficulty when the structures for promotion are informal, which creates an environment where it is who you know, and how well you fit in, that leads to promotion rather than competence or skill.

Jurik (1985) also found that the range of work that women were assigned in the prison was limited, which in turn limited their chances for promotion, as they had not had the necessary experience in all areas. The types of assignments that the women were given were wholly dependent on the attitudes of their supervisors who assigned the tasks. The limitation to certain roles and areas discouraged female officers to support each other as "these allocation patterns served to encourage 'intra-sex' competition for the valued assignments" (p. 385). Jurik emphasises the fact that it is the interaction of gender role socialisation and working conditions, that affects the women in male dominated occupations. She claims that previous researchers have focussed either on organizational dynamics or on individual attitudes not a combination of the two.

Crouch (1985) identified three structural factors that played a part in women's integration within the prisons: the proportion of women in the environment, (as discussed by Kanter, 1977), the paramilitary hierarchy, and the amount of security in the prison, minimum to maximum. What he terms the paramilitary hierarchy is the clear rank structure that exists, women tend to be inexperienced and at the bottom of the organization. These organizations tend to be rigid and traditional which limits the role of women. The different security levels in a prison determines the role of prison officers similarly to the emphasis identified by Jurik (1985) the less secure the prison the greater the emphasis on rehabilitation.

Crouch (1985) summarises some of the positive effects that women officers have been previously found to have on the prison, these include normalising the prison world, creating a more relaxed atmosphere and promoting better dress and behaviour among the inmates. Women correctional officers are similar in their situation to female police officers, as a lot of the resistance to their presence is due to their perceived physical inadequacies in violent situations. However, previous research indicates that women are less confrontational than men and can sometimes diffuse potentially violent situations with more success than do men (Bell, 1992). In fact, the women in Crouch's study found dealing with their work colleagues more difficult than dealing with the inmates.

Crouch (1985) also describes a set of norms that are perceived by male prison officers to define masculinity. The norms included aspects such as maintaining toughness and avoiding femininity, confidence and self-reliance, aggression and status. Women entering the prison workforce are a threat to the masculine occupational self-image. In fact, Crouch identifies women as "a status threat, if they perform well, masculinity is somehow devalued" (p. 540). Women prove the greatest threat to men with a lower class background or with traditional sex role definitions. The men who are most threatened will show the greatest resistance to women officers. He also claims that a vocal minority can sometimes introduce collective norms, which is especially true if those male officers who are accepting of women are not willing to admit it.

Crouch (1985) also highlights the lack of role models of behaviour that women have. As there are so few experienced women in the prisons, new officers only have

men to provide informal instruction. Crouch makes specific recommendations for the questions that future research should address including: the effect that the number of women in an institution has on the difficulties they face on the job, the degree to which male officers treat women in categorical ways, and how women officers adapt to, or handle, resistance from male officers.

Zuppan (1986) criticises previous researchers that have studied the effect women have on prisons, for concentrating on factors that are solely related to their gender for example, normalisation, and a more relaxed atmosphere. She claims that the researchers have ignored the skills and attitudes that women possess. She studied male and female officers to see if their abilities and attitudes to each other and to the inmates differed. She found that in fact there was very little difference between the male and female officers. Women rated safety for individuals more important than male officers did and women officers reported more job tension than men did. In other attitudes towards the inmates and the prison, there were no differences, which could be explained by recruitment processes that may only select women who have similar attitudes to existing officers.

## 2.4 Female Dominated Occupations - Nurses

The situation of men who work in a female dominated occupation is less clear than those of females who work in a male dominated occupation. In New Zealand, men make up 5% of registered nurses (Kiwicareers, 1998). Ott (1989) found that male nurses actually benefited from their situation. Ott also found that the female nurses resisted the presence of male nurses less than the male police resisted female officers. Floge and Merill (1986) found that male nurses were not as disadvantaged by their numerical status as female physicians. They also found that male nurses had more egalitarian interactions with physicians than did female nurses. They mention the total environment in which nurses work, and how as they progress up the hospital hierarchy their position changes. There are more males than females in the hospital administrative structure. Waddell (1995) states that less than 10% of nurses (in the United Kingdom)

are male but that men hold half of the management posts. He goes on to describe how he feels about being called a *male* nurse, and claims that nurses are always referred to as 'she', and expected to be female. He also mentions how his colleagues always ask questions about why male nurses chose nursing, but do not seem to question the females' career choice.

Heikes (1991) states that socio-cultural factors must be included in any consideration of tokenism as well as numerical factors. Although male nurses can be considered as a minority group numerically, they are still members of the majority group in society, which affects their position. Snavely and Fairhurst (1984) describe male nurses as high status tokens because of their status in society. They found that male nursing students did not display the characteristics of numerical tokens as introduced by Kanter (1977).

There are some indications that male nurses tend to end up in the less 'caring' nursing roles such as the ICU and psychiatric units. Heikes (1991) reports a case where a male nurse had to file a discrimination suit to get a job in the maternity area. Male nurses are also frequently asked to carry out such duties as lifting heavy patients, or dealing with difficult patients. Male nurses also have trouble as they do not fit into stereotypical gender roles, and so many are assumed homosexual. C. Williams (1992) conducted a study on men working in professions where men are the numerical minority. She found that the male nurses experienced some of the same problems as women but with the opposite result. She termed the phenomenon "the glass escalator" to contrast it with the "glass ceiling" that previous researchers have found that women experience (Morrison, White, & Van Velsor, 1987). She found that many male nurses encountered a preference for hiring and promoting men. Men were also often encouraged into certain areas of these occupations, which set them up for moves into management or administrative positions. For example, a nurse who wanted to pursue further studies in child and family health was encouraged to concentrate on adult nursing. She also discovered that the men developed good formal and informal relationships with their superiors, who were usually men. C. Williams (1992) found that unlike women, the men in her study encountered the most discrimination and

negative attitudes from the public (clients and outsiders), as their job was seen as inconsistent with male gender roles. She also found that men felt they had to protect themselves against sexual abuse suspicions particularly if they were working in areas such as paediatrics.

Buchan (1995) suggests that in the next few years the advantages that male nurses once had will decrease. The number of male nurses in the United Kingdom increased by 7.4% between 1991 and 1994 and the increase is larger than the actual increase in the overall numbers of nurses. The increase in numbers of male nurses was accompanied by a decrease in the number of management positions available, and a move towards community nursing and away from institutional care, which is a traditional area for male nurses.

One researcher (Villeneuve, 1994) has suggested that some of the dynamics of males in nursing, such as the way they seem to gather in administrative and management positions, may be explained by the differences in career development between male and female nurses. He states that men in Ontario, Canada are more likely to work full time than women in nursing: 81.2 % of men worked full time compared to 54.9 % of the women. He also reviewed relevant literature and found that male nursing managers tended to be more likely to have degrees than female nurses, who tended to collect more qualifications, but of lesser quality such as certificates. Men also had clearer ideas about their career paths even when they were still in school. He concludes that more efforts need to be made to attract and retain men to nursing.

There has also been some research that has been carried out into male gender roles and their violation. Some researchers have assumed that violation of gender roles, such as working in a traditionally female occupation, should result in increased stress or lowered well-being. The research however has not found this to be true (Thoreson, Shaughnessy, Cook & More, 1993). Other theorists suggest that men lose social status when they join female dominated occupations and they have lower self-esteem (Macke, 1981). Wharton and Baron (1987) claim that it is not the numerical balance that is important in tokenism processes. However the "quality and quantity of interactions in the workplace" (p. 575.) may have great influence on tokens. For example, Benokraitis

and Feagin (1986) describe the experiences of a male nurse who felt that the doctors singled him out as the most competent nurse. In contrast, female nurses often complain that doctors treat them like domestic help not professionals.

## 2.5 Chapter Summary

Gender equalities in the workplace remain; many occupations are still segregated by gender. Individuals who are tokens are very aware of their category membership and feel highly visible, they find that their category membership is overemphasised and that they are treated according to the roles the dominant group expects them to be fulfilling. The research into tokenism processes has often focused on the numerical proportions of the groups, without adequately exploring the different experiences of male and female tokens. Men still have a higher status in society than women, which may contribute to men being advantaged by their token status, while women are disadvantaged. As attitudes to gender equality change, procedures and rules to aid equality are more prevalent. Discrimination has become covert, which makes interactions between gender groups in the workplace increasingly important to the token's experience of working in a gender dominated environment. The colleagues of the tokens can either be supportive to their entry into the occupation or see them as threatening their position, which can affect the token's job satisfaction. Research has also shown that tokens can experience conflict between their gender and the characteristics needed for their occupation.

Women in engineering often have trouble integrating into the very technical atmosphere created by their male colleagues. Female engineers are more successful in situations that have formal rules, and that do not rely heavily on interactions with colleagues and supervisors. Female prison officers are assigned limited tasks within the prison and also have trouble integrating into the very masculine culture surrounding the work. Male nurses integrate more easily into the female dominated environment than female engineers or prison officers. They are also often encouraged into specific areas and treated according to their gender category, which in contrast to female engineers works to the male nurses advantage.

# CHAPTER THREE: SOCIAL IDENTITY THEORY

SIT is the theory that was adopted in the present study as a theoretical framework to study gender groups in nursing, engineering and among prison officers. In this chapter an overview of SIT is given, then previous research using SIT to study gender relations is reviewed. The basic principles or areas of SIT are introduced, the research in each area is briefly described and then the area is related to gender relations. The principles of SIT include social categorisations, identification, social comparisons, beliefs about the intergroup situation, and social change beliefs.

## 3:1 Overview of Social Identity Theory

SIT is an ideal framework to investigate gender relations. Social Identity Theory was developed in Europe in the late seventies by Tajfel and Turner (Tajfel, 1974, 1975; Tajfel & Turner, 1979). It was developed as a reaction to the earlier reductionist theories of intergroup relations, which had their origins in the USA, for example Sherif's Realistic Conflict Theory (Taylor & Moghaddam, 1994). These theories tended to concentrate on *individuals'* behaviour in groups, or tried to understand group behaviour using the principles developed to understand individuals' behaviour. SIT on the other hand explains how the group can contribute to an individual's identity, and focuses on the "group in the individual" (Hogg & Abrams, 1988, p. 3). SIT is concerned with the unequal status relations between groups being "originally developed to account for phenomena such as discrimination against, hostility towards or persecution of members of outgroups" (Emler & Hopkins, 1990, p. 113). The theory makes specific and testable predictions about the effects of belonging to a group of low status, and the reactions of groups of high status to threatened status, which makes it particularly suitable for studying gender relations in gender dominated occupations. SIT

conceptualises social interactions as falling on a continuum with solely interpersonal interactions at one end and intergroup relations at the other.

Social Identity Theory had its origins in the information processing principles of research on categorization. The theory originated from work done by Tajfel and colleagues studying at the categorization of lines of differing lengths (e.g., Tajfel & Wilkes, 1963). They discovered that categorisation of the lines into groups made people overestimate the similarities within the groups and the differences between the groups. They termed this 'the accentuation principle'. Tajfel believed that this effect occurred in social categorizations – of people into groups for example as well as in cognitive processing of visual stimuli. Social categorizations are the "cognitive tools, that segment, classify, and order the social environment" (Tajfel & Turner, 1979, p. 40). People will accentuate the differences and similarities of characteristics related to the categorisation, and the accentuation is stronger when the categories are important, relevant, or highly valued.

Minimal group experiments were commonly used to demonstrate and develop the principles of SIT. Researchers designed minimal group experiments to remove pre-existing intergroup biases from the experimental situation, in order that any effects found could only be explained by the categorization of participants into groups (e.g., Tajfel, Billig, Bundy, & Flament, 1971). They performed these experiments by randomly allocating individuals to groups. The individuals were told that the groups were based on criteria such as which modern artists respondents liked best, or whether they under or over estimated the length of lines. The groups therefore had no history of contact or conflict and no face-to-face interaction between members, and no opportunity for future intergroup interaction. The popular way of measuring the differentiation between groups in the minimal group experiments was with the "Tajfel Matrices" (Bourhis, Sachdev, & Gagnon, 1992). These are a series of tables in which participants reward points (which represent money) either to two ingroup members, two outgroup members or to a member of each. The choices that the respondents make can be categorized into five allocation strategies. The first is 'fairness'; in which the groups are allocated points evenly. 'Maximum joint profit' is the option that will lead to the most

money for all. Thirdly 'maximum ingroup profit', is a strategy which focuses on getting the most points for the ingroup regardless of the points given to the outgroup. The 'maximum differentiation' strategy is one where the respondent will chose options that increase the difference between the ingroup and outgroup even at the expense of ingroup profit. Lastly, the strategy of favouritism is the combined use of maximum ingroup profit and maximum differentiation.

When SIT was first being formulated and tested it was necessary to use laboratory created groups (Tajfel et al., 1971; Turner, Sachdev, & Hogg, 1983) rather than real life groups. This was so that minimal groups could be used, to eliminate confounds such as an existing history, or other factors that could influence the perceptions of the groups. The initial use of minimal groups has led to a large proportion of the research conducted within the SIT paradigm being laboratory experiments. Skevington (1989) suggests that the focus on laboratory experiments has had the result of restricting the use of alternative methodologies from SIT research. Griffin (1989) criticizes the laboratory experiment approach as it has led to SIT research that is remote from any social context. For example Tajfel (1982) saw social identity to be variable across situations and affected by context, but most researchers treat it as stable. In addition Bourhis (1992) mentions that factors such as unequal status relations or power are often neglected in laboratory created groups. Not all experiments have included manipulations of status and many that do focus on only the low status group neglecting the potential SIT holds for examining the beliefs of high status groups.

As the theory has developed studies have expanded into using natural groups (not experimental) such as gender (Hogg & Turner, 1987), ethnicity (Finchilescu and de lay Rey, 1991), political affiliation (Kelly, 1988) and attitudes to the Gulf war (Heskin & Power, 1994). SIT has also been used to look at the relations between groups in the workplace (Haslam, 2000).

The move away from the laboratory paradigm and into field studies has created some problems in terms of the methodology used. While the original studies were concerned with manipulating and controlling conditions, the field research focuses on measuring and observing factors, which has lead to inconsistency in the measures used

by researchers. Finchilescu and de la Rey (1991) mention some of these difficulties when discussing the methods they used to study attitudes towards ethnic groups (whites and blacks) in South Africa. Finchilescu and de la Rey claimed that the measure they used to assess status, legitimacy and stability, had face validity but they could not measure criterion validity as there was no established measure of legitimacy and stability in the Tajfellian sense that they could compare their measure to.

Researchers have therefore used many different methods of measuring key aspects of SIT such as legitimacy and stability in field research, which makes it hard to compare results from different studies. The different methodologies used could be contributing to any discrepancies in the findings. Relatively few studies have used a combination of laboratory created and real life groups, which may be because this is a difficult situation to create and control. Jackson, Sullivan, Harnish and Hodge (1996) used both laboratory groups and a real life group (smokers and non-smokers) and Lalonde and Silverman (1994) used faculty membership as well as laboratory created groups. There are factors that can influence group relations that may not be present in artificial groups. Jackson et al. (1996) conducted a series of experiments using a minimal group, and two real life groups – cigarette smokers and men and women. They found differences between the real and laboratory groups and suggest "research is needed to determine when and why real-life groups differ from laboratory created groups" (p. 253).

The diversity of research into SIT has resulted in a very broad range of group attributes being studied, very little of this has studied the social change beliefs of real groups. SIT has evolved considerably over the years, as this study focussed on one of the original aspects, the initial statements of the theory have been used where possible to guide the current research.

## 3.2 SIT and Gender Relations

Tajfel and Turner (1979) conceptualised intergroup and interpersonal relations as existing at opposing ends of a continuum. In contrast Abrams (1989) describes how individuals can experience both interpersonal and intergroup aspects of relations at the same time. This is particularly true in gender relations where "one of the clearest criteria for distinctive group memberships (sex) can also be the basis of the most

intimate human relationships" (p. 64). Skevington and Baker (1989) suggest that intergroup and interpersonal gender relations should be seen as "existing simultaneously, dynamically interacting to transform each other" (p. 199).

Although SIT seems to be very suitable for considering gender relations from an intergroup perspective, surprisingly little research has done so. The initial work on this issue was by Williams and Giles (1978), who reviewed gender relations from a SIT perspective. Hogg and Abrams (1988) discuss gender relations as a concrete example when explaining SIT. These reviews look at gender relations in a theoretical manner rather than undertaking empirical studies of gender relations. Some empirical research has been conducted (Skevington and Baker, 1989) although these studies have set out to look at gender relations from an intergroup perspective, they have focused more on measuring women's gender identity, and whether SIT explains women's behaviour as well as it does men's (J. Williams, 1984).

Condor (1989) identifies some problems with the SIT research on women. She states that the original theory was dynamic and flexible but the reliance of researchers on traditional research methods has prevented researchers exploring the theory to its full potential. She points out three main areas where this has occurred. The first area she claims relies on the 'objective existence' of women as a group (e.g., Williams & Giles, 1978), referred to as 'gender dualism'. The research focuses on the membership of women in the gender group without considering differences among women or differences in how they perceive their identity as women. The research in this area has failed to really explore the meanings of gender categorizations, or whether they are affected by context or other factors. Social change is often assumed to be about the change in status between men and women, rather than alternatives, such as the removal from usage of the categories men and women (Condor, 1989; Hogg & Abrams, 1988).

The second area of research reviewed by Condor is studies from an individual differences perspective – which assume that constructs such as gender identification, salience and self-stereotyping are relatively stable (Abrams, Thomas and Hogg, 1990; Gurin & Townsend, 1986). Researchers in this area most frequently use measures based on standard attitude and personality scales, which leads to research that focuses on the quantity or strength of the construct, and neglects to explore alternative aspects of

gender relations, for example how identification is expressed, or research on the meaning and use of the gender categories.

The final area of research studies reviewed by Condor is research which begins to consider the subject's perceptions of category membership, such as the research on gender salience (Oakes, & Turner, 1986). These studies focus on people's use of gender categories as social perceptions or self-definitions. However this approach also focuses on the quantity of the constructs being measured. These three areas of research also pay little attention to the interactions or relations between men and women when they are acting as groups. In addition the majority of research focuses more heavily on women and their category membership to the exclusion of men and their category memberships.

Other criticisms have been made of SIT's approach to women. Some theorists suggest that there are differences in how men and women think about groups and that SIT does not consider this. J. Williams (1984) has suggested that SIT is a theory of intergroup relations between men. The initial minimal group experiments that showed categorization created differentiation between groups were conducted with all male respondents (e.g., Tajfel et al, 1971). J. Williams claims that the principles of comparison, distinctiveness and differentiation, which form the basis of SIT, are more characteristic of male group behaviour than female behaviour. She also mentions that the theory neglects other forms of intergroup interactions such as attachment and affiliation to others in the group and also to other groups. She suggests that these communal processes are more common among women than among men. J. Williams claims that the communal processes favoured by women contribute to their social position and help to maintain the unequal power relations between men and women.

Bourhis (1992) claims that J. Williams (1984) takes a dispositional approach to the different orientations of men and women regarding group behaviour. A dispositional approach implies that group behaviours are internalised aspects of men and women. Bourhis (1992) conducted an experiment to test whether women are disposed towards communal processes or whether it is being of low status that disposes groups to communal processes. He found that men also used communal processes when they

were in low status positions. Bourhis concludes that relative status positions cause more differences between males and females in groups than dispositional characteristics.

Overviews of gender relations in a broad sense have been written, but currently very little research has been conducted into relations between the genders from a SIT perspective. There has been little research on SIT and gender relations since Breinlinger and Kelly (1994).

## 3:3 Social Categorizations

Categorization is a basic cognitive process that individuals use to cope with the large amount of information that they encounter on a day-to-day basis. People categorize both social and non-social stimuli (Tajfel, 1974). Categorization is a "process of bringing together social objects or events in groups which are equivalent with regard to an individuals actions, intentions, attitudes, and systems of beliefs" (Tajfel, 1974, p. 69).

The minimal group experiments that Tajfel and his colleagues (Tajfel et al. 1971) initially worked on were designed to show that categorization alone was enough to create competition between groups. Later Billig and Tajfel (1973) questioned whether these groups were truly minimal. In the initial experiments, there were unintended aspects of similarity and dissimilarity between the groups that could contribute to competition between the groups. The researchers allocated respondents to groups on the basis that they were either under estimators, or over estimators on a perceptual task, or in the second experiment on their preference of modern painters. The researchers suspected that individuals could have used these criteria to create self-referent categorizations and to may have created perceived similarity between group members (Tajfel, Billig, Bundy and Flament, 1971). Tajfel and Billig (1973) conducted a minimal group experiment using random trivial categorizations; the participants were assigned to groups randomly by number. The random trivial categorization could not be used as a basis of subjective similarity. They concluded from the findings of discrimination measured on the Tajfel matrices, that it is solely categorization that causes the intergroup competition, not the similarity of group members. Tajfel and

Turner (1979) state that categorization does accentuate similarities within groups and differences between groups. This however only applies on dimensions salient in the specific context, relevant to the categorization and of importance and value to the group.

Abrams and Hogg (1990a) suggest that categorizations are flexible and that the one that best accounts for the similarities and differences between people will be used. Turner, Sachdev and Hogg (1983) state that people will define themselves according to the available social categorizations if that will help make sense of their current social context. Individuals' behaviours and reactions to others are affected by the categorizations they make, in their social environment (Abrams, 1990).

Individuals categorize themselves and others as part of groups. Categorization distinguishes between ingroups of which the individual is a member and outgroups. Including the self in an ingroup is called self-categorization; it underlies social identity, as social identity is the internalisation of the categorization (Skevington and Baker, 1989). Categorizations become self-referent, and lead to the learning of group norms, which are then applied to the individual's own behaviour. Behaviour becomes more normative as category membership becomes more salient (Hogg, 1992). In this way, social categorizations help create and define an individual's place in society.

Tajfel (1978) used a broad definition of what constitutes a group. He claimed that individuals are considered a group when they categorize themselves as such, and when they are consensually categorised as a group by others. Turner, Sachdev, and Hogg (1983) point out that identification with a group can occur as a result of other people defining the individual as part of that category. If there is an external consensus among others about the individual's category membership it can sometimes lead to "a subjective acceptance of the group membership despite the fact that at least initially there may be little interdependence and attraction between members" (p. 227). Identification may occur because categorization by others introduces recognition and acceptance of a common fate between the individual and other ingroup members. Being treated in a similar way to others may lead to this awareness.

## *Gender and Social Categorisations*

SIT states that individuals categorize themselves and others as parts of groups, which contributes to their social identities, and facilitates social comparisons. Social comparison in turn leads to an exaggeration of differences between groups and the similarities within groups. It is widely assumed that categorization by gender is common. J. Williams (1984) states, "it is uncontentious to state that sex is a basis for social differentiation and stratification" (p. 311). Del Boca and Ashmore (1986) raise the question of whether men and women are actually groups, claiming that they are fundamental social categories but that does not necessarily make them groups. If categorizations into male and female are as common as del Boca and Ashmore (1986) suggest, then men and women are functioning as groups. Although there are qualities of groups identified by del Boca and Ashmore (1986) that the genders do not share, for example some qualities that groups have are interdependence among group members, interaction, structure, and definition as a group by members and others. Men and women do not exhibit these qualities, not all men or all women are interdependent, not all men or all women define themselves as members of the group, and not all men are treated in the same way by others. There is also a great deal of interdependence between men and women.

Token situations may heighten the sense of sharing a common fate with others similarly treated. For example the research by Kanter (1977) on women in a male dominated occupation suggests that women in this type of setting do feel categorized by others and as if they are representing their category. Kanter called the process 'polarization' but what she describes is really the accentuation effect in SIT, the exaggeration of within group similarities and between group differences.

*Social Categorizations Summary*

To summarise, the concept of social categorization came from the studies that Tajfel and Wilkes (1963) performed in the area of information processing. They applied their findings to the social environment. When individuals make social categorizations of themselves and others, they emphasize the differences between groups and the similarities within groups. The experiments conducted showed that categorization into groups is enough to produce discrimination and ingroup favouritism. Individuals make self-categorizations, that is place themselves as a member of a category this is the basis of social identity.

The genders are widely used as a basis for categorisations, although the consensus of the meaning of the categorizations has been questioned. Working in a token situation may increase the awareness of category membership, as the groups tend to overemphasise similarities within groups and differences between groups.

## 3:4 Social Identity

The self-concept can be seen as a collection of self-images (Abrams & Hogg, 1990). It is made up of social identifications and personal identifications. Social identifications are those gained from categories or groups and personal identifications are individual descriptions (Hogg and Abrams, 1988). Hogg and Abrams (1988) suggest that individuals do not experience their total self-concept at any one time, but only experience a series of self-images that are dependent on the situation. Tajfel and Turner (1979) define social identity as consisting of "those aspects of an individual's self-image that derive from the social categories to which he perceives himself as belonging" (p. 40). SIT states that individuals strive for a positive social identity. They gain positive social identity through membership in positively valued groups. Membership in groups with little value may result in a negative social identity. A less valued group may be a group with little power, status, or access to resources. Positive

and negative evaluations are the result of social comparison processes between the ingroup and outgroups.

Tajfel (1974) saw the social identities of individuals as dynamic and that individuals hold more than one identity at a time; gender identity, for example, can be seen as just one of an individual's possible social identities. This introduces new questions about the relationships between different social identities that individuals can hold at the same time.

Tajfel and Turner (1979) believed that group membership becomes internalised as part of the individual's self-concept. Members of the outgroup who consistently define individuals as part of a group can contribute to this process of internalisation into the individual's self-concept. Taylor and Moggaddam (1994) suggest that it is possible for individuals who do not necessarily share any emotional ties or evaluation of a group to be influenced by the fact that they are identified as a part of a certain group.

Gurin and Townsend (1986) define social identity as a member's awareness of group membership and their feelings about their membership. They state that group identification had three aspects: the perception of intergroup similarities, the awareness of a common fate and the centrality of group identification in the self-concept of the individual. Turner, Sachdev, and Hogg (1983) define identification as the process by which a social categorization becomes part of the self-concept. Brown, Condor, Mathews, Wade and Williams (1986) identified three major aspects of group identification: awareness of membership in the group, evaluation of that membership and the affect or emotion associated with membership.

Social identity is therefore the part of the self-concept that is related to an individual's group or category membership. Social identity can be influenced by the categorizations and perceptions of others. Social identity is made up of awareness of group membership, the value attributed to that membership and the affect towards membership. According to SIT, social identity influences other processes, such as differentiation, self-esteem, identity salience, and the actions taken by the groups.

## *Identification, Differentiation and Self-Esteem*

SIT links identification with intergroup differentiation, predicting that how strongly an individual identifies with the group will affect how much they differentiate between their group and the outgroup. SIT postulated a complicated relationship between identification, differentiation, and self-esteem. The need for a positive self-concept is a fundamental assumption upon which Social Identity Theory rests. Tajfel and Turner (1979) state that "individuals strive to maintain or enhance their self-esteem, they strive for a positive self-concept" (p. 40). SIT states that individuals' group membership contributes to their self-esteem. Therefore, the strength of identification with the ingroup and the importance of the group membership in the self-concept will affect how much the group's status contributes to the group member's self-esteem (Locke, McClear & Knight, 1996). Identification with a positively valued group therefore increases self-esteem, while belonging to a negatively valued group lowers self-esteem. Abrams and Hogg (1990) state that if self-esteem is low the group member has various options depending on their level of identification. If the individual has low identification with the ingroup, they can leave the group, so long as the groups have open boundaries. If the individual identifies highly with the ingroup, they will seek ways to raise the value of their group, which can be through differentiation strategies such as ingroup bias.

The predicted relationship between self-esteem, differentiation and identification has received mixed support from research. Kelly (1988) carried out a study on members of political groups and found that the level of ingroup identification predicted intergroup differentiation. Other researchers have not shown such definite links. Skevington (1981) in her study of groups of nurses found that the high status group (registered nurses) showed the expected relationship between differentiation and identification but that the results from the low status group (enrolled nurses) were inconclusive. Brown and Williams (1984) conducted a study in a bread factory and found mixed results with some groups showing the expected relationship and others showing the reverse. Brown, Condor, Mathews, Wade and Williams (1986) found in their study set in a paper factory,

that the relationship between differentiation and identification was inconsistent with only two out of the five groups showing the expected correlation and those only weakly.

Oaker and Brown (1986) found the reverse of the expected relationship: they found that there were lower levels of differentiation between different groups of nurses when identification was higher. Hinkle, Taylor, Fox-Cardamone and Crook (1989) conducted a study into identification and differentiation using students in small decision making groups. They divided identification into different subscales (emotional factors, cognitive factors and individual needs versus the group factors) and found that the relationship between identification and differentiation differed among the identification subscales.

The relationships between identification and ingroup favouritism (or bias) and identification and differentiation have been criticised (Brown, 1995; Hinkle & Brown, 1990; Taylor & Moghaddam, 1994) because of mixed results in research studies trying to show the relationship between these aspects. Turner (1999) answers these criticisms by stating that often the researchers who criticize SIT have focused too narrowly on one or two aspects of the theory, and have not really taken into account the full picture that SIT provides. SIT never actually proposes a direct link (demonstrated statistically by a correlation) between identification and ingroup bias or between identification and differentiation. The total theory proposes mediating factors such as salience of identity, the structure of the intergroup relations, the relevance of the comparison dimension and the relevance of the outgroup. SIT also states that differentiation is only one option an individual can choose to achieve positive distinctiveness, depending on their beliefs an individual can also use social mobility and social creativity. Researchers have not paid as much attention to these group actions as they have to discrimination and bias.

The inconclusive results from past research suggest the relationship between differentiation and identification may be more complicated than SIT first assumed. It could be that factors such as the basis of the group influence the relationship. Groups that are ideological and have little actual personal contact between members such as those studied by Kelly (1988) may be quite different to natural groups that have a great deal of personal contact, such as those studied by Oaker and Brown (1986). Oaker and

Brown (1986) did find that the level of bias was affected by the amount of intergroup contact between the groups in their study, although this was only true for the low status group.

Methods of measuring differentiation are inconsistent across studies, which may cause some of the inconsistency of results. Hinkle et al. (1989) measured differentiation by requiring the participants to evaluate the ingroup and an imagined outgroup on instrumental and socio-emotional aspects of the group process. Hinkle et al. then used the difference between the ingroup and outgroup rating as a measure of differentiation. Other researchers have measured differentiation through interviews with the participants (Brown et al., 1986; Oaker & Brown, 1986).

## *Gender Identity*

There is still some debate about the use of certain terms that are necessary for the study of gender relations. Some researchers use the terms 'gender' and 'sex' interchangeably (e.g., Kanter, 1976). Nevertheless, some consensus is emerging: 'gender' is more widely used to indicate the socially constructed categorization and 'sex' is used to indicate the categorization that occurs due solely to biological structures or physiological differences (Nicholson, 1994). As sex and gender refer to different categorisations an individual can possess both a sex identity, which is based on the awareness of physiological or biological aspects of categorisation, and a gender identity that covers the social aspects of being a man or woman. The present research will only concern itself with gender identity. The term gender will be used to refer to the social categorizations and sex will be used to indicate biological or physiological categorizations.

According to SIT, a social identity is the part of an individual's self-concept derived from group membership (Tajfel & Turner, 1979). A fuller definition is given by Abrams (1989) who defines gender identity as "a basic phenomenological sense of one's maleness or femaleness - which cannot be measured against the yardsticks of social consensus (for example, global sex-stereotypes), biology (sex) or distributional

data (psychometrics). It is essentially a matter of social comparison in specific contexts" (p. 59). Other researchers have described gender identity as " a global sense or one's maleness or femaleness that is acquired early in life and is a group level defined concept" (Lorenzi-Cioldi & Doise, 1990, p. 77). Gender identity has also been described as " the part of the self-concept that derives from membership in a gender category" (Gurin & Markus, 1989, p. 153), or as " the sense in which people recognize their membership in one of the two gender groups" (Duveen & Lloyd, 1986, p. 222). Gurin and Townsend (1986) have studied the properties of gender identity and their relationship to gender consciousness. They define gender consciousness as a person's ideology about the position of his or her gender in society. They state that gender identity contains aspects of similarity, common fate, and centrality of the identity to the sense of self. Common fate influenced gender consciousness more than similarity and centrality. Spelman (1988) claims that gender identity is a relational concept: women discover the specific characteristics and attributes of their gender identity through comparison with men. This idea is demonstrated in a study by Thoreson, Shaughnessy, Cook, and Moore (1993) who studied perceptions of the male gender role, which may indicate some of the categorisations that contribute to men's gender identity. They found that conceptualisations of the male role consist of the idea that men should seek status, should be tough, and should not engage in traditionally feminine activities. Thoreson et al. elaborate this theme and name it the 'anti-femininity' theme which conceptualises the male gender role as based on the view that women are adversaries. Their research indicates that part of what makes the male gender role is not being woman. Within the SIT framework there has been very little work done on the gender identity of men. Work on the development of gender identity such as that conducted by Abrams (1989) has included the development of male gender identity but studies of adults have largely focused on women (e.g., Condor, 1986; Gurin and Towsend, 1986).

The diversity within the gender groups and gender identity's interaction with other identities makes it difficult to specify exactly what group members are identifying with, when they identify with a gender group. Hogg and Abrams (1988) suggest that gender identification may not constitute identification with all members of one's own

gender but may refer to a specific sub-group, of which the individual is a part. Lips and Colwill (1988) describe a study into gender identity that found homemaker and working women saw themselves as very different, but they both disassociated from groups of women who felt deprived and identified with privileged women. They also found that both sets of women were more likely to compare themselves to other women than to men.

Breakwell (1979) questions whether gender categorizations have the same meanings for everyone. It is assumed that the categorizations into male and female are generally shared and yet Breakwell emphasizes that there are no external criteria of womanhood. Researchers such as Young (1994) and Nicholson (1994) have stated that women cannot be treated as a unified group because there are too many different women with too many different identities to include them all in one grouping. SIT (Tajfel and Turner, 1979) does see identities as dynamic and interacting with each other, which is why salience is an important concept in SIT.

Smith (1988) criticised research that assumes that women can separate their gender identity from their racial identity. She states that the different identities interact and affect each other, for example identifying as a white women puts an individual in quite a different position in relation to other groups as identifying as a black women. She also points out that the dominant group often has the opportunity to assert their definition of the other group's identity, which occurs especially in relation to differences and similarities between groups. The example she gives is that white women can express solidarity with black women when it is to the white women's advantage. However white women can also emphasize the differences between white and non-white women when that suits white women's purposes.

Researchers have explored many different variables that affect the development of gender identity. These have included environmental gender typing (Katz, 1986), socialization and social constructs (Sherif, 1982), class, religion and race (Spelman, 1988), and intergroup relations (Abrams, 1989). Sex role orientation can be a cause and a consequence of gender identity as it conditions the meaning of being a woman (Condor, 1989).

SIT states that members of high status groups will have higher group identification than members of low status groups as identifying with a high status group makes a positive contribution to the individuals self-concept. Therefore the following hypothesis is formulated for the present study, *"Men will have higher gender identification than will women"* (H1). Researchers such as Williams and Giles (1978) have assumed that women who accept the status quo have internalised their inferiority and have low self-esteem or negative self-concepts. Breinlinger and Kelly (1994) state that this is the result of thinking of women with traditional beliefs at the opposite end of a bipolar scale to women with feminist or non-traditional beliefs, and assuming that the only way to a positive identity is through social competition. Condor (1986) found that the reactions of women who identify highly with women are affected by their sex-role orientation. Women who identify strongly and hold a radical sex-role orientation are likely to choose social competition strategies, and women who identify strongly and hold a traditional sex-role orientation are less likely to choose social competition strategies. Traditional women can identify strongly with women (Condor, 1986) and women who succeed in non-traditional jobs may actually, as a strategy to cope with their gender's status in their workplaces, dissociate from their gender   (J. Williams, 1984).

Other differences in gender identity between women with traditional beliefs and non-traditional beliefs have been researched. Gurin and Markus (1989) found that women with a non-traditional sex role orientation thought a lot about being a woman, which may be due to the increased salience of gender identity for those who have more competitive beliefs. Women with a traditional sex-role orientation did not think a lot about being a woman. In previous studies into gender discrimination women have reported how they have become involved with feminist issues as a result of experiencing gender discrimination (Gornick, 1983). These studies indicate that gender may become more salient and identification may increase for those people who experience gender discrimination. Therefore in the present study, *"Gender discrimination will be positively correlated with self-concept gender salience and gender identification"* (H2).

Some researchers have explored the relationship between gender identity and other social identities. Marshall and Wetherell (1989) suggest that the relationship

between women and their occupational identity has become "problematized" but the relationship between men and their occupational identity is "normalized". They conclude that men's occupational identity is more integrated with their gender identity, whereas women's occupational and gender identities are often separated and can be a source of tension. Marshall (1991) found that strong identification with women and a traditional sex role attitude correlated with a weak occupational identity.

Breakwell (1979) also enlarges the discussion of gender identity by introducing the issue of internal and external criteria for group membership. Internal criteria are the opinions held by the individual, external criteria are the standards and norms the group upholds. People have opinions about how well they represent the group, for example, they can see themselves as not meeting up to the external criteria of the group standards for membership. Not meeting up to group standards can make group members feel marginalized, which is particularly relevant for individuals working in gender dominated occupations, as carrying out occupational roles associated with the other gender may cause them to doubt their ability to fulfil the external criteria of group membership for their gender. The dominated group can influence tokens so that they doubt their ability to fulfil the external criteria of gender membership, which is a source of discrimination in male dominated occupations. For example McIlwee and Robinson (1992) found the association of engineering with the male gender role created conflict for the female engineering students in their study. They found that the women engineers perceived that the attention that was given to them because of their scarcity undermined their credibility as an engineer because the attention focussed on their being women. On the other hand acceptance by colleagues as engineering students undermined the female students credibility as women. For example jokes about the lack of physical attractiveness in female engineers, demonstrated that the image is of an engineer or an attractive woman but not both.

The research on stereotyping of occupations and self-image is particularly interesting when considered from a SIT perspective. Research by McClean and Kalin (1994) focused on the matching of a gendered self-image to an occupation. They found that both men and women in male dominated occupations have more masculine self-

concepts than those in female-dominated occupations. McClean and Kalin interpret these findings as suggesting that individuals choose an occupation that matches their self-concept. However SIT would argue that the occupation that individuals have chosen contributes to their self-concept in such a way as to cause the similarities, between self-concept and occupation.

## *Social Identity Summary and Research Themes*

The relationship between differentiation identification and self-esteem is problematic for SIT. The majority of the research does not support the predictions of the theory, although previous research has focused too narrowly on identification and differentiation. Research indicates that discrimination and sex-role orientation may affect gender identification. SIT states that identification will be higher in high status groups as group membership makes a more positive contribution to their self-concepts. Research into women in male dominated occupations suggests that women experience more conflict between their occupational and gender identity than men do. The relationship between occupational and gender identity has not been studied in men working in female dominated occupations. There is also a scarcity of research into male gender identification.

## 3.5 Salience of Identities

It is possible to have many different social category memberships or identities. Salience is the prominence of one category membership over other possible categories in the self-concept. Turner (1999) states that identity salience may be a mediating factor between identification and bias.

SIT also states that the salience of group membership affects other group processes. These include group identification, self-stereotyping (Abrams, Sparkes & Hogg, 1985; Hogg & Turner, 1987) speech styles (Hogg, 1985), and self-esteem (James

& Greenberg, 1989). Other researchers support a distinctiveness approach, which suggests that salience will be higher for numerical minorities.

## *Theories of Identity Salience*

Over the issue of category salience *Social Identity Theory* came into conflict with *Distinctiveness Theory* (McGuire & Padawer-Singer, 1976, Taylor, Fiske, Etcoff & Ruderman, 1978). Distinctiveness theory postulated that it is a basic perceptual tendency for novelty to be most salient, so numerically uncommon characteristics will be most salient. There were two groups of theorists in this area. Taylor and colleagues (e.g., Taylor, Fiske, Etcoff, & Ruderman, 1978, Taylor & Thompson, 1982) have studied distinctiveness in relation to the salience of characteristics of a target to a perceiver (Biernat & Vescio, 1994). In contrast McGuire and colleagues (e.g., McGuire and McGuire, 1981) have focused on the effect the distinctiveness of a characteristic has on its salience in the self-concept. Studies have provided support for distinctiveness theory using a variety of characteristics. Taylor et al. (1978) carried out a series of studies in which students watched slides and listened to recordings of groups interacting. The groups presented to the respondents were either mixed gender or mixed ethnicity. Salience was manipulated by the proportions of the gender or ethnic group members. They found that numerical distinctiveness (the fewer members of the group there were) led to higher ratings of prominence and assertiveness of the targets. Respondents also rated targets higher on stereotyped gender roles the more distinctive the target was.

The salience of group membership in the self-concept has been widely measured. McGuire and colleagues (e.g., McGuire & Padawer-Singer, 1976) developed the Spontaneous Self-Concept measure, which simply asks participants to (either orally or in writing) "tell us about yourself". The information provided is then scored to assess whether gender or other category memberships are mentioned and how soon it is mentioned in comparison to other characteristics. The Spontaneous Self-Concept measure has the advantage of being able to assess the relative salience of

different identities in the self-concept. The positive self-concept was also accompanied in later studies by the *negation self-concept*; which is the answer to the probe "tell us what you are not". They developed the negation self-concept because distinctiveness theory states that the most salient characteristics are the ones that are not shared by the majority. They assumed that in order to identify what characteristics are not common individuals must also be aware of what they are not.

The research on distinctiveness theory has also studied whether ethnicity in children's self-concepts was affected by the numbers of their own ethnic origin in their class (McGuire, McGuire, Child & Fujioka, 1978). Personal descriptive traits have also been studied, such as how salient hair and eye colour were in samples of school children (McGuire & Padawer-Singer, 1976). The results of these studies supported distinctiveness theory's assumption that the more distinctive the trait or the ethnic group the higher the salience in the self-concept. McGuire, McGuire, and Winton (1979) studied gender salience. Gender was found to be most salient for girls whose household (siblings and parents) was predominantly male and most salient for boys whose household was predominantly female. Distinctiveness theory was also supported by a study by Abrams, Sparkes and Hogg (1985), into the salience of gender in families. They also found that the gender salience increased as distinctiveness of the individual's gender within the family increased.

SIT (Tajfel and Turner, 1979) states that the presence of an outgroup member heightens intergroup difference and intragroup similarity, which leads to group membership being more salient for both the ingroup and the outgroup. So according to SIT it is the presence or absence of outgroup members not their relative numbers that makes category membership more or less salient. The presence of a solo member of one group will increase the group salience for both that solo member and the members of the majority group. SIT's position was supported by Oakes and Turner (1986), who found that novel category memberships were not automatically more salient than common categories, but that their salience depended more on the significance of the categorization for the task carried out by the perceiver. Abrams et al. (1990) found that category salience was influenced by the presence of the other group but was not affected

by the numerical proportions, as distinctiveness theory would predict. The predictions of SIT lead to hypotheses 3 and 4: *"Individuals who have a member of the opposite gender in their immediate workgroup will have a higher self-concept gender salience than those who do not work with a member of the opposite gender"* (H3). *" The number of same gender colleagues or the distinctiveness of category membership will not be related to gender salience"* (H4).

There has been a great deal of debate between the proponents of these two theories. Oakes and Turner (1986) criticize the distinctiveness hypothesis for focusing too exclusively on the numerical and cognitive aspects of salience and neglecting the social implications of group membership that may influence salience. For example, McGuire et al. (1976) studied salience of traits such as eye colour and height that are not normally used as a basis for categorizations of group membership.

Each theory of identity salience has research supporting its position. However much of the research on salience done within the SIT framework has focused on manipulating the salience of category membership for example by differing the numbers of each gender in a group, rather than measuring it in real life situations, and considering the conditions or contexts that make it increase or decrease (Oakes, 1987; see also McCann, Ostrom, Tyner, & Mitchell, 1985 and Oakes & Turner, 1986). Due to the focus on manipulating salience in experimental work, researchers have not studied salience in the self-concept of the low status group member. There are also methodological differences that decrease the comparability between studies.

## *Methodological Problems*

Research conducted into the salience of a target (McCann, Ostrom, Tyner and Mitchell, 1985; Oakes & Turner, 1986; Taylor, Fiske, Etcoff and Ruderman 1978) has involved manipulations of salience, of gender, race and other categories such as faculty membership and University attendance, in laboratory experiments. The gender salience of a target has most commonly been manipulated by changing the number of men and women in a group situation. Other researchers (Hogg & Turner, 1987) however have

manipulated the gender salience by creating a group debate, which introduces competition to the group situation. In the low salience condition (intrasex) two members of same sex argued with each other, whereas in the high salience condition (intersex) two members of one sex argued with two members of the other sex. These inconsistencies in the methods used to manipulate gender salience makes comparisons between studies more difficult.

The number of people used in each group to create a numerical minority has also varied. Some studies use five to one, (e.g., Oakes and Turner, 1986) others use one to two (e.g., Cota and Dion, 1986). Distinctiveness theory predicts that higher gender salience would be found in studies with a larger majority to minority ratio. Very few studies have measured the strength of the gender salience manipulation that has been performed. There are also problems with using purely numerical proportions to manipulate salience, as there is no way of telling how the social status of the participants is affecting the situation.

Another problem arises when research that has used real life situations is compared with laboratory based studies, where gender salience is manipulated. There has been very little research on whether identity salience is constant even for continuing real life contexts such as a classroom or home. Gender salience may fluctuate according to changes in the context. Other situational factors may increase the salience of a certain identity, for example the attitudes or gender of the teacher may influence gender salience in their pupils. Other intergroup processes may also affect salience for example Hoelter (1983) found that salience increased as the commitment to that identity increased.

## Gender Salience
### Aspects and Definitions of Gender Salience

As the self-concept is made up of many different identities, when gender identity is prominent over other identities it is called gender salience. It is necessary to clarify the different factors that are referred to as gender salience. Firstly, there is the salience

of the gender of a target person to an observer or onlooker. The second aspect is how salient gender is in the self-concept of a person. Thirdly gender salience can also refer to how likely a person is to use gender as a categorisation when making decisions or holding attitudes about others (Greenwood & Glidden-Tracey, 1996). This type of gender salience is based on Bem's (1981) gender schema work.

The two main theories of identity salience – SIT and 'Distinctiveness Theory' have also considered the salience of gender identities. The SIT position on gender salience is that the presence of groups increases the salience of gender in both groups. The SIT position has been supported by studies examining the gender salience of a target (Oakes and Turner, 1986) and gender salience in the self-concept (Abrams, Thomas and Hogg, 1990). Abrams, Thomas and Hogg (1990) carried out a study on female students who had previously been found to have traditional sex role ideologies. The researchers showed the students a sexist advertisement, which they viewed in groups of differing proportions of men and women. Their findings supported a SIT view of gender salience. Self-concept gender salience was higher in mixed groups than the all female groups, but the ratio of men to women did not affect salience. Traditional sex role attitudes were also higher for those with higher gender salience. SIT suggests that women will have higher gender salience than men as category membership will be more salient for the group of lower status, which leads to the following hypothesis, *"Women will have higher self-concept gender salience than men – regardless of occupation"*(H5).

Distinctiveness theory states that how scarce gender is in the environment increases gender salience. Distinctiveness theory's position has also been supported by research, for example Abrams, Sparkes and Hogg (1985) found that the self-concept gender salience of girls was most affected by the number of male siblings, and that self-concept gender salience of boys was most affected by their number of sisters. They found that females with larger numbers of brothers had lower academic aspirations, and that males with more sisters had less stereotyped perceptions of the academic abilities of the genders. McGuire, McGuire and Winton (1979) also studied gender salience in families. They found that boys had higher gender salience when females were in the

majority, and vice versa. Their findings supported distinctiveness theory, but they also discovered that the absence of a father increased boys' gender salience. Distinctiveness theory states that gender salience will be determined by numbers in the workplace which leads to the following hypothesis: *"The minority in the workplace (female engineers and male nurses) will have higher self-concept gender salience than the majority (male engineers and female nurses)"* (H6).

A problem arises in the debate between the two theories of identity salience when comparisons are made between the different aspects of gender salience. Most of the researchers involved in the debate between distinctiveness theory and SIT neglect to consider the fact that two separate aspects of gender salience are being considered. For example, Oakes and Turner (1986) claim that their study challenges the distinctiveness theory. In their study they presented respondents with tapes and slides of groups of different sex compositions interacting. Half of their respondents were told to assess the performance of an individual in the group and the other half were told to examine the whole group. For respondents focusing on the individual, salience was higher when there was a sole member of one sex. For the respondents focusing on the whole group salience was highest when there was an even sex distribution, which demonstrated that task focus was more important than distinctiveness in influencing the gender salience of a target. However, they do not consider that gender salience in the self-concept, which is what McGuire et al. (1979) have focused on may be influenced by different processes to those that influence the gender salience of a target.

Crocker and McGraw (1984) conducted a laboratory experiment and measured both self-concept gender salience, and gender salience of a target. They set up groups of six individuals in which the minority gender was the sole member of their gender. The majority members then rated the salience of the minority members' gender. They found that the gender salience of the female tokens was higher in the self-concept and as rated by the majority group than for the male tokens. SIT explains these results more easily than distinctiveness theory as aspects of intergroup status have influenced the effect of token status. Distinctiveness theory predicts no difference between male and female tokens. In contrast a study by Cota and Dion (1986) supported distinctiveness theory. They

studied gender salience in the self-concept using the spontaneous self-concept measure, in laboratory groups of differing sex compositions.

Hurtig and Pichevin (1990) conducted an experiment to assess the relationship between the context and the salience of gender to an observer. They state that in natural settings people are simultaneously perceivers of their self and others, as well as being a target for others perceptions. They also criticize research for ignoring the social meaning of the categories that can have an influence on salience. Similarly to Crocker and McGraw (1984) they found that gender salience was higher for women than for men, especially when the context was sex-typed.

The third factor referred to as gender salience has only been studied separately from the other two aspects; it is gender salience as a basis for the categorization of others. Glidden-Tracey and Wagner (1995) looked at the effect of gender salience as a basis for attitudes and decisions within counselling situations. To do this they developed a measure of gender salience. There were methodological problems with the first measure of gender salience, because the measure focused on real events in the respondent's life, it had low generalisability and low variability. The problems with the first measure led them to develop a second measure that focuses on gender salience in specific contexts such as friendships, domestic tasks, and work situations (Greenwood and Glidden-Tracey, 1996). Serbin and Sprafkin (1986) studied the third type of gender salience in children. They examined children's use of gender-based categorisations and their use of gender to make affiliation choices. They related these to the development of sex role awareness.

SIT appears to be the more useful theory to study gender salience. As it is a complete theory, SIT can be used to integrate the three different factors of gender salience. SIT suggests that an outgroup member's gender identity will be more salient to an observer from the ingroup, as the outgroup members presence increases differentiation between the groups. The presence of an outgroup member also increases gender salience in the self-concept of each group. When gender is salient in the self-concept both ingroup and outgroup members will act according to group norms, which could make them more likely to use gender to categorise others, the third factor of

gender salience. SIT predicts therefore that when gender is salient in the self-concept gender is more likely to be salient for categorising others, which leads to hypothesis 7: *"Self-concept gender salience will be correlated with gender salience in categorising others"* (H7).

SIT also suggests other aspects that may influence salience apart from numerical distinctiveness, such as intergroup threat or competition. SIT predicts that the presence of two groups in a workplace increases the salience of group membership for both groups, as found in a study by Abrams, Thomas and Hogg (1990).

## Gender Salience in Gender Dominated Occupations

Very little of the salience research has looked at gender salience in the workplace. The debate over the distinctiveness theory has led to the majority of the research focusing on numerical proportions and how numbers affect salience. However there may be other aspects of gender dominated occupations that influence gender salience. For example a policewoman may find being physically challenged raises her gender salience. Unfortunately, these have not been studied. Macke (1981) is one of the few researchers to look at what she calls gender salience in gender dominated occupations, using both men and women in her sample. She found that those working in the opposite gender dominated occupation did have heightened gender salience. However the method she used to measure salience is not the same as in other studies of gender salience. She measured salience by measuring how large a contribution sex-related characteristics make to self-esteem – which is not a direct measure of gender salience. She compared these with the impact job-related characteristics such as intelligence had on self-esteem. Macke found that job related characteristics played a larger part in the self-esteem of participants in same sex occupations than did gender related characteristics.

Kanter's (1977) tokenism research demonstrates the SIT point of view of gender salience. She describes how in the organization she studied, the presence of the token group (in her case women) served to increase the tokens' and the majority group's

awareness of their gender. One of the three tokenism processes identified by Kanter (1977) is visibility or the feeling tokens have that they stand out. Visibility seems to be an awareness of the salience of their gender to an observer. Kanter's work is one of the few studies of gender dominated occupations that mentions salience. Simeone (1987) claims that people have a heightened awareness of the sex of a token, but neglects to suggest what effect, if any, this would have on the self-concept of the token. Much of the work on tokenism processes mentions the heightened visibility of the token, and the attention that others in their workplaces give to their gender. SIT predicts that when others in the environment focus on one particular identity that will increase its salience relative to other possible identities. The following hypotheses are formed: *"For male nurses and female engineers there will be an inverse relationship between occupational and gender salience. For male engineers and female nurses there will be a positive relationship between occupational and gender salience"* (H8). *Male nurses and female engineers will have higher gender salience than occupational salience. Female nurses and male engineers will have higher occupational salience than gender salience"* (H9).

## *Salience of Identities Summary and Research Themes*

The methods used to study salience have been inconsistent. For example, salience of a target to an observer has mostly been studied in laboratory situations where salience has been manipulated. The laboratory studies have often been compared to studies that have measured identity salience in the self-concept of a minority group member. The studies are measuring different constructs that may act in different ways. Alternative factors that could be influencing identity salience such as discrimination have not been explored adequately.

SIT theory appears to have more support for its predictions about gender salience than distinctiveness theory, especially when studying salience in the self-concept. Kanter's research (1977) suggests that low status or token members of the workforce are more visible than are the high status members, because their category membership is emphasized. SIT predicts higher gender salience in the token group's self-concept than

for the high status group. Information about how gender salience in the self-concept relates to gender salience when categorising others has not previously been researched.

## 3.6 Psychological Distinctiveness

One of the major assumptions underlying SIT is that individuals strive to maintain or achieve a positive social identity (Tajfel & Turner, 1979). This is achieved through belonging to a group that is positively valued. The process of social comparison is how individuals assess the relative value of their own group membership compared with other groups. In order to achieve a positive identity, individuals must see the ingroup as positively differentiated or distinct from the outgroups with which it is compared. One way groups achieve positive distinctiveness is by accentuating the differences between groups on the characteristics that are favourable to their group (Brewer, 1991). This requires mutual comparison and differentiation on a value or characteristic shared by the groups (Tajfel & Turner, 1979). Once the group achieves distinctiveness, the group must maintain positive distinctiveness. One way in which a group can maintain positive distinctiveness is through the use of signs and symbols that advertise their distinctiveness to other groups (Tajfel, 1974).

Groups experience more pressure to be distinct as the similarity of groups increases. SIT claims that groups need to be different from each other to be positively valued. Status differences can reduce the comparability between groups, as they decrease the similarity. However, status differences do not reduce comparability if they are perceived as changeable (Taylor & Moghaddam, 1994). If an outgroup threatens the psychological distinctiveness of a group, the group will be met with hostility and the ingroup will attempt to maintain distinctiveness (Tajfel, 1974).

Jackson, Sullivan, Harnish and Hodge (1996) studied some of the ways in which groups favour the ingroup in situations of intergroup comparisons. In their experiment, they manipulated the positive or negative value of the groups by changing personality descriptions of the groups. They discovered that a negative characteristic was rated less undesirable when it distinguished the ingroup from the outgroup. The ingroup was also

rated higher on all other characteristics when the ingroup was negatively distinct. Jackson et al. described these as efforts to enhance the positive distinctiveness of the ingroup.

Brown (1995) states that the research into psychological distinctiveness indicates different motives for derogation of an outgroup and favouritism towards an ingroup, although SIT claims the motive for both outgroup derogation and ingroup bias is achieving positive distinctiveness. Support for Brown's claim is provided by Struch and Schwartz (1989) who found that ingroup favouritism was unrelated to aggression towards the outgroup. They found that the predictors of aggression such as conflict, and permeability of group boundaries were not good predictors of ingroup bias.

Hinkle and Brown (1990) point out that sometimes ingroup favouritism occurs on some dimensions of a measure and not on others and argue that SIT cannot adequately explain this. Turner (1999) questions the measures of ingroup bias that have been used. The researcher usually selects the dimensions of ingroup bias and does not test whether they are actually relevant to the respondents. SIT states that the relevance of dimensions of ingroup bias, and their centrality to the group influences how important they will be in determining group action.

Brown (1995) claims that the postulated relationship between the similarity of the groups and the amount of threat they produce is not supported by the SIT research. However Turner (1999) rightly argues that Brown is being too simplistic in his analysis of the relationship. Turner states that SIT never stated that that threat was only due to similarity. Similarity is only one dimension of social comparison. In addition the amount of threat a similar group causes will be mediated by the stability, legitimacy and the relative status of the groups.

## Gender and Psychological Distinctiveness

The process of social comparison is how individuals assess the relative value of their gender group membership compared with the outgroup. In order to achieve a positive identity from gender group membership the gender must be seen as positively

distinct from the outgroup. SIT expects that the more similar the gender groups see each other as being the more of a threat they will perceive each other to be. As individuals interact so often with members of the opposite gender, it seems that they would be a relevant outgroup for social comparisons. However there is little research that has looked into how gender groups choose the relevant groups for social comparisons.

SIT provides a good explanation for the findings of Wharton and Baron (1987, 1991), who found that the individuals in gender dominated occupations were least satisfied when the numbers of men and women approached even. SIT can explain this as a minority outgroup does not threaten the dominant group, and the dominant group may still control entry into the occupation. However, as the numbers of the minority group increase they may cause more of a threat to the positive distinctiveness of the dominant group, increasing dissatisfaction for the dominant group.

## *Psychological Distinctiveness Summary*

Individuals attempt to achieve and maintain a positive social identity, which occurs through membership in a group that is positively distinct from other comparable groups. The process through which the value of the ingroup relative to outgroups is assessed is social comparison. Similarity between groups causes threat to the psychological distinctiveness of the groups. For gender dominated occupations increasing numbers of the minority group may be perceived as more of a threat than a small minority group.

## 3.7 Social Comparison Processes

Tajfel (1974) saw social comparison as the link between social categorizations and social identity. Group membership therefore only takes on value and meaning when it is evaluated in relation to other groups. Tajfel wrote, "a group becomes a group in the sense of being perceived as having common characteristics or a common fate only

because other groups are present in the environment" (Tajfel 1974, p. 72). Tajfel (1975) also suggests that what a group is not can play an important part in defining a group's identity. For example "very often we are what we are because, 'they' are not what we are" (p. 108). There must be an element of consensus about these categorizations and value judgments in other words they must be shared socially. Tajfel stated that all information is socially defined.

SIT states that the ingroup does not compare itself to all available outgroups on all factors, but compares itself to relevant outgroups on mutually valued attributes and characteristics (Tajfel & Turner, 1979). Criteria that have significance for the group and that define and differentiate the groups will be used most often for comparison. Likewise, similarity, proximity, and situational salience of outgroups affects a group's choice of outgroups for comparison. Turner, Brown, and Tajfel (1979) state that the dimension, on which the groups are compared, must be important, relevant, or salient.

When the comparison results in a positive evaluation for the ingroup, this creates pressure on the ingroup to maintain its position. However if the comparison leads to a negative evaluation for the ingroup this results in low prestige for the ingroup (Tajfel & Turner, 1986).

Hinkle and Brown (1990) point out some problems with SIT's description of social comparisons. They suggest that it is impossible to know which social comparisons are important for groups' social identity because previous research has found more in-group favouritism on some comparisons than others, and favourable out-group comparisons can and do occur. They also question whether social comparisons happen as spontaneously as Tajfel (1974) claims. For example in a study of groups in a bread making factory Brown and Williams (1984) found that the respondents in their study showed little evidence of making spontaneous comparisons between the groups.

SIT focuses on comparisons between groups, but other researchers have claimed that individuals make more comparisons with other individuals within their group, than with other groups (Major, 1994). Major (1994) argues that this is especially common when individuals are assessing what they deserve, because of the greater availability and diagnosticity of the other ingroup members.

*Social Comparison Processes Summary*

In order to assess the ingroup's positive distinctiveness social comparisons with other relevant groups are made. The outcome of social comparison is information about the status of the groups and the intergroup situation.

## 3.8 Beliefs about the Intergroup Situation

The type of action a group takes to maintain or achieve positive distinctiveness will be influenced by the group's beliefs about the intergroup situation. Their belief about the status, permeability, stability, and legitimacy of the intergroup relations determines the actions the group will take.

*Status*

One of the outcomes of intergroup comparison is information about the relative status of the groups. Tajfel and Turner (1979) state that status "reflects a group's *relative* position on some evaluative dimension of comparison" (p. 43, emphasis added). Tajfel and Turner's definition implies that group status can only be determined by social comparison. The status of the group an individual belongs to determines whether that group will make a negative or positive contribution to the self-concept and the self-esteem of the group members.

There is some confusion about the use of the terms 'low status', 'disadvantaged', 'minority,' and 'subordinate'. These are generally used interchangeably as if their meanings are the same, which causes some confusion, as a low status group such as women can be the largest in number. Women, make up 51% of the population (Statistics NZ, 1999), but in many respects remain a disadvantaged group and are sometimes for this reason described as a minority group. A minority group may or may not be a disadvantaged group. Taylor and Moghaddam (1994) claim that some of these terms suggest that the group's position is attributable to their own characteristics. They

suggest that using advantaged and disadvantaged should be the preferred terms, as these do not logically imply internal or external causes for their positions. In the present research, high and low status will indicate the groups' perception of their relative advantages and disadvantages and majority and minority will describe numerical proportions.

SIT states that a group of high status should be positively distinct from the outgroup and this should provide group members with a positive identity. Ellemers, Doosje, Van Knippenberg, and Wilke (1992) found that participants in their research saw the high status group as more attractive than the low status group. Ellemers, van Knippenberg & Wilke (1990) also found that low status groups were more dissatisfied with their group membership than high status groups.

Ellemers et al. (1992) studied the difference between low status and minority groups. They found that minority status does not immediately reduce the positive distinctiveness of a group. However there is an interaction between status and numbers. The respondents rated a high status minority the most attractive group; Ellemers et al. termed this an elite group. They found that the members of high status groups were more proud of their group membership, had higher identification with the ingroup and were less attracted to the outgroup than low status group members. The high status minority members were more proud of their group membership and more inclined to work as a group. However, when the ingroup was a majority there was no difference between the low and high status responses, a low status majority group was no more attractive than a low status minority group. In addition to numbers status effects can also be affected by favourable treatment of the groups by a third party. Commins and Lockwood (1979) found that favourable treatment of a group reduced ingroup bias. Favourable treatment did not however change the perceived status of the groups.

A group member will make comparisons between the group that he or she belongs to and other relevant and similar groups. Comparisons lead to evaluative information about the group such as its relative status. Status is not merely determined by numbers but by other factors such as power and resources. Low status threatens the groups' positive distinctiveness and leads to action. High status makes a positive

contribution to group members identity, so members of high status groups identify more strongly with the ingroup than do members of low status groups. These assumptions from SIT lead to the following hypothesis for the current study: *"Respondents who see themselves of high status will have higher gender identification than respondents who see themselves of low status"*(H10).

## Gender and Status

The result of social comparison is information about the relative status of the gender groups. According to SIT, being a numerical minority or majority does not automatically determine status, but if a gender group perceives their position as low in status they will take action to achieve positive distinctiveness. SIT is particularly helpful when it comes to studying the differences between males and females in opposite gender occupations because the theory takes more into account than just numerical minority and majority when assessing status.

Despite women making up 51% of the population, they are often considered by researchers as having lower status than men have (e.g., Swan & Wyer, 1997). They are assumed to be of low status due to the history of oppression by men, their lack of economic power and their under-representation at decision making levels. Research findings suggest that some women, especially younger women, now consider that women have achieved equality with men in society (Cockburn, 1991, Condor, 1989). Women in male dominated occupations are assumed to be of lower status than men, due to the history of absence from the professions and to the fact that men remain in the decision-making positions of these professions. Men entering female dominated occupations are in a different position. Fairhurst and Snavely (1983b) explain the position of men as a change in the status configuration and state that "the numerically derived organizational environment would favour females, and the sex based hierarchy of the larger society would continue to favour males " (p. 354). Fairhurst and Snavely state that societal status will affect males' perceptions of their status in female dominated occupations. Males' position in female dominated occupations is also

enhanced by the fact that men are often in decision making or supervisory positions in these occupations, men are more likely to have a same gender boss than women in male dominated occupations (C. Williams, 1992). The following specific hypotheses are derived from the research outlined above: *"The majority of female engineers will see themselves as low status, and the majority of male engineers will see themselves as high status"* (H11). If numbers of each gender determine status within an occupation then *"The majority of male nurses will see themselves as low status, and the majority of female nurses will see themselves as high status"* (H12). On the other hand, if societal status plays a part in the status of a gender group within an occupation *"The majority of female nurses will see themselves as low status and the majority of male nurses will see themselves of high status"* (H13).

## *Permeability*

Permeability is a concept used in SIT to describe the boundaries between groups. If the groups have permeable boundaries members can freely join a different group, if the boundaries are impermeable group membership cannot be changed. If group members see the intergroup situation as permeable, they will adopt individual strategies for improvement (Lalonde & Silverman, 1994). On the other hand, if members of a low status group perceive the group boundaries to be impermeable then they will adopt a strategy that involves change for the whole group. Permeable boundaries can help legitimise the dominant group's position, as permeable boundaries demonstrate that entry to the dominant group can be achieved through effort or ability, which discourages group action (Lalonde & Silverman, 1994). As members of the gender groups do not commonly become members of the other group acceptance will be measured in the current study rather than true permeability, therefore permeability will be referred to as acceptance. The high status group is expected to protect its position therefore in the present study: *"High status respondents will express lower acceptance of the outgroup than the low status respondents, and the low status respondents will perceive lower acceptance of the ingroup than will the high status respondents"* (H14).

SIT predicts that the permeability of group boundaries will affect identification with the ingroup, if the boundaries are permeable group members' identification will be lower (Tajfel & Turner, 1979). Research by Ellemers et al. (1990) supported this prediction. Members of groups with permeable boundaries identified less with the low status ingroup and more with the high status outgroup, especially group members with high ability. Ellemers et al. (1992) found that when the intergroup situation was permeable the high status minorities showed relatively high levels of identification with the ingroup. When the conditions were permeable ingroup identification was stronger in minority groups than majority groups, and when the boundaries were impermeable there was no difference in identification. Their research leads to the following specific hypothesis: *"Gender identification will be negatively correlated with perceived acceptance of the ingroup"* (H15).

SIT also predicts that the permeability of group boundaries will affect which strategy is chosen for achieving or maintaining group distinctiveness. Research into the effects of permeability of group boundaries on the choice of strategies to deal with being a group of low status (Ellemers, van Knippenberg, & Wilke, 1990; Jackson, Sullivan, Harnish, & Hodge, 1996; Lalonde & Silverman, 1994) has tended to involve manipulating the permeability of group boundaries. These studies have usually taken place in laboratory groups.

Struch and Schwartz (1989) attempted to measure the perceived permeability of two natural ethnic groups. They used three items to measure permeability. The first item dealt with distinguishing members of the two groups from each other. The next two items asked respondents how easy it was to move from one group to the other. They found that perceived conflict decreased the permeability of group boundaries and increased aggression towards the outgroup.

Jackson et al. (1996) manipulated permeability of group boundaries in real life groups by presenting information to the respondents about the ease of stopping smoking. They found that the positively distinctive group members - non-smokers, saw themselves as more similar to ingroup members and rated themselves more desirable on

all dimensions, but these ratings were unaffected by the permeability of group boundaries.

*Gender and Permeability*

SIT theorists seem to have conflicting views over the permeability of the gender groups; theorists like Brown (1995) claim that groups based on gender and ethnicity are impermeable. Hogg and Abrams (1988) state that passing from a gender group is very difficult as the membership is externally or physically designated. However Hogg and Abrams (1988) also suggest that social mobility beliefs are "highly characteristic of women seeking traditionally male-occupied positions in organisations" (p. 56). Women in these situations may see the boundaries as permeable, or may not realize that they are impermeable. Vaughan and Hogg (1995) suggest that individual's perceptions of the permeability of group boundaries may not necessarily reflect reality. Women who have been successful in male dominated occupations often try to fit in by de-emphasizing their gender and taking on the characteristics of the dominant group. Baker-Miller (1976) found that "some women still try to imitate the dominant group by gaining status and power at the expense of subordinates, often now other women" (p. 135). Taking on the characteristics of the dominant group results in behaviour such as taking part in jokes at the expense of their own group, and may explain why some women who are successful in male dominated occupations do not support other women coming into the organisation, because they are not identifying with women but with the dominant group. SIT would classify these beliefs as social mobility, which is associated with low ingroup identification.

It may be that although the boundaries between groups are not permeable in that members of one gender group commonly become members of the other, that it is possible for one group to accept the members of the other group to the extent that the categorization into groups is no longer salient. Acceptance is similar to the concept that Tajfel (1975) termed assimilation, which is when a whole group is accepted into the outgroup. As members of the gender groups do not commonly become members of the

other group acceptance will be measured in the current study rather than true permeability, therefore permeability will be referred to as acceptance in this study.

From the research on gender dominated occupations that has found that women are more accepting of men in female dominated occupations (Fairhurst & Snavely, 1983; Kanter, 1977) the following hypothesis is derived: *"Women will be more accepting of men in female dominated occupations, than men will be of women in male dominated occupations"* (H16).

## *Stability*

The stability of the groups' positions, affects the choice of strategy to maintain or achieve positive distinctiveness. Stability is the perception of whether the groups' situation will change in the future. SIT predicts that if the low status group can perceive alternatives to the present situation they are likely to choose strategies to change their group's position (Tajfel & Turner, 1979). 'Stable' and 'unstable' are terms now used to refer to the group positions but originally Tajfel (1974) termed these 'secure' and 'insecure'. When the low status group perceives the situation to be stable, they are likely to choose strategies that change the status of the group without confronting the outgroup (Tajfel & Turner 1979).

Ellemers et al. (1990) found that an unstable group situation resulted in increased ingroup identification for the members of the low status group, but not for the high status group, which reflected the group's concern for improvement of group status as a whole. Ellemers et al. also found that members of a low status group under stable conditions favoured an alternative status criterion for evaluation, which is evidence of a social creativity strategy.

Taylor and Moghaddam (1994) state that although SIT assumes that perceived instability would lead to greater intergroup discrimination, research findings do not support this. Taylor and Moghaddam oversimplified the SIT prediction. SIT does not predict a simple relationship between stability and discrimination. Finchilescu and de la Rey (1991) suggest that the effects of the legitimacy of status relations take precedence

over the influence of stability. Tajfel (1975) originally believed that legitimacy and stability would affect each other, which implies an interaction between legitimacy and stability. He stated that there would be greater discrimination from an illegitimately high status group when the status relations were unstable than stable.

Research on the stability of intergroup relations has focused on manipulating the status and stability of groups in laboratory settings. Finchilescu and de la Rey (1991) used natural groups in their research and measured status and stability on an intergroup perception ladder, which requires respondents to rank the different groups on 11 rungs. Their findings did not support their hypotheses that the low status group would show the least ingroup favouritism under the stable-legitimate condition, and the high status group would show the most discrimination under unstable-legitimate conditions. They attempted to explain the failure of the results to support their hypotheses, by questioning the accuracy of their measure of stability. Finchilescu and de la Rey (1991) suggest that the notion of stability should be continuous rather than a dichotomous variable as conceptualised in SIT. They claim that groups have varying positions of stability in relation to each other and that the relations between stability and legitimacy are not clear. Although Turner (1999) has since claimed that that stability and legitimacy will interact in their effect on bias and differentiation. Finchilescu and de la Rey also claim that "there may also be qualitative differences in the perceptions of stability and legitimacy when they reflect continuous life experiences, in contrast to a state induced for an experimental session" (p. 230). No research has explored the qualitative difference in these factors between real and created groups.

Taylor and Moghaddam (1994) state that research findings do not always show that instability leads to discrimination. However researchers often fail to take into account mediating factors; such as identification and that SIT originally viewed an interaction between legitimacy and stability (Tajfel, 1975). The research findings could also be due to some of the methodological limitations in the measurement of stability. In addition discrimination is not the only option for the group to achieve positive distinctiveness, a group can also use social creativity or group members can achieve positive distinctiveness through social mobility strategies.

The different beliefs about the intergroup situation affect each other. Ellemers, van Knippenberg and Wilke (1990) found that respondents perceived the group's position as fairer when they perceived the intergroup situation as unchanging (stable) and the group boundaries as permeable. For this reason it is expected in the current study that *"Stability beliefs will not be independent of legitimacy beliefs"* (H17).

## Gender and Stability

Many change to the relations between the gender groups have occurred in the last century, such as the increasing numbers of women in paid employment. These changes indicate that the intergroup situation between men and women may be unstable. The SIT definition (Tajfel & Turner, 1979) of stability is that alternatives to the current situation are imaginable. There is no research into the perceptions of men and women of the stability of gender relations. The history of change however does suggest that changes will easier to imagine.

## Legitimacy

The legitimacy of the group's positions are how fair or justified they are perceived to be. If the status relations are illegitimate, the groups are more likely to take action to improve or maintain the group's positive distinctiveness, than if they are legitimate. Tajfel (1975) predicts that beliefs about legitimacy affect the actions of the high status group as well as the low status group. If the high status group believes that they are legitimately of high status, they will be discriminatory towards the low status group.

Tajfel (1975) described three types of legitimacy: legitimacy as perceived by the ingroup, legitimacy as perceived by the outgroup and lastly legitimacy as measured against some objective standard, for example by rules and regulations. Tajfel (1975) stated that action to achieve positive distinctiveness for the ingroup was more likely the

larger the discrepancy between the first two types of legitimacy. To date, no published research has tested this part of the theory. Tajfel (1981) also expected an interaction between stability and legitimacy. He stated that unstable situations are more likely to be perceived as illegitimate, and if a situation is perceived as illegitimate, it can lead to perceptions of instability.

Finchilescu and de la Rey (1991) measured the legitimacy of the group relations in real life groups by measuring where respondents thought two ethnic groups should ideally stand on an intergroup perception ladder. Respondents who placed whites higher than blacks saw the relations as legitimate, respondents who placed blacks on the same or at a higher level than whites saw it as illegitimate. Finchilescu and de la Rey found that the effect of legitimacy was enhanced if the intergroup situation was also perceived as unstable. They found that members of the advantaged group (whites), who viewed the status relations as illegitimate gave less discriminatory responses than those who perceived them to be legitimate.

Ellemers, Wilke and van Knippenberg (1993) found that low status group members accepted their position more when the situation was legitimate. They manipulated legitimacy in their experiment by assigning low status to the groups on the basis of poor performance (legitimate), or number of items completed (illegitimate). They also found that ingroup identification increased when the group members were illegitimately of low status. Legitimacy also affects group members' social change beliefs. In Ellemers et al.'s (1993) study permeability and stability were the strongest predictors of participants' social change beliefs. Legitimacy however had more influence than permeability and stability on the respondents' evaluation of the group situation and identification with the group.

Moghaddam and Perreault (1992) carried out a study on ethnic groups and found increased individual action was associated with higher beliefs in the legitimacy of the situation. Turner and Brown (1978) found legitimacy also affected other group processes such as ingroup bias and satisfaction. They found that members of a group with legitimately low status were more satisfied with their position. They also found as

predicted by SIT that identification with the group increased if the group was illegitimately of low status.

Skevington (1981) measured legitimacy by providing respondents with information about the working conditions of two groups of nurses (this covered aspects such as pay and holidays) they then rated their agreement with seven statements relating to the information. In contrast to predictions from SIT, she found no difference in perceptions of legitimacy between the high and low status group. In the current study, it is expected that *"More high status respondents will perceive the situation to be stable and legitimate than low status respondents"* (H18)

### Gender and Legitimacy

The perceptions of legitimacy of the intergroup relations between the genders play a big role in determining the action if any that will be taken by the groups. However there is very little research on individuals' perceptions of the legitimacy of the intergroup relations between genders. There has been very little research into the beliefs about intergroup situation among men and women.

## Beliefs about the Intergroup Situation
## Summary and Research Themes

Low status threatens the groups' positive distinctiveness and leads to action. Being of high status makes a positive contribution to group members identity, so members of high status groups identify more strongly with the ingroup than members of low status groups. The status of men in society is assumed to be high because of their advantaged access to resources and power, women are assumed to have low status. Societal status will affect the experiences of minorities in gender dominated occupations.

Permeability is the perception that intergroup boundaries can be crossed. Permeability affects the level of identification with the ingroup and the choice of action

the groups will take to maintain or achieve positive distinctiveness. Permeability of the gender groups is not possible in the sense that becoming a member of the other group is common but assimilation may be possible, so a measure of acceptance was used in the present study.

The stability of the intergroup situation is the perception that changes in the intergroup situation are possible. Stability affects the choice of strategy to maintain or achieve positive distinctiveness. Social change beliefs will also be influenced by the legitimacy of the group's position. There is very little research on the stability or legitimacy of the intergroup situation between genders. SIT predicts an interaction between legitimacy and stability. High status group members are more likely to see the situation as legitimate as that is less threatening to the positive distinctiveness of their group. Research carried out mainly on laboratory groups has upheld some of SIT theories predictions about these factors. Permeability, stability, and legitimacy all affect social change beliefs. It is unclear which of these factors is most important in determining beliefs.

## 3.9 Social Change Belief Systems
## –Achieving Positive Distinctiveness

SIT proposes that membership in a low status group results in low self-esteem and a negative self-concept for members because of the loss of positive distinctiveness. The theory predicts that members will try to gain a positive self-concept. The type of action the group takes will be determined by the group's social change belief systems. The belief systems are social mobility, social creativity, and social competition. The belief system that the low status group members will choose depends on their beliefs about the intergroup situation and is mediated by the level of ingroup identification (Turner, 1999). Taylor and Moghaddam (1994) also claim that SIT neglects the possibility for simultaneous use of more that one strategy to achieve or maintain positive distinctiveness, as Tajfel and Turner present the options as a choice between strategies.

## *Gender and Social Change Belief Systems*

Williams and Giles (1978) used SIT to consider the way women have as a total group made efforts to change their situation, focusing on the feminist movement and the changes it has initiated. Breinlinger and Kelly (1994) suggest that because SIT is one of the few theories that makes predictions about individual responses to belonging to a low status group it provides a useful framework for considering women's reactions to being a disadvantaged group. They used a Q-sort methodology to categorize women's responses to 'status inequality' into the social change beliefs systems from SIT. These included individual mobility, social creativity (including new dimension, changing the values, changing the outgroup) and social competition. They found that women's responses are more complex than SIT allows. They found a fourth belief that was a combination of an awareness of discrimination for some women, and an acknowledgement that some women succeed through individual strategies of hard work and taking opportunities. As there is so little research in this area it is difficult to conclude whether this demonstrates that SIT is too simplistic in its perception of social change beliefs or whether it may be due to the more qualitative methodology used in this study. Marshall (1991) also looked at the relationship between identification and social change beliefs in a sample of women lawyers. The women in her sample who identified strongly with women fell into two categories, one group had a feminist perspective, which she categorised as social competition beliefs. The other group with strong gender identity had traditional values that had a negative impact on the opinions of women's success as lawyers. There were also three groups of women who disassociated from their gender group and focussed on occupational position, which Marshall termed a social mobility perspective according to SIT.

## *Social Mobility*

The social mobility belief system involves the group members of a low status group believing that efforts to improve their status individually by leaving their original group and joining the advantaged group are possible. Social mobility does not improve the status of the original group. Assimilation of a whole group into the outgroup is also possible. According to SIT the use of this social change belief system is dependent on the individual perceiving the group boundaries to be permeable. An individual may also disassociate themselves from a group psychologically if physical boundaries make social mobility impossible. In the current study it is expected that for the low status and equal status respondents "*Acceptance of the ingroup will be positively related to ingroup social mobility beliefs*" (H19).

Social mobility usually involves high status members of the low status group who will increasingly identify with the advantaged group and disidentify with the original group, which weakens group bonds and decreases the likelihood of groups taking action as a group (Tajfel & Turner, 1986). SIT predicts that identification with the group will be low for those with social mobility beliefs, the following hypothesis is formed for the high and low status groups: "*Identification will be negatively related to social mobility beliefs*" (H20).

Lalonde and Silverman (1994) studied the effects of permeability on respondents' actions to improve the group or individual status. They manipulated the permeability of groups in a laboratory setting, so that there were three levels of permeability. These were open, closed and token in which the experimenter informed the low status group, unsophisticated decision makers, that the high status group, sophisticated decision makers, would accept 2% of unsophisticated members for entry. Their results supported the prediction from SIT that individual strategies such as social mobility were preferred when the boundaries were permeable. In addition they found that under the token condition the low status group members were less inclined to take collective or individual action to gain membership in the high status group, but showed

high levels of acceptance of the situation. These findings have quite important implications for situations in which there are token group members as they demonstrate that acceptance of tokens into the high status group reduces the likelihood of action against the dominant group.

Moghaddam and Perreault (1992) considered the choice between individual and collective mobility strategies among immigrants to Canada. They measured strategy use by presenting respondents with two statements that represented a collective orientation and two that represented an individual orientation. Their research supported the SIT prediction that individual action (a social mobility belief system) was related to belief in the legitimacy of the status relations. The SIT prediction leads to the following hypothesis: "*Respondents of low status who see the situation as legitimate will have higher social mobility beliefs than those of low status who see the situation as illegitimate*" (H21). *Respondents of low status who see the intergroup situation as stable, will have higher social mobility beliefs than those of low status who see the situation as unstable* " (H22).

Jackson et al. (1996) found in their minimal group experiment that permeability did not influence the choice of social mobility belief systems. They inferred social mobility beliefs from individuals' level of perceived similarity to the ingroup. Jackson et al. also studied natural groups - smokers and non-smokers. They found that individuals in the negatively distinct group saw themselves as more similar to the ingroup when the situation was permeable. Their findings are contrary to the SIT prediction that identification with the outgroup will increase and identification with the ingroup will decrease for those with social mobility beliefs in permeable situations. They explain their findings by suggesting that temporary group membership could be less threatening to positive distinctiveness than when group membership is permanent under impermeable conditions.

## Gender and Social Mobility

Evidence of social mobility beliefs are found in much of the literature on tokenism; especially in descriptions of women who are successful through their own

merit and do not support others. Women with this social change belief try to succeed in male environments and do not perceive this in gender competitive terms. Women who use social mobility as a strategy tend to explain differences between the sexes as a matter of preference and regard the boundaries between sexes as symbolic. These characteristics allow the dominant group to explain their position as due to their personal characteristics (Hogg and Abrams, 1988).

Breinlinger and Kelly (1994) found clear support for social mobility beliefs in their study on status inequalities among women. These beliefs were characterized by belief in individuals' abilities and the perception that inequalities between the genders did not exist. Social mobility beliefs were also associated with a belief that the intergroup situation was legitimate and an opposition to group action.

As individuals with this belief system focus more on individual characteristics and the boundaries between groups are less important, they should also have lower gender salience, and perceive less gender discrimination than individuals who choose other strategies.

## Social Creativity

If the disadvantaged group perceives the status relations as stable and or legitimate and impermeable then the preferred social change belief system is that of social creativity. The predictions of SIT lead to the following hypotheses for the low status and equal groups *"Acceptance will be negatively related to ingroup social creativity beliefs"* (H23). *"Respondents who see the intergroup situation as stable will have higher social creativity beliefs than respondents who see the intergroup situation as unstable"* (H24). Social creativity encompasses three different types of response:

*Redefining the Value of Characteristics*

Redefining the value of characteristics involves group members revaluing characteristics that were previously given a negative value in a positive way. Effort is required to make the outgroup accept the new value of the characteristic. Redefining the value of a characteristic is most successful when it is central or criterial to the low status group (Hogg & Abrams, 1988). There are two stages necessary for the revaluing an existing characteristic: agreement among the ingroup and acceptance by the outgroup of the new value (Tajfel, 1981). Jackson et al. (1996) conducted a minimal group experiment, in which the respondents were categorised into groups on the basis of whether they were dot underestimators or overestimators. They measured three things: similarity to the ingroup, the desirability of the groups distinguishing characteristics and ratings of the ingroup compared to the outgroup on those characteristics. They found that when the situation was impermeable the respondents tended to change the value of the dimension that caused their negative distinctiveness, and rated the ingroup more favourably on all other dimensions, which are examples of social creativity strategies.

*Using a New Dimension for Comparison*

A new dimension of comparison on which the low status group is better can be used as the basis for comparison. The classic experiment demonstrating this aspect of social creativity, was conducted by Lemaine (1974). He found that a group of children given resources of a lesser quality than another group with which to build a hut emphasized the fact that they had built a garden around their hut, to the other group and to people judging the huts. Mummendey and Simon (1989) found that although groups still tended towards ingroup favouritism on dimensions equally important to the in and outgroup, their laboratory groups tended to show outgroup favouritism when the dimensions were unimportant to the ingroup but important to the outgroup.

*Changing the Outgroup*

A group can find new relevant comparison groups with which to compare itself. If the group can find other groups with even lower status with which to compare itself, it appears more favourable. Hogg and Abrams (1988) state that the comparison must be to relevant outgroups, usually one that is similar in outlook and that holds a similar status to the ingroup. Individuals may also compare themselves with less advantaged members of the ingroup.

*Gender and Social Creativity*

Groups will often choose social creativity beliefs when the intergroup situation is stable. It consists of redefining the value of characteristics, using a new dimension of comparison and changing the outgroup. One example of social creativity is the exaggeration of existing differences between gender groups on dimensions valued by women. Breinlinger and Kelly (1994) found examples of social creativity strategies among the women in their sample. They found that social creativity was characterised by women's traditional contributions to society being highly valued. Although there was awareness among the women with these beliefs that other women face discrimination.

## Social Competition

When the status positions of the groups are unstable and/or illegitimate and the boundaries are impermeable, the most likely social change belief system for the low status group is social competition. Social competition is a collective group effort to improve the status of the ingroup, which usually involves direct conflict with the dominant group. Action based on this belief system results in the most change occurring in the status of the disadvantaged group. SIT predicts that group members who see the group situation as stable will be less likely to choose social competition as a strategy for change, as they perceive no alternatives to the current situation. The

following hypotheses for the low and equal status respondents are drawn from the SIT predictions: *"Acceptance will be negatively related to social competition beliefs"* (H25). *"Respondents who see the intergroup situation as illegitimate will have higher social competition beliefs than will respondents who see the situation as legitimate. "* (H26), and *Respondents who see the intergroup situation as unstable will have higher social competition beliefs than will respondents who see the situation as stable"* (H27).

Ellemers et al. (1993) measured use of individual or collective strategies by whether participants choose to keep their individually earned points or donate them to the group. They found that collective group action was favoured under unstable intergroup conditions. Ellemers et al. (1990) asked respondents whether they intended to try to achieve a higher status position for the in-group and if they wanted to compare their answers with those given by the high status group. They found that under unstable conditions collective action was the most popular social change strategy, and the low status group members identified strongly with the ingroup in this situation. SIT predicts that social competition is characterised by identification with the group *"Identification will be positively related to social competition"* (H28).

## *Gender and Social Competition*

Social competition beliefs result in direct conflict between the gender groups. Individuals with these beliefs see the intergroup situation as unstable – they can imagine alternatives to the present situation. Breinlinger and Kelly (1994) found that social competition beliefs among the women in their sample were characterized by anger at inequalities between the genders, a perception that the situation was illegitimate, and disagreement with social mobility strategies. They also found some resistance to social competition beliefs with some respondents believing that radical social competition beliefs were inappropriate in the current "post-feminist" times.

Women who choose social competition strategies are more likely to be seen as a threat by men, which means that they are more likely to experience discrimination against them as men try to maintain their positive distinctiveness.

Gender is likely to be more salient for those members of the low status and high status group who choose social competition. Hogg and Abrams (1988) say that women who choose social competition (and perceive the intergroup situation to be illegitimate) would find their gender more salient because they engage more often in "positive differentiation" with the other group. Discrimination and gender salience will be associated with social competition beliefs as they are more threatening to the outgroup's position than social mobility or social creativity strategies.

## *Social Change Belief Systems –*
## *Achieving Positive Distinctiveness Summary and Research Themes*

The perceived legitimacy and stability of the intergroup relations and the permeability of the groups boundaries will influence which of three belief systems low status groups choose to try and achieve positive distinctiveness. The level of identification with the ingroup will also affect this decision. The belief systems identified by SIT are social mobility that focuses on individual action, social creativity that changes the comparisons between groups, and social competition which is direct competition with the high status group. Social change belief systems have largely been ignored in research. The actions of the low status group will in turn produce reactions from the high status group. Little research has been conducted on the belief systems of the gender groups, and the variables that affect the choice of beliefs systems in gender groups need more careful study.

## 3.10 Social Change Belief Systems
## – Maintaining Positive Distinctiveness

According to SIT, when the high status group perceives the group's position as stable and unchanging, their social identity will be secure. If a low status group attempts to achieve positive distinctiveness, the positive distinctiveness of the high status group can be threatened. SIT states that the high status group will then make

attempts to maintain its positive distinctiveness (Tajfel & Turner, 1979). The high status group can also choose between the belief systems of social mobility, social creativity and social competition. Perceptions of the intergroup situation, permeability, stability, and legitimacy will determine this choice (Tajfel, 1975). The type of threat that the low status groups are causing to the high status group's distinctiveness, will also affect the actions of the high status group (Hogg & Abrams, 1988). SIT researchers have neglected the reactions and beliefs of the high status groups, in both laboratory and field based studies.

## Social Mobility

The use of this belief system is dependent on the individual perceiving the group boundaries to be permeable. The following hypothesis is formulated for all status groups *"Acceptance will be positively related to outgroup social mobility beliefs* (H29). The use of this belief system by the low status group is not very threatening to the high status group. The high status or advantaged group retains control over the permeability of its boundaries, and they can make it difficult to pass into their group so that social mobility is no threat to their dominant group (Abrams, 1992). They tolerate a small number of new members (tokenism) and they can tighten the boundaries if the numbers of outgroup members wanting to join grows too large (Hogg & Abrams, 1988). Social mobility is even beneficial for the dominant group as it decreases the likelihood of group action against it from the low status groups as it decreased identification with the group (Lalonde & Silverman, 1994). The high status group therefore is expected to support social mobility beliefs in the outgroup, as it does not threaten their position. The following hypothesis is formulated: *"For respondents of high status, identification will be positively related to outgroup social mobility beliefs"* (H30).

The use of this belief system by the low status group leaves the actual group positions unchanged. Although a few individuals may join the high status group, the high status group sees them as exceptional and does not see their characteristics as belonging to the low status group as a whole (Tajfel, 1981). The following predictions are made based on SIT's claims about the relationship between identification and social

mobility beliefs: *"For respondents of low and equal status, identification will negatively related to outgroup social mobility"* (H31).

## *Social Creativity*

If the high status group perceives the status relations as stable and/or legitimate then the preferred belief system to maintain their position is that of social creativity. The belief systems of social creativity do not necessarily achieve any change in the groups' relative positions. Each of the types of social creativity will result in a slightly different reaction from the high status group. Hogg and Abrams (1988) explain that a high status group may respond positively to some of the social creativity actions, used by the low status group. For example some social creativity actions reinforce the attributes that cause the low status group's inferior position and they will be supported by the high status group. They give the example of men admiring women for "their physical beauty, for their ability to care, cook and have babies" (p. 213). Reinforcing women's abilities in these areas does not produce change between the groups. They also mention some examples of social creativity strategies from the dominant group; men may emphasize the abilities women have for example, "women should take advantage of their capacity to care" (p. 213) that reinforce their disadvantaged position. Therefore in the current study *"Respondents who see the intergroup situation as legitimate will have higher outgroup social creativity beliefs than will respondents who see the intergroup situation as illegitimate* (H32). *Respondents who see the intergroup situation as stable will have higher support for outgroup social creativity beliefs than will respondents who see the intergroup situation as unstable* (H33).

The groups can accept social creativity strategies into the existing arrangement as long as the difference between the groups favours the high status group in prestige and power (Hogg & Abrams, 1988). As social creativity is not threatening to the high status group the following hypothesis for the high status group was formulated: *"Identification will be positively related to outgroup social creativity beliefs"* (H34).

The low status group however is not expected to support attempts by the high status group to maintain their status, so for the low status group *"Identification will be negatively related to outgroup social creativity beliefs"* (H35).

## Redefining the Value of Characteristics

Hogg and Abrams (1988) state that the high status group will perceive attempts by the low status group to redefine the value of characteristics as a threat. As the perception of status relies on mutual comparison between groups, the low status group needs to convince the high status group of the new value before this belief system can be successful. The dominant group can then try to ensure that the low status group is not too successful by challenging or repudiating the revaluation, or they may shift to other dimensions of comparison, in which the high status group remains superior.

## Using a New Dimension for Comparison

Tajfel and Turner (1986) state that introducing comparison on a new dimension can threaten the dominant group's positive distinctiveness. The high status group may tolerate some use of new dimensions, but only to a certain extent, once it becomes too much of a threat to their distinctiveness they will take action to maintain their position. The high status group can then reinforce the original dimensions, or create new ones on which they are once again superior (Hogg & Abrams, 1988). Hinkle and Brown (1990) suggest that the high status group can favour the low status group on some dimensions considered 'second rate' as a means of maintaining their positive distinctiveness by implying the others groups' distinctiveness is alternative or counter to norms. The main task for the low status group undertaking this belief system is to convince the high status group of the legitimacy of the new dimension of comparison.

*Changing the Outgroup*

Changing the Outgroup provides no threat to the dominant group who may actually encourage it. This belief system can help the high status group maintain the status quo as it can increase competition between low status groups.

*Social Competition*

Social Competition results in the most change occurring in the status of the disadvantaged group, meaning it is the most threatening to the high status group, and will cause conflict and antagonism between the groups. For this reason it is expected that for all status groups: *"Identification will be negatively related to outgroup social competition"* (H36). In particular when the high status group sees their position as legitimate they will act in a discriminatory way towards the low status group (Tajfel, 1975), which leads to the following hypotheses for the high status group. *"Respondents who see the situation as legitimate will have higher social competition (maintaining status) beliefs than respondents who see the intergroup situation as illegitimate* (H37). *Respondents who see the intergroup situation as unstable will have higher social competition (maintaining status) beliefs than respondents who see the situation as stable"* (H38). If the high status group sees their position as illegitimate, their reactions are more complex. They may react with greater discrimination if the intergroup positions are still stable, but if they are unstable, they may react with less discrimination. Finchilescu and de la Rey (1991) found that the white (high status) respondents in their study who perceived the inter-racial situation as illegitimate discriminated less than did those who perceived it as legitimate. The following hypothesis is formulated for the high status group based on this research: *"Respondents who see the intergroup situation as legitimate will have lower outgroup social competition beliefs than respondents who see the situation as illegitimate"* (H39). *"Respondents who see intergroup situation as stable will have lower outgroup social competition beliefs than respondents who see the situation as unstable "* (H40).

A high status group's positive distinctiveness can also be threatened by a conflict of values; this can occur if the group's position is illegitimate. In this situation, being a member of the group will no longer provide a positive self-concept for group members (Tajfel, 1975). If the group boundaries are permeable, individuals may leave the high status group. They may actually join the low status group, as have some high-profile upper-class revolutionaries (Hogg & Abrams, 1988). If the high status group member remains in their group the threat to the positive self-concept can only be resolved if the group finds a new justification for maintaining the status relations.

In contrast to the prediction from SIT, Finchilescu and de La Rey (1991) found that the white high status group members who perceived the situation to be legitimate and unstable were not more discriminatory than those high status members who perceived the situation to be legitimate and stable.

Hogg and Abrams (1988) outline some examples of social competition from the dominant gender group. When women are becoming successful, measures that reinforce the man's responsibility for household income (tax legislation) are often introduced, which reinforces traditional values. Sometimes men can accept the changing intergroup situation but acceptance can take different forms. When considering occupations sometimes the occupation can be actively opened to women, the job is then downgraded, the pay drops, men leave, and the occupation is feminised, which is referred to as gynopathy. Alternatively some attitudes of acceptance of women can be a patronizing gesture of a dominant group with a secure identity – they can afford to be generous, as their positive distinctiveness is not threatened.

## *Social Change Belief Systems – Maintaining Positive Distinctiveness Summary and Research Themes*

The social change belief systems of the high status group is an under researched area of SIT. SIT predicts that the high status group will make efforts to maintain its positive distinctiveness in the face of efforts by the low status group to achieve positive

distinctiveness. The belief systems will be influenced by the permeability of group boundaries, and the legitimacy and stability of the intergroup relations. The high status group's reaction will also be affected by the amount of threat they perceive from the low status group, and levels of identification with the ingroup. The amount of perceived threat is dependent on the belief system chosen by the low status group. Social mobility will not be seen as a threat but social competition is threatening to the positive distinctiveness of the high status group. The various forms of social creativity produce differing amounts of threat. The efforts of gender groups to maintain status have never been studied.

## 3.11 Chapter Summary

The current study focussed on specific areas of SIT. In the area of gender identification SIT states that identification is influenced by status beliefs and in turn affects the choice of social change beliefs. Little research has assessed the role of gender identity in the choice of social change beliefs. In the area of gender salience SIT appears to have more support for its view of gender salience than distinctiveness theory, especially when studying salience in the self-concept. Low status threatens the groups' positive distinctiveness and leads to action. As belonging to a group of high status makes a positive contribution to group members identity, members of high status groups identify more strongly with the ingroup than members of low status groups. The status of men in society is assumed to be high because of their advantaged access to resources and power, women are assumed to have low status. Perceptions of the intergroup situation include permeability or acceptance, legitimacy and stability. Very little research has studied the stability or legitimacy of the intergroup situation between genders. Legitimacy influences the social change beliefs of the groups to achieve or maintain positive distinctiveness. SIT predicts an interaction between legitimacy, stability and status. Research carried out mainly on laboratory groups has upheld some of SIT theories predictions about these factors.

Social change beliefs for achieving status are social mobility, which focuses on individual action, social creativity, which changes the comparisons between groups, and social competition, which consists of direct competition with the high status group. Social change belief systems are an area of SIT that has largely been ignored in research on gender relations. The actions of the low status group will in turn produce reactions from the high status group. The high status group's reactions will also be affected by the amount of threat they perceive from the low status group, and levels of identification with the ingroup. The amount of perceived threat is dependent on the belief system chosen by the low status group. Social mobility will not be seen as a threat but social competition is threatening to the positive distinctiveness of the high status group. The various forms of social creativity produce differing amounts of threat.

# CHAPTER 4: RESEARCH THEMES AND HYPOTHESES

## 4.1 Introduction

The present study aims to research some of the issues identified in the previous chapter that researchers have neglected. The research will focus on gender identification, gender and occupational salience, status and beliefs about the intergroup situation and social change beliefs for achieving and maintaining positive distinctiveness. This chapter sets out the research themes and specific hypotheses in each of these areas for the present study.

## 4.2 Gender Identity

The first research theme for the current study is gender identification. The differences in gender identification between men and women and occupational groups will be studied. Relationships between gender identification and other factors such as discrimination, salience, status and beliefs about the intergroup situation will be examined. The relationship between identification and social change beliefs will also be examined. The following specific hypotheses were formed.

H1    Men will have higher gender identification than will women.

H2    Gender discrimination will be positively correlated with self-concept gender salience and gender identification.

## 4.3 Identity Salience

The second research theme for the current study is identity salience. Occupational and gender salience in the self-concept will be explored and the Gender Salience Scale will measure gender salience in categorising others. The differences in gender and occupational salience between men and women and occupations groups will

be studied. Relationships between identity salience and other factors such as discrimination, and numbers in the workgroup will be examined. SIT's predictions about salience as opposed to those of distinctiveness theory will be tested. Specific hypotheses were formed about the relationship between salience and other variables and for the theories.

H3    Individuals who have a member of the opposite gender in their immediate workgroup will have higher self-concept gender salience than those who do not work with a member of the opposite gender.

H4    The number of same gender colleagues or the distinctiveness of category membership will not be related to gender salience.

H5    Women will have higher self-concept gender salience than men regardless of occupation.

H6    The minority in the workplace (female engineers and male nurses) will have higher self-concept gender salience than the majority group (male engineers and female nurses).

H7    Self-concept gender salience will be correlated with gender salience in categorising others.

H8    For male nurses and female engineers there will be an inverse relationship between occupational and gender salience. For male engineers and female nurses there will be a  positive relationship between occupational and gender salience.

H9    Male nurses and female engineers will have higher gender salience than occupational salience. Female nurses and male engineers will have higher occupational salience than gender salience.

## 4.4 Beliefs about the Intergroup Situation

The third research theme for the current study involves status and other beliefs about the intergroup situation. Hypotheses regarding status, legitimacy, stability and acceptance towards the outgroup and ingroup are formulated below. Differences between men and women and occupations will be examined. Predictions about the relationships between status and beliefs about the intergroup situation and other variables will be studied. Status will be associated with beliefs about the intergroup situation as predicted below.

### *Status*

H10    Respondents who see themselves of high status will have higher gender identification than respondents who see themselves of low status.

H11    The majority of female engineers will see themselves as low status, and the majority of male engineers will see themselves as high status.

H12    The majority of male nurses will see themselves as low status, and the majority of female nurses will see themselves as high status.

H13    The majority of female nurses will see themselves as low status and the majority of male nurses will see themselves of high status.

### *Acceptance*

The specific hypotheses for acceptance and social change beliefs are summarised in Table 2 (p. 95). Specific hypotheses are also listed below.

H14    High status respondents will express lower acceptance of the outgroup than the low status respondents, and the low status respondents will perceive lower acceptance of the ingroup than will the high status respondents.

H15    Gender identification will be negatively correlated with perceived acceptance of the ingroup.

H16    Women will be more accepting of men in female dominated occupations, than men will be of women in male dominated occupations.

### Legitimacy and Stability

H17    Stability beliefs will not be independent of legitimacy beliefs.

H18    More high status respondents will perceive the situation to be stable and legitimate than low status respondents.

## 4.5 Social Change Belief Systems –
## Achieving Positive Distinctiveness

The fourth research theme for the current study is social change beliefs for achieving positive distinctiveness. The differences in social change beliefs between men and women and occupations groups will be studied. Relationships between social change beliefs and other factors such as discrimination, salience, status and beliefs about the intergroup situation will be examined. No predictions can be made for the equal group, as SIT does not cover the actions of equal groups. The following specific hypotheses were formulated, and are summarised in Tables 1 (p. 93) and 2 (p. 95).

### Social Mobility

H19    For respondents of low and equal status acceptance will be positively related to ingroup social mobility beliefs.

H20    For respondents of low and high status, identification will be negatively related to social mobility beliefs.

H21    Respondents of low status who see the intergroup situation as legitimate will have higher social mobility beliefs than those of low status who see the situation as illegitimate.

H22    Respondents of low status who see the situation as stable, will have higher social mobility beliefs than those of low status who see the situation as unstable.

## *Social Creativity*

H23    Acceptance will be negatively related to ingroup social creativity beliefs.

H24    Respondents who see the intergroup situation as stable will have higher social creativity beliefs than will respondents who see the intergroup situation as unstable.

## *Social Competition*

H25    Acceptance will be negatively related to social competition beliefs

H26    Respondents who see the intergroup situation as illegitimate will have higher social competition beliefs than will respondents who see the situation as legitimate.

H27    Respondents who see the intergroup situation as unstable will have higher social competition beliefs than will respondents who see the situation as stable.

H28    Identification will be positively related to social competition.

Table 1

Predicted Relationships between Identification and Social Change Beliefs

| | Status | | |
|---|---|---|---|
| Social Change Beliefs | Low | Equal | High |
| Outgroup Social Mobility | - | - | +(S) |
| Outgroup Social Creativity | - | 0 | +(S) |
| Outgroup Social Competition | - | 0 | -(S) |
| Ingroup Social Mobility | -(S) | 0 | - |
| Ingroup Social Creativity | + | 0 | - |
| Ingroup Social Competition | +(S) | 0 | +(S) |

Note:  (i) + = positive relationship, - = negative relationship.
(ii) SIT predicted relationships are designated with (S)
(iii) 0 = no predicted relationships

# 4.6 Social Change Belief Systems -
# Maintaining Positive Distinctiveness

The fifth research theme for the current study is social change beliefs for maintaining positive distinctiveness. This area includes the beliefs the groups have about how the outgroup should be achieving status. The differences in social change beliefs between men and women and occupations groups will be studied. Relationships between social change beliefs and other factors such as discrimination, salience, status and beliefs about the intergroup situation will be examined.

## *Social Mobility*

H29     Acceptance will be positively related to outgroup social mobility beliefs.

H30     For respondents of high status, identification will be positively related to outgroup social mobility beliefs.

H31    For respondents of low and equal status identification will be negatively related to outgroup social mobility beliefs.

## Social Creativity

H32    Respondents who see the intergroup situation as legitimate will have higher support for outgroup social creativity beliefs than will respondents who see the intergroup situation as illegitimate.

H33    Respondents who see the intergroup situation as stable will have higher support for outgroup social creativity beliefs than will respondents who see the intergroup situation as unstable.

H34    For respondents of high status identification will be positively related to outgroup social creativity beliefs.

H35    For respondents of low status identification will be negatively related to outgroup social creativity beliefs.

## Social Competition

H36    Identification will be negatively related to outgroup social competition beliefs.

H37    Respondents who see the situation as legitimate will have higher social competition (maintaining status) beliefs than respondents who see the situation as illegitimate.

H38    Respondents who see the intergroup situation as unstable will have higher social competition (maintaining status) beliefs than respondents who see the intergroup situation as unstable.

H39    Respondents who see the intergroup situation as legitimate will have lower outgroup social competition beliefs than respondents who see the situation as illegitimate.

H40    Respondents who see the intergroup situation as stable will have lower support for outgroup social competition beliefs than will respondents who see the situation as unstable.

Table 2
Predicted Relationships between Acceptance and Social Change Beliefs

| Social Change Beliefs | Status | | |
|---|---|---|---|
| | Low | Equal | High |
| Outgroup Social Mobility | + | + | +(S) |
| Outgroup Social Creativity | - | - | -(S) |
| Outgroup Social Competition | - | - | -(S) |
| Ingroup Social Competition | -(S) | - | +(S) |
| Ingroup Social Mobility | +(S) | + | - |
| Ingroup Social Creativity | -(S) | - | + |

Note:  (i) + = positive relationship, - = negative relationship.
       (ii) SIT predicted relationships are designated with (S)
       (iii) 0 = no predicted relationships

# CHAPTER 5: METHOD

## 5.1 Overview

In this chapter the methodology for the current study is outlined. To begin an overview of the study is provided. Then the participants in the study are described. The development of each measure is then described including the results from the prepilot, the pilot, and the two stages of the main study.

The current study consisted of prepilot testing, a pilot study and a main study in two stages. In order to test the hypotheses of this study it was necessary to develop or adapt ways of measuring the constructs involved that would be suitable for use with gender groups in occupational settings. The questionnaire that was used in the two stages of the main study had seven sections (see Appendix A). The first section measured gender and occupational salience in the self-concept; this was adapted from The Spontaneous Self-concept measure (Abrams, Thomas, & Hogg, 1990). Section two was a measure of gender identification (Hinkle, Taylor, Fox-Cardamone and Crook 1989). Section three of the questionnaire measured gender salience as a basis of categorisations of others on the Gender Salience Scale (Greenwood and Glidden-Tracey, 1996). Section four measured respondents' perceptions of the groups' status, the legitimacy of the group's positions and the stability and permeability of the intergroup situation. The researcher developed this section based on previous measures used by Brown and Williams, (1984) and Finchilescu and de lay Rey, (1991). Sections five and six measure social change beliefs; these items were adapted from items used by Breinlinger and Kelly (1994). The final section asked for demographic information so that the sample could be described. Space was also provided in the main study for respondents to comment on their choices and answers for each section. Free answers were intended to increase the relevance of the numerical data by providing insights into the respondents' experiences. To increase the relevance of the questionnaires to participants separate questionnaires were created for each gender group and for each occupation, by using wording appropriate for each gender and each occupation.

The development of the questionnaire began with the selection of suitable measures to base the questionnaire on. Before the questionnaire was piloted approval for all stages of the research was obtained from the Massey University Human Ethics Committee. A prepilot study was conducted on a sample of Massey University Students. After adjustments were made to the questionnaire a pilot study was conducted on a sample of men and women working in gender dominated occupations. The main study consisted of two stages. Firstly data were collected from men and women working in a female dominated occupation. Following the completion of the female dominated occupation data collection, data were collected from men and women working in two male dominated occupations.

## 5.2 Participants

### *Prepilot Testing*

The prepilot sample consisted of 24 female Massey university students and 6 male Massey university students. The average age of the female students was 32.1 years and the average age of the male students was 30 years.

### *Pilot Study*

### *Male Dominated Occupation*

The male dominated occupation sample for the pilot study consisted of police officers. Of the female officers, 12 (48% of questionnaires distributed) returned questionnaires and 30 (55% of questionnaires distributed) male officers returned the questionnaires. Male officers had a longer tenure ($M = 10.5$, $SD = 8.32$) on average than female officers ($M = 3.2$, $SD = 2.10$), $t (39) = 4.40$, $p < .001$. Male officers ($M = 38.8$, $SD = 8.10$) were also older on average than female officers ($M = 30.2$, $SD = 4.37$), $t (39) = 3.46$, $p < .001$.

### *Female Dominated Occupation*

The female dominated occupation chosen for the pilot study was nursing. Of the female nurses 19, (32% of questionnaires distributed) returned questionnaires; of the male nurses 10 (33% of questionnaires distributed) returned questionnaires. Male nurses had a mean tenure of 2.7 ($SD = 2.84$) years, while female nurses had a mean tenure of 5.7 ($SD = 8.03$) years, $t$ (25) = 1.13, $p = > .05$. Male nurses had a mean age of 33.1 ($SD = 5.34$) years, and female nurses had a mean age of 38.6 ($SD = 12.54$) years, $t$ (26) = 1.60, $p > .05$.

## *Main Study*

The main study sample consisted of 207 volunteer respondents of whom 83 were men and 124 were women.

### *Female Dominated Occupations*

The female dominated occupation sample consisted of 31 male and 79 female nurses, a questionnaire return rate of 26% for men and 28% for women. The majority of nursing respondents were New Zealanders of European descent (73%); the next largest group were from the United Kingdom (10%). The mean length of time that female nurses had been in their present job was 4.8 ($SD = 5.53$) years; while the mean length of time male nurses had been in their present jobs was 3.5 (SD = 3.01) years, $t$ (103) = 1.56, $p > .05$. The average age for male nurses was 36.8 ($SD = 8.27$) years; the average age for female nurses was 36.9 ($SD = 9.97$) years, $t$ (106) = 1.45, $p > .05$.

### *Male Dominated Occupations*

The male dominated occupation sample consisted of engineers and prison officers. Of the male prison officers, 11 returned the survey and 3 female prison officers

answered the survey, representing a questionnaire return rate of 4% for male prison officers and 3% for female prison officers. The largest ethnic group was New Zealanders of European descent (71%). The mean length of time male prison officers had been in their present jobs was 9.2 ($SD$ =5.32) years; the mean length of time for females was 9.5 ($SD$ = 3.77) years, $t$ (12) = .10, $p$ > .05. Male prison officers had a mean age of 40.8 ($SD$ = 5.35) years females had a mean age of 45.0 ($SD$ = 3.46) years, $t$ (11) = 1.26, $p$ > .05.

Of the engineers, 41 males and 42 females returned questionnaires, representing a volunteer rate of 1.6% of all engineers who receive the IPENZ e-zine. The largest ethnic group was New Zealanders of European descent (89%), the next largest group was Europeans (4%). On average the male engineers ($M$ = 6.7, $SD$ = 8.63) had been in their present jobs longer than female engineers ($M$ = 2.5, $SD$ = 2.15), $t$ (81) = 3.1, $p$ < .001. Male engineers ($M$ = 39.5, $SD$ = 10.62) were also older on average than the female engineers ($M$ = 29.1, $SD$ = 7.28), $t$ (79) = 5.13, $p$ < .001.

## 5.2 MATERIALS

### Measure Development

#### Prepilot Testing

To assist with the development of the questionnaire it was piloted on a small group of male and female (30) Massey University students before the pilot study. The prepilot testing aimed to establish the internal reliability and face validity of the measures. It was also necessary to test the questionnaire layout and length. The pre-pilot testing also enabled items measuring social change beliefs to be tested for current relevance to the gender groups in New Zealand. The length of the questionnaire was found to be problematic for respondents at this stage so some items measuring social change beliefs were removed (see Appendix B for revisions to the social change belief scale) and the GSS was shortened.

*Pilot Study*

The pilot study was designed to repeat the testing of the measures on a sample of individuals working in gender dominated occupations. The pilot study had several aims; the first aim was to retest the measures on the actual sample of interest (men and women in gender dominated occupations). It was also necessary to test whether applying the identification scale to gender groups affected the scales internal reliability, and whether condensing the GSS affected its internal reliability. The measures of legitimacy, status and stability also needed to be retested after changes were made following the prepilot. The measure of social change beliefs also needed retesting after changes had been made. The pilot study provided information on the internal reliability and factor construction of the scales. Internal consistency reliability was considered adequate at .75. Respondents in the pilot study also provided information about the ease of use of the questionnaire. Participants were from two small provincial cities not included in the region of the main study. Questionnaire packs included a questionnaire, information sheet, freepost envelope for return, and a letter from the organization saying they had given permission for the research to be carried out. Questionnaire packs were distributed randomly through the internal mail systems of the organizations.

## Materials
### The Spontaneous Self-Concept

The first section was the Spontaneous Self-Concept measure (McGuire & Padawer-Singer, 1976; McGuire, McGuire, Child & Fujioka, 1978; McGuire, McGuire & Winton, 1979). The Spontaneous Self-Concept measure is based on the assumption that invoking a free response from the respondent will provide a more authentic measure of the dimensions that people use when thinking about themselves than a measure where the researcher chooses the dimensions that the respondent then rates. The Spontaneous Self-Concept measure simply asks respondents to "tell us about yourself". Respondents

have been given numbered lines to fill in (McGuire & Padawer-Singer, 1976) or have had responses to the question tape recorded (McGuire et al. 1978; McGuire et al. 1979).

## Prepilot Testing and Pilot Study

In the prepilot testing, the following instructions were used: "Please write down five important pieces of information about yourself". A score was then given to each mention of gender or occupation. This ranged from 1 not mentioned and therefore not salient, to 6 mentioned first, therefore highly salient. These are the instructions and scoring methods used by Abrams, Thomas, and Hogg (1990). In the prepilot testing 15% of respondents did not fill in this section. This indicated that the respondents were having problems filling in this question, so additional instructions were provided in the pilot study.

In the pilot study the instruction "Please tell me about yourself" was added to the questionnaires to make the instructions clearer. This is also the instruction previously used by McGuire and colleagues (McGuire & Padawer-Singer, 1976; McGuire, McGuire, Child & Fujioka, 1978, McGuire, McGuire & Winton, 1979). Only 4% of the respondents in the pilot study left this section blank, which indicated that the additional instruction did assist the respondents in filling in this section.

## Main Study:

The main study instructions were the same as those used in the pilot study. The Spontaneous Self-Concept measure was presented first in the questionnaire; this was to reduce the extent to which information from the following sections affected the salience of gender and occupation. The spontaneity of the Spontaneous Self-concept Measure would be affected by the focus of the quantitative measures on gender and occupations. Some respondents still had difficulties with this section; thirteen respondents (6%) did not fill in this section.

*Gender Identification*

The second section of the questionnaire measured gender identification. Brown, Condor, Mathews, Wade, and Williams (1986) developed a measure of group identification based on the three aspects of group identification identified by Tajfel (1978), awareness of group membership (cognitive), the value of the membership (evaluative) and affect towards membership (emotional). Their scale had ten items: five reflected positive attitudes towards the group, and five reflected negative attitudes. Brown et al.'s scale showed a Cronbach's alpha of .71. To assess the validity of the scale they compared their respondents' scores on the identification scale to their interview responses. They concluded that the scale had adequate validity. Brown et al. also conducted a factor analysis on the scale they found three intercorrelated (non-independent) factors. The identification scale can be adapted to measure identification with different groups, by including the name of the group in each item. Kelly (1988) adapted Brown et al.'s scale in this manner to measure identification with political groups. The scale had adequate internal reliability ($\alpha$= 0.79) in Kelly's study. She also carried out a factor analysis that showed two factors, one consisting of the negative items, and one consisting of positive items.

Hinkle, Taylor, Fox-Cardamone, and Crook (1989) based their own identification scale on the scale developed by Brown et al. They retained six of the original items used by Brown et al. and included three new items. Their scale was also designed to measure the three aspects of identification as subscales. The new identification scale had higher internal consistency than the previous studies ($\alpha$ = 0.85). A three factor principal components factor analysis (with oblique rotation) conducted by Hinkle et al. demonstrated clear loadings on the cognitive and emotional factors. They named the third factor individual group opposition as it represented opposition between individual needs and group opposition. Item 6 did not load clearly onto a factor.

In the present study the scale developed by Hinkle et al. was used to measure gender identification. To measure gender identification the general term group used by

Hinkle et al. was replaced with men and women as appropriate. For example, the first item used by Hinkle et al. was " I identify with this group". For the present study, this became "I identify with women as a group", for the women's questionnaire, and "I identify with men as a group", for the men's questionnaire. The nine items are rated on a nine-point scale (from strongly disagree to strongly agree), which provides a score ranging from –36 (low gender identification) to 36 (high gender identification). Items 3, 6, 7, and 8 are reverse scored. There were no changes made to the scale between the three stages of testing.

## Prepilot Testing and Pilot Study

Prepilot testing showed that the Gender Identification scale had below adequate reliability $\alpha$ = .66. Removing item three increased the reliability to $\alpha$= .78 ($N$=28). The sample was not adequate for a factor analysis to be conducted.

In the pilot study the gender identification scale again had a low Cronbach's alpha of .56 ($N$= 66). Removing item 3 – 'I feel held back by my group', increased the alpha to $\alpha$= .63. A factor analysis with varimax rotation resulted in a three-factor structure, with three items loading on each factor. The factor analysis of the pilot study data appeared to be more successful than the previous factor analysis by Hinkle et al. (1989). All items in the pilot study loaded onto one of the three factors. Hinkle et al. (1989) found that item 6 – 'I do not fit in well with my group', did not load clearly onto a factor. The internal consistency reliability scores for the extracted factors were also higher than the reliability for the Hinkle et al. (1989) subscales. The three factors extracted in the pilot study also fit in with the three aspects of identification that the scale was designed to cover - the knowledge of group membership, the value of that membership and the emotional ties to the group. These results need to be treated cautiously however due to the small numbers of respondents in the pilot study that was too low for reliable factor analysis.

Main Study

In the main study the Gender Identification scale showed adequate internal reliability for the total sample ($\alpha = .79$), and adequate internal reliability for men and women in the total sample. The Cronbach's alphas for each sample are shown in Table 3.

Table 3

Internal Consistency Alphas of the Gender Identification Scale (Main Study).

| Sample | Combined | Gender Male | Female |
|---|---|---|---|
| Total Sample | .79 | .79 | .78 |
| | (202) | (81) | (121) |
| Male Dominated Occupations | .70 | .72 | .71 |
| | (96) | (51) | (45) |
| Female Dominated Occupations | .67 | .59 | .70 |
| | (106) | (30) | (76) |

Note: *n*'s are in brackets

A factor analysis was carried out on the gender identification scale. An oblique rotation was used because Hinkle et al. (1989) claim the factors are correlated. Two factors emerged from the analysis as shown in Table 4. The two factors that Hinkle et al. saw as measuring emotional and cognitive aspects of group membership did not separate in this analysis. The second factor includes the items Hinkle et al. called individual/group opposition and item six that did not load with any factor in their original analysis.

The first factor accounted for 48 % of the variance, and combined the two factors that Hinkle et al. called cognitive and emotional ($\alpha = .92$, $N = 207$). Factor two accounted for 19% of the variance and included the items that Hinkle et al. termed individual group opposition and item 6 that did not load onto a factor in the Hinkle et al. study ($\alpha = .56$, $N = 207$). This is a similar factor structure to that found by Kelly (1988),

who found the negative and positive items loading onto two separate factors in her study of identification with political parties.

*Gender Salience Scale*

The third section of the questionnaire measured Gender Salience as a basis for categorising others. Glidden-Tracey and Wagner (1995) initially measured Gender Salience on a scale that they had developed to measure respondents' reactions to and opinions about real events they had encountered. There were problems with the generalisability and low variability of this scale. Greenwood and Glidden-Tracey (1996) then went on to create the Gender Salience Scale (GSS). The GSS consists of what Greenwood and Glidden-Tracey call interpersonal contexts the respondents indicate how much they rely on gender as a basis for responding to the contexts. The GSS asks respondents to choose one statement from five that reflects the different levels of Gender Salience. Choosing from between specific statements was designed to create more accurate levels of Gender Salience than using a Likert response format as choosing between different statements ensures that respondents are sharing the same anchors. Greenwood and Glidden-Tracey (1996) reported an adequate internal reliability, $\alpha = .78$. They also checked the test-retest reliability of the GSS, $r = .85, p < .001$. To measure construct validity, scores on the GSS were compared with scores on the Attitudes Towards Women Scale (Spence & Helmreich, 1972, cited in Greenwood & Glidden Tracey, 1996). The scores were related in the predicted direction, which indicates that attitudes towards women in society are linked to Gender Salience.

The Gender Salience Scale used in this study consisted of 20 statements that represent different contexts in which gender may be a salient feature for judging others

Table 4

Factor Loading for the Identification Scale. (Main Study, All Samples).

| Item | Factor A | Factor B | Communalities |
|---|---|---|---|
| 2. I am glad to be a woman/man. | **.91** | -.04 | .83 |
| 1. I identify with women/men as a group. | **.91** | .11 | .83 |
| 4. I think that women/men work well together. | **.85** | .09 | .73 |
| 5. I see myself as important part of the group of working women/men | **.84** | .01 | .71 |
| 9. I feel strong ties to other women/men. | **.80** | .01 | .64 |
| 7. I consider my gender to be important. | **.76** | -.18 | .62 |
| 6. I do not fit in well with other women/men. | -.07 | **.84** | .71 |
| 8. I feel uneasy with other women/men. | .03 | **.83** | .69 |
| 3. I feel held back because I am a woman/man. | . 03 | **.50** | .25 |

(Oblique rotation, KMO= .877, $N = 207$)

behaviour. These included opinions about friends, health, household tasks, occupation and finances. Five statements that represent the five levels of gender salience follow each context. The respondents circle the statement that best reflects their opinion. The statement is given a score of one to five. The total score is a mean score for the whole scale, the maximum score was five, and the minimum was one. Greenwood and Glidden-Tracey (1996) conceptualise the five levels of gender salience as follows:

Level 1: Low Gender Salience: The individuals' actions and decisions are completely independent of gender.

Level 2: Low-Moderate Gender Salience: Individuals actions and decisions are slightly determined by gender.

Level 3: Moderate Gender Salience: Individuals actions and decisions are partially (roughly half the time) determined by gender.

Level 4: High Moderate Gender Salience: Gender is a major factor determining individuals' actions and decisions.

Level 5: High Gender Salience: Individuals actions and decisions are totally determined by gender.

## Prepilot Testing and Pilot Study

Prepilot testing showed that the full twenty item scale had high internal consistency reliability $\alpha = .84$ ($n = 27$). Respondents however expressed concern over the length of the questionnaire. Some of the contexts (such as healthcare and birth control decisions) seemed irrelevant for the sample of men and women working in gender dominated occupations used in the present study, so were removed from the GSS for the pilot study.

For the pilot study only 13 contexts from the original 20 were used. The items that focused on work, finances and household tasks were retained, as these items seemed most relevant to the sample of people working in gender dominated occupations. The pilot study showed a low Cronbach's alpha of .59 for the 13 retained contexts.

Main Study:

The 13 contexts used for the pilot study were also used in the main study. The GSS demonstrated adequate internal reliability for the main study total sample ($\alpha = .79$). The minimum gender salience score was 1.2 and the maximum was 3.5. The Cronbach's alphas for each sample are given in Table 5.

Table 5

Internal Consistency Alphas for the Gender Salience Scale (Main Study)

| Sample | Combined | Gender Male | Female |
|---|---|---|---|
| Total Sample | .79 | .79 | .78 |
| | (202) | (81) | (121) |
| Male Dominated | .71 | .73 | .67 |
| Occupations | (92) | (50) | (42) |
| Female | .61 | .61 | .61 |
| Dominated | (100) | (29) | (71) |
| Occupations | | | |

Note: $n$'s are in brackets

*Beliefs about the Intergroup Situation*

Status:

Brown and Williams (1984) measured the status of groups in their study of workers at a bakery by asking the respondents to rank order the four different groups in the bakery, at the present. Finchilescu and de la Rey (1991) used a similar measure in their study; they measured status on an intergroup perception ladder. An intergroup perception ladder requires respondents to indicate the position of the groups on a drawing of a ladder with 11 rungs. The respondents indicated where they believed the position of the groups to be at the present time. Skevington (1981) measured status relations between nurses by asking the respondents to create a list of the advantages and

disadvantages that both groups had. The ratio of advantages to disadvantages was an indication of the status relations. The current study used a combination of these techniques to measure status.

## Legitimacy and Stability:

Brown and Williams (1984) measured the legitimacy of status relations by requiring respondents to rank order the groups in the organization, as to where the respondents felt their status ought to be. The difference between where the groups are and where they ought to be is an indication of the legitimacy of the status relations. In the same manner as Brown and Williams (1984) Finchelescu and de la Rey (1991) used the difference between the respondents' indication of where the groups are at the present time on the intergroup perception ladder and where they ought to be, as a measure of legitimacy. In the Finchelescu and de la Rey (1991) study respondents also indicated where they thought the groups would be in the future. The difference between the respondents' indication of where the groups are at the present time on the intergroup perception ladder and where they think they will be in the future was used as a measure of the stability of the intergroup situation. The present study used a combination of these techniques to measure legitimacy and stability.

## Acceptance:

As members of one gender group cannot commonly change their group membership to the other group a measure of acceptance of the groups was used instead of a measure of the actual permeability of group boundaries. The measure of acceptance asked about the ease of integration between the groups.

## Prepilot Testing and Pilot Study

In the prepilot testing to measure status the respondents were asked to place the groups (men and women) on lines in order of who has the most advantages in the workplace at the present time. Legitimacy was measured by asking respondents to place the groups (men and women) in order of who they thought should have the most advantages. The respondents were asked to indicate who will have the most advantages in the future, the difference between this and where they placed the groups in the present indicated their perceptions of the stability of the intergroup situation. Only two lines were provided for the respondents to place the groups on in the pre-pilot, as SIT (Tajfel & Turner, 1979) claims groups are of high or low status. A large number of respondents (33%) requested an equal option or complained that an equal option was not available.

The prepilot indicated that many respondents believed the intergroup situation to be equal. An equal option was added to the status measure for the pilot study, to ensure that information about those who do believe the situation is equal was not missed. Additional lines were added to the status legitimacy and stability measures, beside the lines used in the original measure. This enabled the groups to be placed equally on the lines. Many respondents (10%) did still not understand how to express equality on this measure and found it an unsatisfactory way of expressing equality.

## Main Study- Female Dominated Occupations

In the main study, the measure of status consisted of the question: "Which of these groups do you think has the most advantages in your workplace, at the present time?" The respondents then chose between three response options: females have the most advantages, males have the most advantages, or males and females have equal advantages. Respondents ticked the box of the statement they agreed with. This enabled the respondents to be directed to answer different sections of the social change

beliefs measure designed specifically for their status beliefs. The measure of legitimacy and stability used the same format as the status question.

A measure of acceptance of the groups was added to the main study. Acceptance was measured on two, nine-point scales. One asked the difficulty or ease that males experience in integrating with and being accepted by females in their occupation, and the other asked the difficulty or ease females experience being accepted by and integrating with males in their occupation.

## Main Study- Male Dominated Occupations

The measure described above for the nursing sample was also used for the male dominated occupations. In addition, a continuous measure was used to measure status, legitimacy and stability. This was to assist with data analysis and to provide additional information about beliefs about the intergroup situation that are not provided by a categorical measure. The extra items asked the respondents to rank (on a nine point scale) the status of men and women in their profession (status), how fair or unfair the status was (legitimacy), and whether men's and women's future position would be worse, the same or improved (stability). Acceptance was measured in the same way as for the female dominated occupations, on two, nine-point scales.

### *Social Change Beliefs*

Breinlinger and Kelly (1994) studied women's social change beliefs using Q-Sort methodology. They chose their items from a combination of pilot interviews, previous research and current events in newspaper and magazine articles. Judges who had some knowledge of SIT sorted these items into the various beliefs. Only statements that were unanimously chosen to represent beliefs were used. In the present study, the items from Breinlinger and Kelly's study were used to develop a scale to measure men and women's social change beliefs. Some items that initially seemed out of date or irrelevant for a working sample were discarded for example, "when I hear about women

who work, I feel good about staying home" (p. 16). The items for the male respondents were created by adapting the female items used by Breinlinger and Kelly (1994). For example, an item measuring social competition was originally, "If companies and institutions gave women as many advantages as men then we would see more women in powerful jobs". For men this became "If companies and institutions gave men as many advantages as women then we would see more men in powerful jobs".

Additional items were also developed from literature and pilot interviews. The social change beliefs of social mobility, social creativity (new dimension, changing the values, and changing the outgroup), and social competition were measured on nine point scales (from –4, strongly disagree to 4 strongly, agree). Appendix C shows the items used to measure each social change belief in the main study.

## Prepilot Testing and Pilot Study

For the female respondents in the pre-pilot testing and pilot study the measure of social change beliefs consisted of one measure of ingroup social change beliefs. For the male respondents in the pre-pilot and pilot the measure consisted of items measuring ingroup social change beliefs, with a few items measuring their acceptance of rejection of the females social change beliefs (outgroup measure). Forty-six male items and forty-six female items were tested those that contributed to low reliability or received negative comments from respondents were discarded (refer to Appendix B for discarded and retained items). The social change belief scale alphas for the pilot study are shown in Table 6. Thirty items were retained for the main study.

## Main Study - Female Dominated Occupations

The measure used in the pilot study was found to be inadequate as the belief items treated women as low status and men as high status, but male or female respondents could see themselves of high, low or equal status. The measure used in the pilot study did not adequately measure the respondents' beliefs in response to this, so

changes were made to the measures. The measure of social change beliefs was organized into three sections, a respondent only answered one section depending on their perception of the status of their group. If they saw themselves of low status, they answered questions designed to measure their beliefs about improving their groups position (ingroup measure) these beliefs are referred to in this study as ingroup social competition (achieving), ingroup social mobility and ingroup social creativity. If the respondents saw themselves as of high status, they answered questions designed to measure their support or rejection of the beliefs of the low status group (outgroup measure), these beliefs are referred to in this study as outgroup social competition, outgroup social mobility and outgroup social creativity. The outgroup measure also included items measuring social competition beliefs for maintaining their group's status(referred to as ingroup social competition maintaining). If the respondent thought that the groups were equal, they answered some items from both the outgroup measure and the ingroup measure.

Table 6

Internal Consistency Alphas of Social Change Beliefs (Pilot Study)

| Social Change Beliefs | Gender | |
| --- | --- | --- |
| | Female | Male |
| Ingroup social competition | .81 (30) | .82 (36) |
| Ingroup social mobility | .81 (29) | .43 (40) |
| Ingroup social creativity | .69 (27) | .65 (40) |
| Outgroup changing the outgroup | - | .79 (40) |
| Ingroup changing the outgroup | .61 (30) | .02 (40) |
| Outgroup changing the values | - | .69 (40) |
| Ingroup changing the values | .41 (31) | .46 (40) |
| Outgroup new dimension | - | .49 (40) |
| Ingroup new dimension | .58 (27) | .76 (40) |

Note: $n$ 's are in brackets

## Main Study – Male Dominated Occupations

The method of measuring the reactions of the high, equal and low status groups used for the female dominated occupation sample was found to be confusing for the respondents, and limited the analysis of the social change beliefs because of the large numbers of respondents who saw the situation as equal. For the male dominated sample all respondents filled in the outgroup measure and the ingroup measure, which enabled extra information to be collected from both groups about their support or rejection of the beliefs of the outgroup.

Open-ended questions were also used to measure social change beliefs, for both the female and male dominated occupation samples. This enabled additional qualitative information to be collected. Two questions were asked with the outgroup measure of social change beliefs:

1. What are the types of strategies that you notice the outgroup using to try to improve the situation for their gender group in your occupation?
2. What are your reactions to these strategies?

Three questions were asked with the ingroup measure of social change beliefs:

1. What are the types of strategies that you use to improve the general situation for your gender group in your occupation?
2. What sort of reactions are these met with by other members of the ingroup?
3. What sort of reactions are these met with by the outgroup?

The social change beliefs used in the main study were tested for internal reliability; many of the scales had low internal reliability as shown in Tables 7 and 8.

Table 7

Ingroup Social Change Beliefs Internal Consistency Alphas (Main Study)

| Scale | Gender | |
|---|---|---|
| | Male | Female |
| Ingroup Social Mobility | .79 | .82 |
| | (58) | (54) |
| Ingroup Social Competition (achieving status) | .24 | .80 |
| | (58) | (55) |
| Ingroup Changing the Values | .55 | .55 |
| | (55) | (54) |
| Ingroup New Dimension | .85 | .81 |
| | (58) | (55) |
| Ingroup Changing the Outgroup | .46 | .28 |
| | (58) | (54) |
| Ingroup Social Creativity | .80 | .74 |
| | (54) | (50) |

Note *n*'s are in brackets

Table 8

Outgroup Social Change Beliefs Internal Consistency Alphas (Main Study)

| Scale | Gender | |
|---|---|---|
| | Male | Female |
| Outgroup Social Mobility | .79 | .71 |
| | (60) | (57) |
| Outgroup Social Competition | .59 | .44 |
| | (57) | (55) |
| Ingroup Social Competition (maintaining status) | .67 | .69 |
| | (74) | (104) |
| Outgroup Changing the Values | .42 | .55 |
| | (60) | (57) |
| Outgroup New Dimension | .79 | .80 |
| | (59) | (57) |
| Outgroup Changing the Outgroup | .68 | .44 |
| | (56) | (43) |
| Outgroup Social Creativity | .77 | .81 |
| | (54) | (43) |

Note: *n*'s are in brackets

A principal components (with oblique rotation) factor analysis on each of the four measures (male ingroup, male outgroup, female ingroup, female outgroup) was performed to isolate the clearest associations of beliefs. The factor analysis results are shown in Tables 9, 10, 11 and 12. It was found that two of the types of Social Creativity, Changing the Values and New Dimension, were not separate factors for any of the groups. Items were discarded until strong factors with adequate (above .75) internal reliability emerged. Items were discarded if they did not load onto a factor, or if they loaded with items that were not theoretically related to each other. Some items were not included in the combined sample analysis as the items were only used for one sample, either the male dominated occupation or the female dominated occupation. As shown in Table 9 the male ingroup measure factor analysis resulted in three factors: Social Creativity (combining changing the values, new dimension and changing the outgroup), Social Mobility and Social Competition. Factor one accounted for 23.19% of the variance, factor two for 20.50% and factor three accounted for 11.64% of the variance. Nine items were discarded. Item 4 – 'When I see the kinds of jobs other men are doing I'm satisfied with my own achievements' was originally designed to measure changing the outgroup. Item 13 ' I rarely consider how much my female colleagues get paid', was also originally included to measure changing the outgroup. These two items loaded negatively with the social competition items, so were reverse scored and included as part of the social competition factor.

The male outgroup measure resulted in four factors as shown in Table 10 (p. 119): Social Creativity (combining changing the values and new dimension) which accounted for 22.12% of the variance, Social Mobility which accounted for 18.75% of the variance, Social Competition which accounted for 10.90% of the variance and Changing the Outgroup which accounted for 8.5% of the variance. Ten items were discarded.

The female ingroup measure resulted in four factors as shown in Table 11 (p. 120): Social Competition (26.88% of the variance), Social Mobility (15.56% of the variance), Social Creativity (9% of the variance) and Changing the Outgroup (8.29% of the variance). Eight items were discarded. Items 7, 16,19 and 23 were originally

designed to measure social competition beliefs however when they were reverse scored they loaded onto the social mobility factor. The social mobility factor was characterized by agreement with the social mobility items and disagreement with four of the social competition items.

The female outgroup measure showed three factors: Social Creativity (combining changing the values, new dimension and changing the outgroup) which accounted for 25.70% of the variance, Social Mobility (14.32% of the variance) and Social Competition (10.20% of the variance). Seven items were discarded. Item 13 – 'men should rarely consider how much female colleagues get paid' was designed to measure changing the outgroup however it loaded with social competition items, so it was reverse scored and retained as part of the social competition factor. The results of the factor analysis are shown in Table 12 (p. 121).

Mean scores were used, based on the factors that emerged from the factor analysis where possible. Tables 13 and 14 show the internal consistency alphas for the extracted factors.

Table 9

Factor Loading for Social Change Beliefs Male Ingroup Measure (main study $N$ =56).

| Item | Factor 1 | Factor 2 | Factor 3 | Communalities |
|---|---|---|---|---|
| 12. Better at handling situations with the potential for violence. | **.83** | -1.5 | -.15 | .68 |
| 5. Men make better work colleagues than women. | **.79** | -.26 | .07 | .66 |
| 2. Men are tougher and stronger than women. | **.78** | -.07 | -.11 | .60 |
| 23. General values and outlook are superior to women's. | **.77** | -.25 | .17 | .67 |
| 16. Breadwinner is the most important in the family. | **.68** | -.03 | .08 | .47 |
| 27. More important to be clinical than emotional. | **.53** | .32 | .11 | .44 |
| 10. Better place if women were more like men in their values. | **.51** | -.29 | .48 | .62 |
| 28. Male nurses have no reason for complaint. | **.46** | .13 | -.00 | .24 |
| 22. No excuse for other men not succeeding. | **.45** | .41 | -.17 | .45 |
| 24. I try to compare myself with other men. | **.42** | .20 | .01 | .23 |
| 15. It's important that people make the most of opportunities. | -.15 | **.90** | -.04 | .81 |
| 25. It's up to each individual person | -.02 | **.86** | -.02 | .75 |
| 3. Drive and ambition are still important in our society. | -.25 | **.79** | .07 | .63 |
| 6. If you want something badly enough you can achieve it. | .02 | **.75** | .02 | .56 |
| 9. Most people just don't have enough drive and ambition. | .34 | **.51** | .17 | .44 |
| 17. Men should keep on fighting until they have equality. | -.07 | .12 | **.88** | .74 |
| 26. There is still a lot of prejudice and discrimination. | .20 | .13 | **.77** | .65 |
| 14. Men should be angry about their low status in nursing. | .06 | .08 | **.76** | .57 |
| 13. I rarely consider how much female colleagues get paid. | .15 | .43 | **-.48** | .50 |
| 4. When I see the kinds of jobs other men are doing. | .31 | .21 | **-.43** | .35 |

Table 10

Factor Loading for Social Change Beliefs Male Outgroup Measure (main study $N = 55$).

| Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Communalities |
|---|---|---|---|---|---|
| 11. General values and outlook are superior to men's. | **.75** | -.07 | -.16 | -.22 | .63 |
| 17. Women are more versatile and flexible than men. | **.74** | -.06 | -.20 | -.17 | .59 |
| 15. Women make better work colleagues than men. | **.67** | -.15 | -.08 | .15 | .47 |
| 20. Better place if men were more like women in their values. | **.67** | -.04 | .15 | -.14 | .53 |
| 23. Men want women to stay in the home. | **.65** | -.20 | .14 | -.06 | .51 |
| 27. Women are more sensitive and caring than men. | **.59** | .06 | -.11 | -.29 | .46 |
| 6. Women are better at doing many things at once than men. | **.57** | .37 | -.08 | .12 | .45 |
| 19. A woman has a lower status in society than a man. | **.55** | .01 | .33 | .48 | .65 |
| 8. It is more important to be intuitive than it is to be logical. | **.44** | .28 | .15 | .38 | .41 |
| 28. Men and women have equal opportunities. | -.34 | **.80** | .00 | -.11 | .79 |
| 4. If women want to get ahead in their careers. | -.12 | **.76** | .07 | .00 | .59 |
| 24. Now that there are so many women in senior positions. | .19 | **.65** | .13 | -.05 | .51 |
| 21. It is important now that women make the most of the freedoms they've got. | .29 | **.62** | .16 | -.17 | .58 |
| 26. If you're good at your job, then you'll be promoted. | -.33 | **.62** | -.25 | -.11 | .58 |
| 9. It's up to each individual woman. | -.09 | **.59** | -.24 | .06 | .39 |
| 22. Compared with Muslim women. | .20 | **.57** | .36 | -.34 | .72 |
| 7. Women should be angry about their low status in nursing. | -.18 | -.02 | **.95** | -.05 | .88 |
| 12. Women must keep on fighting. | -.17 | -.01 | **.94** | -.03 | .87 |
| 14. When women see how little some other women have. | .16 | .08 | .15 | **-.82** | .77 |
| 10. When women see the kinds of jobs. | .03 | .30 | .03 | **-.75** | .74 |
| 18. When female nurses/engineers hear about women who stay in the home. | .20 | .00 | .04 | **-.69** | .54 |

Table 11

Factor Loading for Social Change Beliefs Female Ingroup Measure (main study $N = 51$)

| Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Communalities |
|---|---|---|---|---|---|
| 9. It's up to each individual woman. | **.82** | .31 | -.03 | -.07 | .77 |
| 18. When I hear about women who stay in the home. | **.68** | -.20 | .05 | -.23 | .62 |
| 2. If companies and institutions provided child care facilities. | **.57** | -.09 | .15 | .33 | .46 |
| 12. Women must keep on fighting. | **.53** | -.48 | .06 | .03 | .56 |
| 28. Men and women have equal opportunities. | .05 | **.88** | .04 | -.14 | .80 |
| 4. If women want to get ahead in their nursing | .00 | **.88** | .09 | -.13 | .77 |
| 26. If you're good at your job, then you'll be promoted. | .18 | **.86** | .09 | -.08 | .76 |
| 16 (r). There is still a lot of prejudice and discrimination. | -.25 | **.71** | -.25 | .17 | .78 |
| 7 (r). Women should be angry about their low status | -.19 | **.70** | -.11 | .39 | .73 |
| 19 (r). As a woman I have a lower status in society than a man | -.26 | **.64** | -.08 | .23 | .58 |
| 24. Now that there are so many women in senior positions. | .10 | **.61** | .04 | -.28 | .48 |
| 23 (r). Men want women to stay in the home. | .08 | **.36** | -.26 | .35 | .37 |
| 17. On the whole women are more versatile and flexible | .04 | .14 | **.82** | .08 | .63 |
| 11. General values and outlook are superior to men's. | .10 | .01 | **.75** | .29 | .61 |
| 15. Better work colleagues than men. | -.14 | -.10 | **.72** | .01 | .54 |
| 3. Drive and ambition are overrated. | -.34 | .05 | **.70** | -.17 | .55 |
| 20. Better place if men were more like women in their values. | -.01 | -.13 | **.62** | .03 | .44 |
| 6. Women are better at doing many things. | .20 | .03 | **.61** | -.20 | .52 |
| 27. Women are more sensitive and caring than men. | .27 | .10 | **.53** | -.26 | .50 |
| 25. Men have an unequal share of status. | .33 | -.06 | **.52** | .12 | .45 |
| 22. Compared with Muslim women. | .12 | .20 | -.21 | **-.76** | .69 |
| 8. I think it is more important to be intuitive. | -.31 | -.16 | .24 | **-.73** | .44 |
| 21. Women make the most of the freedoms they've got | .23 | .29 | -.09 | **-.51** | .69 |

Note: r indicates reverse scored items

Table 12

Factor Loading for Social Change Beliefs Female Outgroup Measure (main study $N = 55$)

| Item | Factor 1 | Factor 2 | Factor 3 | Communalities |
|---|---|---|---|---|
| 10. Better place if women were more like men in their values | **.74** | -.10 | -.11 | .56 |
| 16. Breadwinner is the most important in the family. | **.74** | .15 | -.16 | .65 |
| 24. Men should try to compare myself with other men | **.73** | -.08 | .42 | .65 |
| 2. Men are tougher and stronger than women. | **.71** | .05 | -.20 | .59 |
| 5. Men make better work colleagues than women. | **.68** | -.02 | -.02 | .46 |
| 12. Men are better at handling situations with the potential for violence. | **.66** | .04 | .13 | .45 |
| 23. Men's general values and outlook are superior | **.65** | .03 | -.06 | .44 |
| 7. It is more important to be logical than it is to be intuitive | **.65** | .19 | .00 | .49 |
| 15. It is important that people make the most of the opportunities. | -.05 | **.85** | -.11 | .75 |
| 25. It's up to each individual person. | -.29 | **.80** | .22 | .67 |
| 6. If you want something badly enough. | -.02 | **.66** | -.39 | .65 |
| 3. Drive and ambition are still important in our workplaces. | .24 | **.65** | -.07 | .55 |
| 18. Men and women have equal opportunities in nursing | .10 | **.55** | .13 | .33 |
| 22. There are so many men in senior positions. | .04 | **.42** | .03 | .18 |
| 9. Most people just don't have enough drive and ambition | .23 | **.33** | -.31 | .32 |
| 14. Men should be angry about their low status. | .16 | .01 | **-.71** | .56 |
| 26. There is still a lot of prejudice and discrimination. | .25 | .00 | **-.62** | .47 |
| 13. Men should rarely consider how much female colleagues get paid | .28 | .31 | **.61** | .50 |
| 17. Men must keep on fighting | -.36 | .24 | **-.50** | .41 |
| 1. If men in nursing/engineering had as any advantages as women | .36 | -.01 | **-.45** | .36 |

Table 13

Outgroup Social Change Beliefs Internal Consistency Alphas for Extracted
Factors (Main Study)

| Scale | Gender | |
| --- | --- | --- |
| | Male | Female |
| Outgroup Social Mobility | .82 | .71 |
| | (60) | (57) |
| Outgroup Social Competition | .99 | .55 |
| | (59) | (55) |
| Outgroup Changing the Outgroup | .78 | - |
| | (59) | |
| Outgroup Social Creativity | .81 | .85 |
| | (58) | (57) |

Note: $n$'s are in brackets

Table 14

Ingroup Social Change Beliefs Internal Consistency Alphas for Extracted
Factors (Main Study)

| Scale | Gender | |
| --- | --- | --- |
| | Male | Female |
| Ingroup Social Mobility | .81 | .87 |
| | (57) | (54) |
| Ingroup Social Competition (achieving status) | .73 | .70 |
| | (58) | (55) |
| Ingroup Changing the Outgroup | - | .53 |
| | | (56) |
| Ingroup Social Creativity | .82 | .82 |
| | (57) | (53) |

Note $n$'s are in brackets

## 5.3 Design and Procedure

Before questionnaires were distributed permission to survey members of the
gender dominated occupations were initially obtained from the appropriate management
or research staff in each organization.

Nurses at five hospitals were surveyed; 285 female nursing questionnaire packs
and 120 male nursing questionnaires packs were distributed. Included with the

questionnaire were a freepost return envelope and an information sheet. At two hospitals management distributed the questionnaires to charge nurses on each ward who then asked volunteers to fill in the questionnaires. At the remaining three hospitals, management e-mailed the charge nurses of the hospitals informing them of the study, and the questionnaires were delivered to each ward by the researcher. The charge nurses then sought volunteers to fill in the questionnaires. A thank you letter was sent to the charge nurse of each of these wards one week later –this included a reminder to the volunteers to return the questionnaires. The questionnaires were returned directly to the researcher in the freepost envelope provided with the questionnaires.

At the prisons, managers were informed of the study and they distributed questionnaires to volunteers among their sections, 273 male questionnaires and 87 female questionnaires were distributed. The questionnaires were returned directly to the researcher in the freepost envelope provided with the questionnaires.

To recruit engineers for the study a request for volunteers to fill in a questionnaire among engineers was published in their professional institute's e-zine. Volunteers then contacted the research by e-mail requesting a questionnaire. The questionnaires were mailed or e-mailed to the respondents who returned the questionnaires by e-mail or in the freepost envelope provided.

The questionnaires were coded by the researcher and analysed with the SPSS statistical program. To test for differences between the groups in the study, analysis of variance was used. Two-way ANOVAs could not be used as gender and occupation were not independent, $\chi^2(1, N = 207) = 13.87, p < .001$. Chi Square analyses were used for the categorical variables – status, legitimacy and stability. To test for relationships between variables regression analyses and correlations were used. The statistics were considered significant when $p < .05$, two-tailed tests of significance were used. For hypotheses were direction was predicted one-tailed tests of significance were used. All tests were performed on the full sample, and differences between occupations and genders were also tested.

The answers to the free response and open-ended questions were content analysed by the researcher. Content analysis according to Miles and Huberman (1994)

is a process of searching for categories and themes from the data. As the current study was conducted using SIT, the categories for the content analysis were derived from the concepts and categories of SIT.

## Measures Used in the Main Study

| Measure | Method of Scoring | Questionnaire Section | | | | Item Numbers | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | Nurses | | Engineers | | | |
| | | Men | Women | Men | Women | Men | Women |
| Spontaneous Self Concept Measure | 1-6 ranking (6= highly salient) | Section A | | Section A | | - | |
| Gender Identification: | Total (range –36-+36) | Section B | | Section B | | 1-9 | |
| Gender Identification – Emotional/Cognitive | Factor Score | Section B | | Section B | | 2,1,4,5,9,7 | |
| Gender Identification Individual/Group Opposition | Factor Score | Section B | | Section B | | 6,8,3 | |
| Gender Salience Scale | Total/number of items (range 1-5) | Section C | | Section C | | 1-13 | |
| Status | High, (3) Low (1), Equal (2) | Section D | | Section D | | Nurses 1  Engineers: 1,4,5 | |
| Legitimacy | Legitimate (0), Illegitimate (1) | Section D | | Section D | | Nurses: 2  Engineers: 2, 6,7 | |
| Stability | Stable (0), Unstable (1) | Section D | | Section D | | Nurses: 3  Engineers: 3,8,9 | |
| Acceptance | Total (range-4-+4) | Section D | | Section D | | Nurses: 4a and 4b  Engineers: 10,11 | |
| Social Mobility (ingroup measure) | Total/number of items (range –4 -+4) | E & G | F & G | F | F | 15,25,3,6,9 | 28,4,26,16,7,19, 24,23 |
| Social Competition (ingroup measure-achieving) | Total/number of items (range –4 -+4) | E & G | F & G | F | F | 17,26,14,13,4 | 9,18,2,12 |
| Social Creativity (ingroup measure) | Total/number of items (range–4 -+4) | E & G | F & G | F | F | 12,5,23,16,27, 10,28,22,24 | 17,11,15,3,20,6, 27,25 |
| Social Mobility (outgroup measure) | Total/number of items (range–4 -+4) | F & G | E & G | E | E | 28,4,24,21,26,9, 22 | 15,25,6,3,18,22,9 |
| Social Competition (outgroup measure) | Total/number of items (range–4 -+4) | F & G | E & G | E | E | 7,12 | 14,26,13,17,1 |
| Social Creativity (outgroup measure) | Total/number of items (range–4 -+4) | F & G | E & G | E | E | 11,17,15,20,23, 27,6,19,8 | 10,16,24,2,5,12, 23,7 |
| Social Competition (maintaining) | Total/number of items (range–4 -+4) | F & G | E & G | E | E | 1,2,3,4,5 | 1,2,3,4,5 |

# CHAPTER 6 RESULTS

Chapter 6 presents the results from the two stages of the main study. The results section is organised according to the main areas of SIT that were examined in this study. The first section presents the results of the gender identification measure. The second section covers the results of the identity salience scales. Thirdly, the results of the beliefs about the intergroup situation are described. Sections 4 and 5 cover social change beliefs for achieving and maintaining status.

## 6.1 Gender Identity
### Total Sample

Table 15 shows the means and standard deviations for the gender identification scale as a full scale and for the subscales extracted by factor analysis, of cognitive/emotional aspects and individual/ group opposition. One-way ANOVA's were performed to test for differences in gender identification between the different groups in the study.

### Gender Identification and Gender Groups

Differences in gender identification between the genders are shown in Table 15. As predicted (hypothesis 1) for the full scale men scored significantly higher than women in gender identification, $F(1, 200) = 7.72$, $p = < .01$. Men also scored significantly higher on the cognitive/emotional subscale than women, $F(1,205) = 7.48$, $p < .01$. No significant differences between the genders were found on the individual group opposition subscale.

## Gender Identification and Occupations

The male dominated occupation sample had a higher mean score on the full scale than the female dominated occupation, $F(1, 200) = 201.34, p < .001$.

The male dominated occupation sample also had a higher mean score on the cognitive/emotional subscale than the female dominated sample, $F(1,200) = 442.89, p < .001$. The female dominated sample scored higher on individual group opposition than the male dominated sample, $F(1,200) = 5.03, p < .05$. A high score on this subscale represents low conflict between individual and group needs which contributes to high identification. The female dominated occupation experienced less opposition between individual and group needs than the male dominated sample.

Within the female dominated sample, there was no significant difference in gender identification between men and women. Within the male dominated sample men scored higher than women on the individual group opposition subscale, $F(1,95) = 5.45, p < .05$, showing that men experienced less opposition between individual and group needs than women.

## Gender Identification and Status

Table 16 shows the mean gender identification scores for the total scale and each subscale for each group of respondents, according to their perception of their group's status. Contrary to hypothesis 10 that high status groups would have higher gender identification there was no significant differences between the low equal and high groups in gender identification on the full scale. On the cognitive/ emotional subscale the low status group had higher gender identification ($M = 0.56, SD = 2.09$) than the equal group ($M = -0.61, SD = 1.86$), $F(2, 202) = 7.12, p < .001$. On the individual/group opposition subscale, the low status group had a lower score ($M = 0.94, SD = 1.78$) than both the equal ($M = 2.15, SD = 1.47$) and the high status group ($M = 1.77, SD = 1.25$), $F(2, 201) = 11.53, p < .001$. The low status group experienced more opposition between individual and group needs than the equal or high status groups.

Table 15

Mean Gender Identification Scores (for each sample)

| Gender Identification Scale | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | F | Female | Male | F | Female | Male | F | Female | Male | F |
| n= | 79 | 31 | | 45 | 52 | | 124 | 83 | | 110 | 109 | |
| Full Scale | -0.50 | -0.40 | 0.24 | 1.46 | 1.45 | 0.00 | 0.23 | 0.77 | 7.72** | -.047 | 1.46 | 201.34*** |
| | (0.90) | (0.81) | (1, 104) | (1.06) | (1.06) | (1, 94) | (1.35) | (1.32) | (1, 200) | (0.87) | (1.05) | (1, 200) |
| Cognitive/Emotional Subscale | -1.73 | -1.60 | 0.44 | 1.65 | 1.32 | 1.71 | -0.50 | 0.23 | 7.48** | -1.69 | 1.47 | 442.89*** |
| | (0.95) | (0.79) | (1, 108) | (1.22) | (1.27) | (1, 95) | (1.94) | (1.80) | (1, 205) | (0.91) | (1.25) | (1, 205) |
| Individual/Group Opposition Subscale | 2.00 | 1.90 | 0.10 | 1.07 | 1.82 | 5.45* | 1.66 | 1.85 | 0.70 | 1.97 | 1.47 | 5.03* |
| | (1.47) | (1.72) | (1, 107) | (1.84) | (1.30) | (1, 95) | (1.66) | (1.46) | (1, 204) | (1.54) | (1.61) | (1, 204) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Note:  (i) standard deviations and degrees of freedom are in brackets,

(ii) $n$'s may vary depending upon missing values.

Table 16

Mean Gender Identification Scores for Each Status Group

| Gender Identification Scale | Status | | | | Post Hoc |
| --- | --- | --- | --- | --- | --- |
| | Low (L) | Equal (E) | High (H) | $F$ | |
| $n=$ | 57 | 99 | 49 | | |
| Full Scale | 0.72 | 0.34 | 0.37 | 1.48 | |
| | (1.51) | (1.39) | (1.12) | (2, 197) | |
| Cognitive/Emotional Subscale | 0.56 | -0.61 | -0.24 | 7.12*** | L>E |
| | (2.09) | (1.86) | (1.59) | (2, 202) | |
| Individual/Group Opposition Subscale | 0.94 | 2.15 | 1.77 | 11.53*** | L<E |
| | (1.78) | (1.47) | (1.25) | (2,201) | L<H |

*** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets,

(ii) $n$'s may vary depending upon missing values.

(iii) For equal variances the Bonferroni Post Hoc test was used, for unequal variances the Dunnett T3 Post Hoc test was used.

## Gender Identification and Majority and Minority Groups

Respondents were divided into majority and minority groups. The minority group was made up of males in female dominated occupations and females in male dominated occupations. The majority group was made up of females in female dominated occupations and males in male dominated occupations. Table 17 shows the means and standard deviations on the gender identification full scale and subscales for the minority and majority groups. The minority group was higher in gender identification on the full scale, $F(1,200) = 4.73$, $p < .05$, and on the cognitive/emotional subscale, $F(1,200) = 9.72$, $p < .01$ than the majority group. The majority group was higher on the individual group opposition subscale than the minority group, $F(1,200) = 5.21$, $p < .05$. The majority group had less conflict between individual and group needs than the minority group.

Table 17

Mean Gender Identification Scores for Majority and Minority Groups

| Gender Identification Scale | Group | | |
|---|---|---|---|
| | Minority | Majority | $F$ |
| $n=$ | 76 | 131 | |
| Full Scale | 0.71 | 0.29 | 4.73* |
| | (1.33) | (1.36) | (1, 200) |
| Cognitive/Emotional Subscale | 0.32 | -.52 | 9.72** |
| | (1.93) | (1.85) | (1, 205) |
| Individual/Group Opposition Subscale | 1.41 | 1.93 | 5.21* |
| | (1.82) | (1.40) | (1, 204) |

* $p < .05$, ** $p < .01$

Note: (i) standard deviations and degrees of freedom are in brackets.
    (ii) $n$'s may vary depending upon missing values.

## Gender Identification and Other Variables

Table 18 shows the correlations between gender identification as a total scale and subscale and the other variables. Contrary to Hypothesis 2, gender identification was not related to gender discrimination, $r = -.07$, $p > .05$ on the full scale. Individual

group/opposition was negatively related to discrimination, $r = -.24, p < .001$. High individual group opposition was associated with experiencing gender discrimination.

Table 18

Correlations between Gender Identification and other Variables (total sample $N = 207$)

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1. Gender Identification Full Scale | - | | |
| 2. Gender Identification Cognitive Emotional Subscale | .92*** | - | |
| 3. Gender Identification Individual Group Opposition | .36*** | -.03 | - |
| 4. Discrimination | -.07 | .02 | -.24** |
| 5. Age | -.05 | -.07 | .03 |
| 6. Gender Salience Spontaneous Self Concept | -.09 | -.09 | -.00 |
| 7. Acceptance of the ingroup | -.09 | -.21** | .25*** |
| 8. Acceptance towards the outgroup | -.07 | .03 | -.17* |

* $p < .05$, ** $p < .01$, *** $p < .001$
Note: n's may vary due to missing values.

Table 19 shows the free answer responses on gender identification for the female dominated and male dominated samples respectively. A large number of the male dominated sample (23%) mentioned how gender was unimportant in the workplace, however no members of the female dominated sample mentioned this. The two largest groups of responses for men in female dominated occupations were mentioning the types of things that affect gender identification (33%), particularly the effect of the working environment. Secondly was an emphasis on individuals rather than gender groups (33%), particularly identifying more with some individuals within the gender group than others. The largest category of remarks for the women in the female dominated sample was their lack of identification with their gender group (33%), this focused on aspects such as the context and differences in identification with different groups of women. For the males in male dominated occupations the things that affect gender identification, positive remarks about men and the emphasis on the unimportance of gender were mentioned equally (23% each). The females in the male

dominated occupation sample made the most remarks about the negative aspects of working with other women (43%).

Table 19

Free Answers on Gender Identification

| Gender | Female Dominated Occupations | | Male Dominated Occupations | |
|---|---|---|---|---|
| | Male $n = 15$ | Female $n = 24$ | Male $n = 22$ | Female $n = 21$ |
| Lack of Identification with gender group | 0% | 33% | 18% | 0% |
| Emphasis on individuals | 33% | 20% | 9% | 10% |
| Discrimination | 27% | 20% | 0% | 10% |
| Things that affect Identification | 33% | 27% | 23% | 19% |
| Positive remarks about gender | 0% | 27% | 23% | 24% |
| Negative remarks about gender | 0% | 13% | 9% | 43% |
| Remarks about outgroup | 13% | 0% | 5% | 0% |
| Remarks about the unimportance of gender | 0% | 0% | 23% | 14% |
| Miscellaneous | 7% | 13% | 9% | 0% |

## 6.2 Identity Salience

Table 20 shows the means and standard deviations for gender salience, on the Spontaneous Self Concept Scale, occupational salience on the Spontaneous Self Concept Scale and the Gender Salience Scale. One-way ANOVA's were performed to test for differences in gender salience between the different groups in the study.

## *Identity Salience, Gender Groups and Occupations*

As shown in Table 20 no significant differences were found in identity salience between the men and women in the sample, or between men and women in each occupation. Hypothesis 5 that women would have higher self-concept gender salience than men was not supported. There were also no differences in identity salience between occupations.

## *Identity Salience and Status Groups*

As shown in Table 21 no differences in gender or occupational salience were found between the status groups.

Table 21

Mean Identity Salience Scores for Each Status Group

| Salience Scale | Status | | | |
|---|---|---|---|---|
| | Low (L) | Equal (E) | High (H) | *F* |
| *n=* | 57 | 99 | 49 | |
| Gender- Spontaneous Self-Concept | 1.94 (1.92) | 1.85 (1.85) | 1.66 (1.60) | 0.31 (2,188) |
| Occupations – Spontaneous Self-Concept | 2.92 (2.15) | 2.64 (1.99) | 3.07 (1.97) | 0.46 (2,188) |
| Gender Salience Scale | 2.35 (0.47) | 2.28 (0.44) | 2.32 (0.48) | 0.59 (2, 202) |

Note:   (i) standard deviations and degrees of freedom are in brackets,
(ii) *n*'s may vary depending upon missing values.

## *Identity Salience and Majority and Minority Groups*

Comparing the mean salience scores for the minority and majority groups' results in one significant difference as shown in Table 22 (p. 136).  Hypothesis 6 is only supported on the Gender Salience Scale on which the majority group had a higher mean score than the minority group, $F (1, 205) = 5.27, p < .05$.  The relationship between gender salience and occupational salience was explored.  Contrary to predictions (Hypothesis 8) there were no correlations between occupational and gender

Table 20

Mean Identity Salience Scores (for each sample)

| Salience Scale | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ |
| $n=$ | 79 | 31 | | 45 | 52 | | 124 | 83 | | 110 | 97 | |
| Gender Spontaneous | 2.05 | 2.00 | 0.02 | 1.63 | 1.53 | 0.08 | 1.90 | 1.71 | 0.52 | 2.04 | 1.58 | 3.19 |
| Self Concept | (1.96) | (1.96) | (1,101) | (1.63) | (1.56) | (1,88) | (1.85) | (1.72) | (1,191) | (1.95) | (1.59) | (1,191) |
| Occupation Spontaneous Self Concept | 3.01 | 2.75 | 0.35 | 2.77 | 2.57 | 0.20 | 2.92 | 2.64 | 0.90 | 2.94 | 2.67 | 0.89 |
| | (1.99) | (2.08) | (1,101) | 2.11 | 2.00 | (1,88) | (2.03) | (2.02) | (1, 191) | (2.01) | (2.04) | (1,191) |
| Gender Salience Scale | 2.40 | 2.25 | 2.45 | 2.20 | 2.33 | 1.90 | 2.32 | 2.30 | 0.15 | 2.35 | 2.27 | 1.70 |
| | (0.44) | (0.45) | (1,101) | 0.42 | 0.50 | (1,95) | (0.44) | (0.48) | (1, 205) | (0.45) | (0.46) | (1,205) |

Note  (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

salience for the full sample (Table 26, p. 139) or for the majority or minority groups as shown in Table 23.

Table 24 shows the relationship between gender and occupational salience, for the majority and minority groups. As predicted (Hypothesis 9) the majority group also had significantly higher occupational salience than gender salience, $t = -4.27, p < .01$. Contrary to predictions the minority group also had significantly higher occupational salience than gender salience, $t = -3.40, p < .01$.

Table 22

Mean Identity Salience for Minority and Majority Groups

| Salience Scale | Group | | |
|---|---|---|---|
| | Minority | Majority | $F$ |
| $n=$ | 76 | 131 | |
| Gender Spontaneous Self Concept | 1.77 (1.77) | 1.85 (1.83) | 0.08 (1, 191) |
| Occupation Spontaneous Self Concept | 2.76 (2.09) | 2.84 (2.00) | 0.08 (1, 191) |
| Gender Salience Scale | 2.22 (0.43) | 2.37 (0.46) | 5.27* (1, 205) |

* $p < .05$
Note: (i) Standard deviations and degrees of freedom are in brackets.
  (ii) Note: n's may vary due to missing values.

Table 23

Correlations between Gender Salience and Occupational Salience

| | Group | | | | | |
|---|---|---|---|---|---|---|
| | Minority | | | Majority | | |
| $n=$ | 71 | | | 122 | | |
| Salience Scale | 1 | 2 | 3 | 1 | 2 | 3 |
| 1. Gender Salience SSC | - | | | - | | |
| 2. Occupational Salience | .21 | - | | .10 | - | |
| 3. Gender Salience Scale | -.02 | .11 | - | .09 | -.01 | - |

Note: n's may vary due to missing values.

Table 24

Paired Sample T-Test Results for Gender and Occupational Salience (total sample)

| Spontaneous Self Concept Scale | Group | |
|---|---|---|
| | Minority | Majority |
| $n=$ | 71 | 122 |
| Gender Salience | 1.77 | 1.85 |
| | (1.77) | (1.83) |
| Occupational Salience | 2.76 | 2.84 |
| | (2.09) | (2.00) |
| $t$ | -3.40*** | -4.27*** |
| | (70) | (121) |

*** $p < .001$

Note: standard deviations and degrees of freedom are in brackets

## *Gender Salience, SIT and Distinctiveness Theory*

In order to test hypothesis 3 the sample was grouped into those individuals who worked with members of the outgroup (outgroup present) and those who did not work with any members of the outgroup (outgroup absent). Table 25 shows that there was no differences in gender salience (Self Concept and GSS) between those respondents who work with a member of the outgroup and those that do not.

Table 25

Gender Salience Means for Outgroup Present and Outgroup Absent.

| Salience Scale | Presence of Outgroup | | |
|---|---|---|---|
| | Outgroup Absent | Outgroup Present | $F$ |
| $n=$ | 22 | 179 | |
| Gender Spontaneous Self Concept | 1.50 | 1.86 | 0.72 |
| | (1.54) | (1.83) | (1, 96) |
| Gender Salience Scale | 2.42 | 2.31 | 0.31 |
| | (0.54) | (0.44) | (1,103) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Note  (i) standard deviations and degrees of freedom are in brackets

     (ii) $n$'s may vary due to missing values

Table 26 presents correlations between the salience scales and other variables. Hypothesis 4 that the number of same gender colleague would be related to gender salience was not supported, $r = .05, p > .05$. The only significant correlation between gender salience and the other variables measured, is a positive relationship between the Gender Salience Scale and age, $r = .17, p < .05$. The older respondents were more likely use gender as a basis for attitudes about others. The number of same gender colleagues was not related to gender salience, $r = .05, p > .05$. Hypothesis 7 that Gender Salience in the self-concept would be related to the Gender Salience Scale was not supported, $r = .05, p > .05$.

# Table 26

Correlations between Gender Salience and other Variables (total sample $N= 207$)

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Gender Salience Spontaneous Self Concept | - | | | | | | | | | | |
| 2. Occupational Salience Spontaneous Self Concept | .14 | - | | | | | | | | | |
| 3. Gender Salience Scale | .05 | .03 | - | | | | | | | | |
| 4. Acceptance to Ingroup | -.14 | -.05 | .05 | - | | | | | | | |
| 5. Acceptance to Outgroup | .03 | -.08 | .04 | .13 | - | | | | | | |
| 6. Percent of Ingroup in Workgroup | .05 | .05 | .10 | .30** | -.36** | - | | | | | |
| 7. Percent of Outgroup in Workgroup | -.03 | -.05 | -.09 | -.31** | .36** | - | - | | | | |
| 8. Gender Identification Full Scale | -.09 | -.08 | -.04 | -.09 | -.07 | -.20** | .19** | - | | | |
| 9. Gender Identification Cognitive Emotional Subscale | -.10 | -.07 | -.03 | -.21** | .00 | -.28** | .27** | - | - | | |
| 10. Gender Identification Individual Group Opposition | .03 | -.04 | .01 | .25** | -.17* | .18* | -.17* | - | - | - | |
| 11. Discrimination | .07 | -.08 | -.03 | -.12 | -.09 | .00 | -.00 | -.07 | .02 | -.24*** | - |
| 12. Age | .08 | .06 | .17* | .06 | -.22** | .19** | -.19** | -.05 | -.07 | .03 | -.03 |

$* p < .05, ** p < .01, *** p < .001$

Note: n's may vary due to missing values.

Table 27 summarises the information gathered from the free response section on gender salience. In the female dominated occupation sample the majority of men mentioned the causes of differences between genders (38%), the category included comments about the physical differences between the genders, or socialization differences. The second largest group of comments from the men in the female dominated occupation talked about the distinction between how they think it should be and what actually happens in reality (38%). The largest group of comments from the women in the female dominated occupations mentioned other reasons or causes for attitudes such as culture and religion (44%).

Within the male dominated occupation sample the largest category of comments from men mentioned the other causes or reasons for attitudes (36%). A larger number of men in male dominated occupations mentioned the upholding of tradition (32%) as a reason for gender differences than men in the female dominated occupation sample (0%). Women in the male dominated occupation sample most often mentioned alternative reasons for attitudes (38%).

Table 27

Free Answers on Gender Salience

| Gender | Female Dominated Occupations | | Male Dominated Occupations | |
|---|---|---|---|---|
| | Male $n = 8$ | Female $n = 16$ | Male $n = 22$ | Female $n = 13$ |
| Causes of Gender Differences | 38% | 38% | 18% | 8% |
| Belief in Different Gender Roles | 0% | 13% | 18% | 8% |
| Distinction between Reality and Beliefs | 38% | 19% | 5% | 8% |
| Upholding of Tradition | 0% | 25% | 32% | 31% |
| Challenging Tradition | 0% | 0% | 5% | 23% |
| Alternative bases for attitudes | 13% | 44% | 36% | 38% |
| Miscellaneous | 0% | 0% | 32% | 15% |

## 6.3 Beliefs about the Intergroup Situation

### *Status*

Chi square tests were performed on status to test the distribution of beliefs. For the overall sample the distributions of perceptions of ingroup status, $\chi^2$ (2, $N = 205$) = 21.11, $p < .001$ were unequal, more respondents believed their status to be equal than high or low.

Differences between men and women and those working in male and female dominated occupations were also explored. As shown in Table 28 status beliefs were not independent of occupation, $\chi^2$ (2, $N= 205$) = 16.04, $p < .001$. The perceptions of the status of the groups were not independent of gender, $\chi^2$ (2, $N = 205$) = 23.79, $p < .001$. Hypotheses 12 and 13 were not supported, men and women in female dominated occupations did not have significantly different beliefs about the status of the groups, $\chi^2$ (2, $N= 205$) = 1.67, $p > .05$. Men and women in male dominated occupations had different distributions of beliefs about the status of the groups, $\chi^2$ (2, $N = 97$) = 42.68, $p < .01$. Hypothesis 11 was supported, the majority of female engineers (71%) saw themselves of low status, $\chi^2$ (2, $N = 45$) = 31.60, $p < .001$. The majority of male engineers saw themselves as of equal (42%) or high status (48%), $\chi^2$ (2, $N = 52$) = 13.42, $p < .001$.

Table 29 shows the beliefs about the intergroup situation for the majority and minority groups. More of the minority group members saw themselves as of low status than majority group members, $\chi^2$ (1, $N = 205$) = 33.92, $p < .01$

Table 28

Distribution of Respondents in their Beliefs about the Intergroup Situation

| Measure | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent of Females | Percent of Males | $\chi^2$ | Percent of females | Percent of males | $\chi^2$ | Percent of Females | Percent of males | $\chi^2$ | Percent of Female | Percent of Male | $\chi^2$ |
| $n=$ | 77 | 31 | | 45 | 52 | | 122 | 83 | | 108 | 97 | |
| Low Status | 17 | 23 | 1.67 | 71 | 10 | 42.68** | 37 | 14 | 23.79** | 19 | 38 | 16.04* |
| Equal Status | 65 | 52 | | 24 | 42 | | 50 | 46 | | 61 | 34 | |
| High Status | 18 | 26 | | 4 | 48 | | 13 | 40 | | 20 | 28 | |
| Legitimate | 69 | 47 | 4.72* | 27 | 42 | 2.59 | 53 | 44 | 1.73 | 63 | 35 | 15.60** |
| Illegitimate | 31 | 53 | | 73 | 58 | | 47 | 56 | | 37 | 65 | |
| Stable | 77 | 80 | 0.11 | 61 | 77 | 2.54 | 71 | 78 | 1.08 | 78 | 70 | 1.82 |
| Unstable | 23 | 20 | | 39 | 23 | | 29 | 22 | | 22 | 30 | |

* $p < .05$, ** $p < .01$,
Note: $n$'s may vary due to missing values

Table 29

Beliefs about the Intergroup Situation held by Majority and Minority Group

| Scale | Group | | |
| --- | --- | --- | --- |
| | Percent Minority | Percent Majority | $\chi^2$ |
| $n=$ | 76 | 129 | |
| Low Status | 51 | 14 | 33.92** |
| Equal Status | 36 | 56 | |
| High Status | 13 | 30 | |
| Legitimate | 35 | 58 | 10.51** |
| Illegitimate | 65 | 42 | |
| Stable | 69 | 77 | 1.50 |
| Unstable | 31 | 23 | |

** $p < .01$, note $n$'s may vary due to missing values

## *Legitimacy and Stability*

The distributions of the beliefs of legitimacy were not unequally distributed. The Chi square shows unequal distributions of the perceptions of stability of the intergroup relations, $\chi^2 (1, N= 199) = 45.35, p < .001$, more respondents believed the intergroup situation to be stable than believed it to be unstable. As predicted (hypothesis 17) stability beliefs were not independent of legitimacy beliefs $\chi^2 (1, N = 198) = 28.33, p < .001$.

Legitimacy beliefs were not independent of occupation, $\chi^2 (1, N = 202) = 16.60, p < .01$. The majority of nurses perceived the situation as legitimate, and the majority of engineers perceived the situation as illegitimate. Within female dominated occupations legitimacy beliefs were dependent on gender, $\chi^2 (1, N = 202) = 4.72, p < .05$. The majority of women in female dominated occupations saw the situation as legitimate and the majority of men saw the situation as illegitimate.

A larger percentage of the minority group saw the intergroup situation as illegitimate than the majority group, $\chi^2 (1, N = 202) = 10.51, p < .01$.

Table 30 shows the distribution of the beliefs of legitimacy and stability of the different status groups. As predicted (Hypothesis 18) status is not independent of

legitimacy beliefs, $\chi^2$ (2, $N$ = 202) = 175.54, $p$ < .01, or stability beliefs, $\chi^2$ (2, 202) = 29.86, $p$ < .01

Table 30

Perceptions of Legitimacy and Stability for Each Status Group

| Scale | Status | | | $\chi^2$ |
|---|---|---|---|---|
| | Percent of Low | Percent of Equal | Percent of High | |
| $n=$ | 56 | 97 | 49 | |
| Legitimate | 2 | 98 | 8 | 175.54** |
| Illegitimate | 98 | 2 | 92 | |
| | | | | |
| Stable | 60 | 92 | 55 | 29.86** |
| Unstable | 40 | 8 | 45 | |

** $p$ < .01

## Acceptance

Table 31 shows the means and standard deviations of acceptance towards the ingroup and acceptance of the outgroup for each sample. No significant difference in perceived acceptance was found between men and women. Respondents in male dominated occupations felt significantly less accepted than those in female dominated occupations, $F$ (1, 183) = 9.66, $p$ < .01. Men in female dominated occupations were more accepting of the outgroup than women in female dominated occupations, $F$ (1, 103) = 7.11, $p$ < .01.

Women in male dominated occupations felt significantly less accepted than men in male dominated occupations, $F$(1, 79) = 14.72, $p$ < .01. Men in male dominated occupations were less accepting towards the outgroup than women in male dominated occupations, $F$(1, 77) = 31.29, $p$ < .01.

Mean acceptance scores were also analysed by ingroup status the results are shown in Table 32. There were significant differences in acceptance of the ingroup between low, equal and high respondents $F$ (2, 181) = 13.01, $p$ < 01. As predicted (hypothesis 14), the low status group perceived significantly lower acceptance ($M$ = -0.43) of the ingroup than the equal ($M$ = 1.22) and the high status ($M$ = 1.29) groups. There was no significant difference between the equal group and the high status group.

Table 31

Mean Acceptance Scores (for each sample)

| Scale | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ |
| $n=$ | 74 | 31 | | 45 | 36 | | 118 | 67 | | 105 | 81 | |
| Acceptance Towards | 1.38 | 0.74 | 2.21 | -0.56 | 1.19 | 14.72*** | 0.64 | 0.99 | 1.07 | 1.19 | 0.22 | 9.66** |
| Ingroup | (1.73) | (2.56) | (1,102) | (2.16) | (1.88) | (1,79) | (2.12) | (2.21) | (1,183) | (2.02) | (2.21) | (1,183) |
| | | | | | | | | | | | | |
| Acceptance of Outgroup | 0.70 | 1.90 | 7.11** | 1.86 | -0.74 | 31.29*** | 1.14 | 0.50 | 3.33 | 1.06 | 0.71 | 1.05 |
| | (2.07) | (2.18) | (1,103) | (2.05) | (2.06) | (1,77) | (2.13) | (2.49) | (1, 182) | (2.17) | (2.42) | (1,182) |

** $p < .01$, *** $p < .001$

Note      (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

Table 32

Mean Acceptance Scores for Each Status Group

| Scale | Status | | | F | Post Hoc |
|-------|---------|---------|---------|---|----------|
| | Low (L) | Equal (E) | High (H) | | |
| $n=$ | 54 | 89 | 41 | | |
| Acceptance Towards Ingroup | -0.43 | 1.22 | 1.29 | 13.01*** | L < E |
| | (2.25) | (1.82) | (2.14) | (2,181) | L < H |
| Acceptance of Outgroup | 1.30 | 1.05 | 0.20 | 3.04* | L > H |
| | (2.34) | (2.18) | (2.26) | (2,180) | |

$* p < .05$, $** p < .001$

Note   (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

(iii) For equal variances the Bonferroni Post Hoc test was used, for unequal variances the Dunnett T3 Post Hoc test was used.

Significant differences were found in the acceptance of the outgroup between the respondents of low, equal and high status, $F\ (2,\ 180) = 3.04$, $p < .05$. As predicted the low status group ($M = 1.30$) was more accepting to the outgroup than the high status group ($M = 0.20$).

Acceptance was also examined for the minority and majority groups the results are shown in Table 33. There were significant differences in acceptance between those in the minority group and those in the majority group. The minority group felt less accepted than the majority group, $F\ (1,183) = 19.22$, $p < .01$. The minority group was more accepting of the outgroup than the majority group, $F\ (1,182)\ = 26.20$, $p < .01$. Hypothesis 16 that minority group females (female engineers) would feel less accepted than minority group males (male nurses) was supported. The minority women felt less accepted ($M = -0.56$) than minority group males ($M = 0.74$), $F\ (1,74) = 5.70$, $p < .05$. Male majority group members (male engineers) were less accepting of the outgroup ($M = -0.74$) than the female majority group members (female nurses) ($M = 0.70$), $F\ (1,\ 107) = 11.60$, $p < .001$.

Correlations between acceptance of the ingroup, acceptance of the outgroup and other variables were analysed. The results are shown in Table 26 (p.137). Acceptance of the ingroup was positively related to the number of the ingroup in the immediate workgroup, $r = .30$, $p < .01$. The higher the numbers of the ingroup the more accepted the group felt. Acceptance towards the outgroup was related positively to the number of the outgroup in the workplace, $r = .36$, $p < .01$. The higher the number of outgroup members in the workplace the more accepting the group was to them. As predicted (hypothesis 15) acceptance was related to gender identification. Acceptance towards the outgroup was negatively related to the individual group opposition subscale of gender identification, $r = -.17$, $p < .05$, and negatively to age, $r = -.22$, $p < .01$. Low individual group opposition was related to low acceptance towards the outgroup. Acceptance towards the outgroup was lower in the older respondents. Acceptance of the ingroup was negatively related to the cognitive/emotional aspects of gender identification, $r = -.21$, $p < .01$, high gender identification (cognitive/emotional aspects) was related to less perceived acceptance of the ingroup. Acceptance of the ingroup was also positively related to the individual/group opposition subscale of identification, $r =$

.25, $p < .001$. High opposition between individual and group needs was related to low perceived acceptance of the ingroup.

## 6.4 Social Change Belief Systems – Achieving Positive Distinctiveness

### Total Sample

Table 34 shows the means and standard deviations for the ingroup social change beliefs. One-way ANOVA's were performed to test for differences in social change beliefs between the different groups in the study.

### Social Change Belief Systems and Gender

Table 34 shows the means and standard deviations for the social change belief scales, for achieving positive distinctiveness. There were significant differences between men and women on social change beliefs. From the overall sample women had lower social mobility beliefs than men, $F (1, 178) = 19.19, p < .001$, and higher social competition beliefs than men, $F (1, 176) = 101.50, p < .001$. Women also had higher social creativity scores than men, $F (1, 179) = 16.07, p < .001$.

### Social Change Belief Systems and Occupations

There were significant differences between male and female dominated occupations and between men and women on social change beliefs. Respondents in female dominated occupations scored lower on social mobility beliefs than those in male dominated occupations, $F (1,178) = 5.93, p < .05$. Respondents in female dominated occupations had lower social creativity scores than those in male dominated occupations, $F = (1, 179) 4.58, p < .05$.

Table 33

Mean Acceptance Scores for Minority and Majority Groups

| Scale | Minority | | | Majority | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N | Female 45 | Male 31 | $F$ | Female 74 | Male 36 | $F$ | Minority 76 | Majority 109 | $F$ |
| Acceptance Towards Ingroup | -0.56 (2.16) | 0.74 (2.56) | 5.70* (1,74) | 1.38 (1.74) | 1.19 (1.88) | 0.27 (1,107) | -0.03 (2.40) | 1.32 (1.78) | 19.22*** (1, 183) |
| Acceptance of Outgroup | 1.86 (2.05) | 1.90 (2.18) | .01 (1,73) | 0.70 (2.07) | -0.74 (2.06) | 11.60*** (1,107) | 1.88 (2.09) | 0.24 (2.17) | 26.20*** (1,183) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets
(ii) $n$'s may vary due to missing values

Table 34

Mean Ingroup Social Change Beliefs for each Sample

| Scale | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ |
| $n=$ | 61 | 22 | | 45 | 52 | | 106 | 74 | | 83 | 97 | |
| Ingroup Social Mobility | 0.64 | 0.55 | 0.06 | 0.33 | 1.91 | 30.23*** | 0.51 | 1.50 | 19.19*** | 0.61 | 1.18 | 5.93* |
| | (1.24) | (2.07) | (1,81) | (1.79) | (0.95) | (1,95) | (1.50) | (1.50) | (1,178) | (1.49) | (1.60) | (1,178) |
| Ingroup Social Competition | 0.78 | -1.11 | 11.60*** | 1.51 | -1.78 | 195.91*** | 1.10 | -1.59 | 101.50*** | 0.27 | -0.26 | 2.57 |
| | (2.36) | (1.78) | (1,79) | (1.18) | (1.13) | (1,95) | (1.97) | (1.38) | (I, 176) | (2.37) | (2.01) | (1,176) |
| Ingroup Social Creativity | -0.66 | -1.90 | 10.42** | 0.03 | -0.98 | 14.61*** | -0.37 | -1.25 | 16.07*** | -0.99 | -0.51 | 4.58* |
| | (1.61) | (1.34) | (1,81) | (1.40) | (1.21) | (1,95) | (1.56) | (1.31) | (I, 178) | (1.63) | (1.39) | (I,178) |

$* p < .05, ** p < .01, *** p < .001$

Note:  (i) standard deviations and degrees of freedom are in brackets

  (ii) $n$'s may vary due to missing values

## Social Change Belief Systems and Status

Differences in mean social change beliefs were also examined for each of the status groups. These results are shown in Table 35. There were significant differences in all three social change beliefs between the low equal and high groups.

There were significant differences between the status groups on social mobility beliefs, F (2, 176) = 16.54, $p < .01$. The low status group (M = 0.03) had significantly lower social mobility beliefs than both the equal (M = 1.24) and the high status groups (M = 1.67). Differences in social competition beliefs were significant, F (2,174) = 13.81, $p < .01$. The low status group (M = 0.98) had significantly higher social competition beliefs than both the equal (M = -0.21) and the high status groups (M = -1.46). The equal group had significantly higher social competition beliefs than the high status group. There was also significant differences in social creativity beliefs, F (2, 176) = 5.61, $p < .01$. The low status group (M = -0.20) had significantly higher social creativity beliefs than both the equal (M = -0.93) and the high status group (M = -1.18).

## Social Change Belief Systems and Minority and Majority Groups

Table 36 shows the means and standard deviations for the minority and majority groups. There were no significant differences between the majority and minority group on social creativity beliefs. The minority group had lower social mobility beliefs than the majority group, $F (1, 178) = 12.02, p < .01$, and higher social competition beliefs than the majority group, $F (1, 176) = 10.44, p < .01$.

Table 35

Mean Ingroup Social Change Beliefs for Each Status Group

| Scale | Status | | | | Post Hoc |
|---|---|---|---|---|---|
| | Low (L) | Equal (E) | High (H) | $F$ | |
| $n=$ | 55 | 97 | 27 | | |
| Ingroup Social Mobility | 0.03 | 1.24 | 1.67 | 16.54*** | L<E |
| | (1.67) | (1.45) | (0.76) | (2,176) | L<H |
| | | | | | |
| Ingroup Social Competition | 0.98 | -0.21 | -1.46 | 13.81*** | L>E |
| | (1.67) | (2.40) | (1.13) | (2,174) | L>H |
| | | | | | E>H |
| | | | | | |
| Ingroup Social Creativity | -0.20 | -0.93 | -1.18 | 5.61** | L>E |
| | (1.46) | (1.58) | (1.07) | (2,176) | L>H |

** $p< .01$, *** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

(iii) For equal variances the Bonferroni Post Hoc test was used, for unequal variances the Dunnett T3 Post Hoc test was used.

Table 36

Mean Ingroup Social Change Beliefs for Minority and Majority Groups

| Scale | Minority Group | | | Majority Group | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | F | Female | Male | F | Minority | Majority | F |
| n= | 45 | 22 | | 61 | 52 | | 67 | 113 | |
| Ingroup Social Mobility | 0.33 | 0.55 | 0.19 | 0.64 | 1.91 | 36.48*** | -.40 | 1.22 | 12.02*** |
| | (1.79) | (2.07) | (1, 65) | (1.24) | (0.95) | (1,111) | (1.87) | (1.28) | (1,178) |
| Ingroup Social Competition | 1.51 | -1.11 | 51.31*** | 0.78 | -1.78 | 50.92*** | 0.65 | -0.42 | 10.44*** |
| | (1.18) | (1.78) | (1,65) | (2.36) | (1.13) | (1,109) | (1.86) | (2.28) | (1, 176) |
| Ingroup Social Creativity | 0.04 | -1.90 | 28.95*** | -0.66 | -0.98 | 1.36 | -0.60 | -0.81 | 0.79 |
| | (1.40) | (1.34) | (1,65) | (1.61) | (1.21) | (1,111) | (1.65) | (1.44) | (1, 178) |

*** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

## *Social Change Belief Systems and Identification*
### *Total Sample*

As shown in Table 37 a positive correlation was found between gender identification as a full scale and ingroup social mobility, $r = .21$, $p < .05$, and ingroup social creativity, $r = .30$, $p < .01$. High gender identification was related to high social mobility and high social creativity beliefs. Hypothesis 28 that gender identification would be related to ingroup social competition beliefs was not supported on the full scale, $r = -.09$, $p > .05$. The individual group opposition subscale was negatively correlated with ingroup social competition (achieving status), $r = -.27$, $p < 01$. Low individual group opposition was related to low beliefs in social competition to achieve status

Table 37

Correlations between Gender Identification Scales and Social Change Beliefs (total sample $N = 207$).

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1. Gender Identification Full Scale | - | | |
| 2. Gender Identification Cognitive/Emotional e | .92*** | - | |
| 3. Gender Identification Individual/Group Opposition | .36*** | -.03 | - |
| 4. Ingroup Social Mobility | .21* | .15 | .13 |
| 5. Ingroup Social Creativity | .30** | .44** | -.13 |
| 6. Ingroup Social Competition (achieving status) | -.09 | .02 | -.27** |

$* p < .05$, $** p < .01$, $*** p < .001$,

### *Gender Groups*

Table 38 shows the correlations between gender identification and social change beliefs for men and women. For the male sample gender identification was positively

related to social mobility $r = .35, p < .01$, high gender identification was associated with high social mobility beliefs. Gender identification was also positively correlated with social creativity, $r = .29, p < .05$, high gender identification was associated with high social creativity beliefs. Identification was negatively correlated with social competition, $r = .25, p < .05$, high gender identification was associated with low social competition beliefs.

For the females gender identification was positively related to ingroup social creativity, $r = .28, p < .01$, high gender identification was associated with high social creativity beliefs. Social mobility was correlated with individual/group opposition, $r = .32, p < .001$, individual/group opposition was associated with low social mobility beliefs. The cognitive/emotional subscale was positively related to social competition, $r = .23, p < .05$, high identification on cognitive/emotional aspects was associated with high social competition beliefs.

## Status

Table 39 shows the correlations between gender identification and social change beliefs for each of the status groups. For the low status group gender identification was positively related to ingroup social creativity, $r = .28, p < .05$. High gender identification was associated with high social creativity beliefs. Individual/group opposition was negatively related to social competition $r = -.32, p < .05$, low opposition between individual and group needs was associated with low social competition beliefs. Hypothesis 20 that gender identification would be negatively related to social mobility was not supported, $r = .08, p > .05$.

For the respondents who saw themselves of equal status gender identification was positively related to social mobility, $r = .32, p < .01$, and social creativity, $r = .21, p < .05$. High gender identification was associated with high social mobility and high social creativity beliefs.

Table 38

Correlations between Gender Identification Scales and Ingroup Social Change Beliefs (men and women)

| Variable n= | Male 75 | | | Female 105 | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| 1. Gender Identification full scale | - | | | | | |
| 2. Gender Identification Cognitive/Emotional | .93** | - | | .91*** | - | |
| 3. Gender Identification Individual/Group Opposition | .48*** | .14 | - | .29*** | -.13 | - |
| 4. Ingroup Social Mobility | .35** | .38*** | .13 | -.01 | -.14 | .32*** |
| 5. Ingroup Social Creativity | .29* | .42** | -.18 | .28** | .35** | -.15 |
| 6. Ingroup Social Competition (achieving status) | -.25* | -.16 | -.20 | .17 | .23* | -.15 |

* $p < .05$, ** $p < .01$, *** $p < .001$,

For the high status group hypothesis 20 that gender identification would be negatively related to social mobility beliefs was not supported. Individual/group opposition was however positively related to social mobility beliefs, $r = .46, p < .05$. Opposition between the individual and group was associated with low social competition beliefs for the high status group.

## Majority and Minority Groups

Table 40 shows the relationship between gender identification and social change beliefs for the majority and minority groups. For the minority group gender identification was positively related to ingroup social creativity, $r = .47, p < .001$ and ingroup social competition, $r = .40, p < .001$. High gender identification was related to high social creativity and social competition beliefs. Individual/group Opposition was positively correlated with ingroup social mobility, $r = .28, p < .05$. High individual/group opposition was related to low social mobility beliefs.

For the majority group gender identification was positively correlated with social mobility, $r = .46, p < .001$. High gender identification was related to high social mobility beliefs. Gender identification was negatively related to social competition (achieving status), $r = -.39, p < .001$. High gender identification was related to low social competition beliefs.

Table 39

Correlations between Gender Identification Scales and Ingroup Social Change Beliefs for Each Status Group

| Variable | Low Status | | | Equal Status | | | High Status | | |
|---|---|---|---|---|---|---|---|---|---|
| n= | 55 | | | 97 | | | 27 | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Gender Identification Full scale | - | | | - | | | - | | |
| Gender Identification Cognitive/Emotional | .92** | - | | .93** | - | | .93*** | - | |
| Gender Identification Individual/Group Opposition | .39** | .00 | - | .45*** | .10 | - | .41** | .11 | - |
| Ingroup Social Mobility | .08 | .06 | .07 | .32** | .29** | .20 | .27 | .21 | .46* |
| Ingroup Social Creativity | .28* | .35** | -.14 | .21* | .27** | -.07 | .15 | .29 | -.24 |
| Ingroup Social Competition (achieving status) | .11 | .21 | -.32* | -.15 | -.13 | -.01 | .04 | .01 | -.11 |

$* p < .05, ** p < .01, *** p < .001$
Note: n's may vary due to missing values

Table 40

Correlations between Gender Identifications Scales and Ingroup Social Change Beliefs for Majority and Minority Groups.

| Variable | Minority 67 | | | Majority 113 | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| 1. Gender Identification Full Scale | - | | | - | | |
| 2. Gender Identification Cognitive/Emotional | .89*** | - | | .94*** | - | |
| 3. Gender Identification Individual/Group Opposition | .34** | -.13 | - | .44*** | .12 | - |
| 3. Ingroup Social Mobility | -.04 | -.16 | .28* | .46*** | .48*** | .13 |
| 4. Ingroup Social Creativity | .47*** | .62*** | -.21 | .03 | .07 | -.11 |
| 5. Ingroup Social Competition (achieving status) | .40** | .59*** | -.27* | -.35*** | -.39*** | -.03 |

** $p < .01$, *** $p < .001$

## Social Change Belief Systems, Legitimacy and Stability

Social change beliefs were also compared according to the respondents' beliefs about legitimacy and stability. The results for this analysis are shown in Table 41. As predicted (Hypothesis 21) respondents who saw the intergroup situation as legitimate had higher social mobility beliefs than those who saw the situation as illegitimate, $F = 7.14, p < .01$. Hypothesis 26 that respondents who see the intergroup situation as illegitimate would have higher social competition beliefs than those who saw the situation as legitimate was not supported, $F = 0.46, p > .05$.

Hypotheses 22, 24 and 27 that there would be differences in social change beliefs among respondents who saw the intergroup situation as stable and unstable were not supported. There were no differences in social change beliefs between respondents who saw the situation as stable or unstable.

## Social Change Belief Systems and Acceptance

Table 42 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup and social change beliefs, for the total sample. As predicted (Hypothesis 19) acceptance of the ingroup was positively related to ingroup social mobility, $r = .25, p < .01$. High ingroup social mobility beliefs were related to perceived acceptance of the ingroup. Acceptance towards the outgroup was negatively related to social mobility beliefs, $r = -.17, p < .05$. High acceptance of the outgroup was associated with low ingroup social mobility beliefs. As predicted (hypothesis 23) ingroup social creativity was negatively related to acceptance of the ingroup, $r = -.18, p < .05$. Low acceptance of the ingroup is associated with high belief in social creativity. As predicted (hypothesis 25) ingroup social competition (achieving status) was negatively related to acceptance towards the outgroup, $r = -.19, p < .05$. High social competition beliefs were associated with less acceptance of the outgroup.

Table 41

Mean Ingroup Social Change Beliefs for Legitimacy and Stability Beliefs

| Scale | Legitimacy Beliefs | | | Stability Beliefs | | |
|---|---|---|---|---|---|---|
| | Legitimate | Illegitimate | $F$ | Stable | Unstable | $F$ |
| $n=$ | 94 | 82 | | 132 | 41 | |
| Ingroup Social Mobility | 1.25 | 0.63 | 7.14** | 1.00 | 0.73 | 0.96 |
| | (1.44) | (1.62) | (1,174) | (1.61) | (1.41) | (1,171) |
| Ingroup Social Competition | -0.17 | 0.06 | 0.46 | -0.14 | 0.11 | 0.41 |
| | (2.40) | (1.90) | (1,172) | (2.21) | (2.04) | (1,171) |
| Ingroup Social Creativity | -0.91 | -0.55 | 2.37 | -0.69 | -0.97 | 1.05 |
| | (1.60) | (1.43) | (1,174) | (1.57) | (1.42) | (1,173) |

** $p < .01$

Note: (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

Table 42

Correlations between Acceptance and Ingroup Social Change Beliefs (*N* =207)

| Variable | 1 | 2 |
|---|---|---|
| 1. Acceptance of the ingroup | - | |
| 2. Acceptance towards the outgroup | .13 | - |
| 3. Ingroup Social Mobility | .25** | -.17* |
| 4. Ingroup Social Creativity | -.18* | .09 |
| 5. Ingroup Social Competition (achieving status) | -.14 | -.19* |

\* *p* < .05, \*\* *p*< .01,
Note: n's may vary due to missing values

Table 43 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup and social change beliefs for each gender group. For the men in the sample acceptance towards the outgroup was negatively related to ingroup social mobility, *r* = -.27, *p* < .05. High beliefs in social mobility was associated with low acceptance of the outgroup. For the women in the sample acceptance of the ingroup was positively related to social mobility, *r* = .42, *p* < .001. Perceived acceptance of the ingroup was associated with high social mobility beliefs.

Table 43

Correlations between Acceptance and Ingroup Social Change Beliefs (men and women)

| *n*= | Male 59 | | Female 118 | |
|---|---|---|---|---|
| Variable | 1 | 2 | 1 | 2 |
| 1. Acceptance of the ingroup | - | | - | |
| 2. Acceptance towards the outgroup | .21 | - | .09 | - |
| 3. Ingroup Social Mobility | -.08 | -.27* | .42*** | -.02 |
| 4. Ingroup Social Creativity | -.12 | -.14 | -.18 | .14 |
| 5. Ingroup Social Competition (achieving status) | -.17 | .14 | -.06 | .09 |

\* *p* < .05, \*\* *p*< .01, \*\*\* *p* < .001
Note: n's may vary due to missing values

Table 44 shows the correlations between acceptance of the ingroup and outgroup and social change beliefs for each status group. For the low status group acceptance of the ingroup was positively related to ingroup social mobility, *r* = .35, *p* < .01 and

negatively related to ingroup social creativity, $r = -.31$, $p < .05$. For the low status respondents high acceptance of the ingroup was related to high social mobility beliefs and low social competition beliefs. For the respondents who saw themselves as of equal status acceptance towards the outgroup was positively related to perceived acceptance of the ingroup, $r = .56$, $p < .05$. For the high status respondents acceptance of the ingroup or outgroup was not associated with social change beliefs.

Table 45 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup for the minority group and the majority group. For the minority group acceptance of the ingroup is negatively related to ingroup social creativity, $r = -.38$, $p < .01$ and social competition, $r = -.37$, $p < .01$. High acceptance of the ingroup is associated with low social creativity and social competition beliefs. Among the majority group acceptance towards the outgroup is positively related to acceptance of the ingroup, $r = .39$, $p < .001$.

Table 44

Correlations between Acceptance and Ingroup Social Change Beliefs for Each Status Group

| Variable<br>n= | Low Status<br>53 | | Equal Status<br>87 | | High Status<br>19 | |
|---|---|---|---|---|---|---|
| 1. Acceptance of the ingroup | - | | - | | - | |
| 2. Acceptance towards the outgroup | -.19 | - | .56*** | - | .10 | - |
| 3. Ingroup Social Mobility | .35** | -.15 | -.02 | -.09 | .19 | -.24 |
| 4. Ingroup Social Creativity | -.31* | .09 | .02 | .04 | -.23 | .26 |
| 5. Ingroup Social Competition (achieving status) | -.22 | .15 | .05 | .12 | -.19 | .32 |

* $p < .05$, ** $p < .01$, *** $p < .001$
Note: n's may vary due to missing values

Table 45

Correlations between Acceptance and Ingroup Social Change Beliefs for Majority and Minority Groups.

| Variable | Minority 67 | | Majority 93 | |
|---|---|---|---|---|
| | 1 | 2 | 1 | 2 |
| 1. Acceptance of the ingroup | - | | - | |
| 2. Acceptance towards the outgroup | .15 | - | .39*** | - |
| 3. Ingroup Social Mobility | .22 | -.13 | .14 | -.04 |
| 4. Ingroup Social Creativity | -.38** | .04 | .04 | .09 |
| 5. Ingroup Social Competition (achieving status) | -.37** | -.08 | .16 | .19 |

** $p < .01$, *** $p < .001$
Note: n's may vary due to missing values

In order to examine the relative importance of the variables determining each social change belief a stepwise regression analysis was performed, the results are shown in Table 46. For the total sample the results indicated that the best predictor of ingroup social mobility beliefs was gender, $\beta = .21$, $p < .01$. Women were lower in social mobility beliefs than men. The second best predictor of ingroup social mobility beliefs was discrimination, $\beta = -.20$, $p < .05$. Few experiences of discrimination were associated with high social mobility beliefs. The best predictor of ingroup social creativity was gender identification, $\beta = .27$, $p < .01$. High gender identification was associated with high social creativity beliefs. The second best predictor of social creativity beliefs was gender, $\beta = -.25$, $p < .01$. Women were higher in social creativity beliefs than men. Gender was also the best predictor of social competition beliefs $\beta = -.51$, $p < .001$, women had higher social competition beliefs than men. The second best predictor of social competition beliefs was discrimination, $\beta = .17$, $p < .05$, more experiences of discrimination was associated with higher social competition beliefs.

Table 46

Standardized Regression Coefficients between Ingroup Social Change Beliefs and Predictor Variables (Total Sample $N= 207$)

| Social Change Beliefs: | Predictor Variables | | | | | | | $R^2$ | $F$ |
|---|---|---|---|---|---|---|---|---|---|
| | Identification | Legitimacy | Stability | Acceptance Ingroup | Acceptance Outgroup | Discrimination | Gender | | |
| Ingroup Social Mobility | .15* (.03) | -.16 (.03) | .00 (.00) | .17* (.03) | -.13 (.02) | -.20* (.04) | .21** (.05) | .27 | 7.94** (1,139) |
| Ingroup Social Creativity | .27** (.08) | .09 (.01) | -.13 (.02) | -.07 (.00) | .06 (.00) | .16 (.02) | -.25** (.07) | .21 | 10.19** (1,139) |
| Ingroup Social Competition | .03 (.00) | .06 (.00) | .00 (.00) | -.02 (.00) | .08 (.01) | .17* (.03) | -.51*** (.27) | .35 | 51.67*** (1,139) |

* $p < .05$, ** $p < .01$, *** $p < .001$
Note: partial $r^2$ are shown in brackets.

Table 47 shows the results of the open-ended questions on which strategies are used to improve the general situation for the ingroup in the workplace. For the female dominated sample, strategies that were categorized as social competition were the most commonly mentioned by both men and women (30.7% and 42% respectively). Examples of social competition strategies included encouraging male nurses to apply for promotions or positions and campaigning for increased childcare facilities. Both men and women also mentioned strategies that were intended to improve the situation of nursing as a whole, which included campaigning for higher pay. These strategies were seen to improve the situation of both men and women. Men also mentioned use of social mobility strategies that focused on individual improvement, more than did women. A common social mobility strategy mentioned by both men and women was studying for extra qualifications.

For the respondents in male dominated occupations both men and women supported social competition strategies for the profession which included efforts to raise the profile of engineering as a whole. The most common strategy for women was social mobility, which was characterized by demphasizing gender and focusing on doing the best job possible. Men in male dominated occupations most commonly did not actually use strategies to improve the situation for their group.

Table 47

Strategies Used to Improve the General Situation for the Ingroup

| Social Change Strategies | Female Dominated Occupations | | Male Dominated Occupations | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| *n* = | 13 | 30 | 20 | 24 |
| Social Competition for gender | 23% | 20% | 0% | 8.3% |
| Social Competition for profession | 7.7% | 36.7% | 20% | 29.2% |
| Social Support | 15.4% | 20% | 10% | 12.5% |
| Social Creativity | 7.7% | 16.67% | 15% | 0% |
| Social Mobility | 30.7% | 10% | 20% | 37.5% |
| None | 7.7% | 10% | 30% | 8.3% |
| Other | 7.7% | 10% | 30% | 12.5% |

Table 48 shows how each gender feels the outgroup reacts to their strategies for improving their status. The majority of male and females in female dominated occupations felt that the outgroup was supportive of their strategies. In male dominated occupations, the majority of women felt that men were supportive of their strategies. More women felt that their strategies were reacted to with competition than men, this included portraying women who joined women's groups as "hairy-legged man haters" or lesbians.

Table 48

Reactions of the Outgroup to Social Change Strategies

| Reactions to Strategies | Female Dominated Occupations | | Male Dominated Occupations | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| n= | 13 | 22 | 12 | 19 |
| Support | 53.8% | 54.5% | 25% | 63.2% |
| Competition | 38.5% | 23% | 0% | 26% |
| Indifferent | 0% | 22.7% | 16.7% | 15.8% |
| Other | 0% | 0% | 41.7% | 5.3% |
| Don't Know | 15.4% | 0% | 25% | 0% |

## 6.5 Social Change Belief Systems –
## Maintaining Positive Distinctiveness
### *Total Sample*

Table 49 shows the means and standard deviations for the outgroup social change beliefs. One-way ANOVA's were performed to test for differences in social change beliefs between the different groups in the study.

## Social Change Beliefs and Gender

Table 49 shows the means and standard deviations for the social change beliefs for maintaining positive distinctiveness. There were significant differences between male and female dominated occupations and between men and women on social change beliefs. From the overall sample women showed higher support for social mobility beliefs in the outgroup than men, $F(1,179) = 14.40$, $p < .01$, and higher social competition (maintaining status) beliefs than men, $F(1, 181) = 9.43$, $p < .01$. Women showed lower support for social competition beliefs in the outgroup than men, $F(1,162) = 4.92$, $p < .05$, and lower support for social creativity beliefs in the outgroup than men, $F(1,179) = 11.60$, $p < .01$.

## Social Change Beliefs and Occupations

Respondents in female dominated occupations showed lower support for social mobility beliefs in the outgroup than respondents in male dominated occupations, $F(1,179) = 4.31$, $p < .05$. Respondents in female dominated occupations also had lower social competition (maintaining) beliefs than those in male dominated occupations, $F = (1, 162)$ $40.38$, $p < .01$.

## Social Change Beliefs and Status

Differences in mean social change beliefs were also examined for each of the status groups. These results are shown in Table 50. There were significant differences between the status groups in their support of social mobility beliefs in the outgroup, $F(2, 177) = 4.69$, $p < .05$. The low status group ($M = 1.50$) showed higher support of social mobility beliefs in the outgroup, than the high status group ($M = 0.40$). Status groups were also different in their support of social competition in the outgroup, $F(2, 160) = 6.79$, $p < .01$. The equal status group ($M = -1.40$) showed lower support for

Table 49

Mean Outgroup Social Change Beliefs for Each Sample

| Outgroup Social Change | Female Dominated Occupations | | | Male Dominated Occupations | | | Combined Sample | | | Occupations (dominated by) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beliefs | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ | Female | Male | $F$ |
| $n=$ | 63 | 23 | | 45 | 52 | | 108 | 75 | | 86 | 97 | |
| Outgroup Social Mobility | 1.14 | -0.56 | 14.46*** | 1.67 | 0.83 | 8.97** | 1.36 | 0.41 | 14.40*** | 0.69 | 1.21 | 4.31* |
| | (2.00) | (1.27) | (1, 84) | (1.01) | (1.60) | (1,93) | (1.68) | (1.63) | (1, 179) | (1.98) | (1.42) | (1,179) |
| Outgroup Social Competition | -1.27 | 0.61 | 9.23** | -1.21 | -0.84 | 1.06 | -1.25 | -0.62 | 4.92* | -1.04 | -1.01 | .01 |
| | (1.62) | (2.48) | (1,69) | (1.34) | (1.97) | (1, 91) | (1.50) | (2.10) | (1, 162) | (1.84) | (1.71) | (1,162) |
| Outgroup Social Creativity | -1.65 | -0.98 | 3.92* | -1.61 | -0.84 | 5.94* | -1.63 | -0.89 | 11.60*** | -1.47 | -1.19 | 1.55 |
| | (1.15) | (1.88) | (1,84) | (1.73) | (1.33) | (1,93) | (1.41) | (1.51) | (1, 178) | (1.41) | (1.56) | (1, 179) |
| Social Competition | -0.80 | -1.81 | 9.23** | 0.76 | -0.36 | 23.51*** | -0.15 | -0.80 | 9.43** | -1.07 | 0.16 | 40.38*** |
| Maintaining Status | (1.29) | (1.31) | (1, 84) | (1.31) | (0.96) | (1, 95) | (1.51) | (1.26) | (1, 181) | (1.36) | (1.26) | (1, 181) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets.

(ii) $n$'s may vary due to missing values.

outgroup social competition, than the high status group ($M$ = -0.26). Social competition beliefs (maintaining the status) were also different between the status groups, $F$ (2, 179) = 26.24, $p$ < .01. The low status group ($M$ = 0.92) had higher social competition (maintaining status) beliefs than the equal group ($M$ = -0.85) and the high status group ($M$ = -0.60).

## Social Change Beliefs and Majority and Minority Groups

As shown in Table 51 there was one significant difference between the minority group and the majority group. The majority group had lower social competition (maintaining the status) beliefs than the minority group, $F$ (1, 181) = 5.09, $p$ < .01.

## Social Change Beliefs and Gender Identification
### Total Sample

As shown in Table 52 (p. 174) a positive correlation was found between gender identification as a full scale and ingroup social competition (maintaining status), $r$ = .22, $p$ < .01. High gender identification was related to high social competition for maintaining status. A negative correlation was found between gender identification and outgroup social creativity, $r$ = -.29, $p$ < .01. High gender identification was related to low support of social creativity beliefs in the outgroup. The Cognitive/Emotional gender identification subscale was positively correlated with outgroup social mobility, $r$ = .23, $p$ < .05. High identification on the emotional and cognitive aspects of group membership was related to high support of social mobility beliefs in the outgroup. Hypothesis 36 that gender identification would be negatively related to outgroup social competition was not supported, $r$ = .02, $p$ > .05.

Table 50

Mean Outgroup Social Change Beliefs for each Status Group

| | Low 37 | Equal 97 | High 48 | $F$ | |
|---|---|---|---|---|---|
| Outgroup Social Mobility | 1.50 (1.07) | 1.08 (1.93) | 0.40 (1.49) | 4.69** $(2,177)$ | L>H |
| Outgroup Social Competition | -1.14 (1.63) | -1.40 (1.55) | -0.26 (1.98) | 6.79*** $(2,160)$ | E<H |
| Outgroup Social Creativity | -1.30 (1.72) | -1.50 (1.52) | -0.95 (1.21) | 2.19 $(2,177)$ | |
| Social Competition Maintaining Status | 0.92 (1.12) | -0.85 (1.36) | -.60 (1.22) | 26.24*** $(2, 179)$ | L> E L>H |

** $p < .01$, *** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets.

(ii) $n$'s may vary due to missing values.

(iii) For equal variances the Bonferroni Post Hoc test was used, for unequal variances the Dunnett T3 Post Hoc test was used.

Table 51

Mean Outgroup Social Change Beliefs for the Minority and Majority Group

| Outgroup Social Change Beliefs | Minority Group | | | Majority Group | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Female | Male | $F$ | Female | Male | $F$ | Minority | Majority | $F$ |
| $n=$ | 45 | 23 | | 63 | 52 | | 68 | 115 | |
| Outgroup Social Mobility | 1.67 | -0.56 | 61.06*** | 1.14 | 0.83 | 0.81 | 0.90 | 1.00 | 0.16 |
| | (1.01) | (1.27) | (1, 64) | (2.00) | (1.60) | (1, 113) | (1.54) | (1.83) | (1,179) |
| Outgroup Social Competition | -1.21 | 0.61 | 9.88** | -1.27 | -0.84 | 1.64 | -0.89 | -1.08 | 0.41 |
| | (1.34) | (2.48) | (1,50) | (1.62) | (1.97) | (1, 110) | (1.71) | (1.79) | (1,162) |
| Outgroup Social Creativity | -1.61 | -0.98 | 1.87 | -1.65 | -0.84 | 12.01** | -1.40 | -1.28 | 0.21 |
| | (1.73) | (1.88) | (1,64) | (1.15) | (1.33) | (1, 113) | (1.80) | (1.29) | (1, 179) |
| Social Competition (Maintaining Status) | 0.76 | -1.81 | 58.51*** | -0.80 | -0.36 | 4.25* | -0.11 | -0.60 | 5.09* |
| | (1.31) | (1.31) | (1, 66) | (1.29) | (0.96) | (1, 113) | (1.79) | (1.17) | (1, 181) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

Table 52

Correlations between Gender Identification Scales and Outgroup Social Change Beliefs
*N* = 207).

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1.  Gender Identification full scale | - | | |
| 2.  Gender Identification Cognitive/Emotional | .92*** | - | |
| 3.  Gender Identification Individual/Group Opposition | .36*** | -.03 | - |
| 4.  Outgroup Social Mobility | .15 | .23* | -.12 |
| 5.  Outgroup Social Creativity | -.29** | -.19* | -.34** |
| 6.  Outgroup Social Competition | .02 | .05 | -.07 |
| 7.  Ingroup Social Competition (maintaining status) | .22** | .33** | -.18* |

* $p < .05$, ** $p < .01$, *** $p < .001$,

Note: n's may vary due to missing values.

### Gender Groups

The relationships between gender identification and social change beliefs were also explored separately for each gender group; the correlation results are shown in Table 53. For men in the sample gender identification was positively relation to outgroup social mobility $r = .45$, $p < .001$, and ingroup social competition (maintaining status) $r = .46$, $p < .001$.  High gender identification was associated with high support of social mobility strategies in the outgroup, and high ingroup social competition beliefs. Gender identification was negatively related to outgroup social competition, $r = .26$, $p <$ .05.  High gender identification was associated with low support of outgroup social competition strategies.  For the women in the sample gender identification was related to ingroup social competition (maintaining status), $r = .40$, $p < .001$.

Table 53

Correlations between Gender Identification Scales and Outgroup Social Change Beliefs for men and women.

| Variable  n= | Male  75 | | | Female  105 | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| 1. Gender Identification full scale | - | | | | | |
| 2. Gender Identification Cognitive/Emotional | .93** | - | | .91*** | - | |
| 3. Gender Identification Individual/Group Opposition | .48*** | .14 | - | .29*** | -.13 | - |
| 4. Outgroup Social Mobility | .45*** | .52*** | .00 | .14 | .15 | -.05 |
| 5. Outgroup Social Competition | -.26* | -.24 | -.16 | .01 | .04 | -.06 |
| 6. Outgroup Social Creativity | -.20 | -.13 | -.38*** | -.16 | -.09 | -.16 |
| 7. Ingroup Social Competition (maintaining status) | .46*** | .57*** | -.04 | .40*** | .53*** | -.30** |

* $p < .05$, ** $p < .01$, *** $p < .001$,

## Status

The relationship between gender identification and outgroup social change beliefs was also examined for the three status groups. The results are shown in Table 54. As predicted (Hypothesis 35) for the low status group, gender identification was negatively related to outgroup social creativity, $r = -.40$, $p < .05$. High gender identification is associated with low support of social creativity beliefs in the outgroup. Contrary to hypothesis 31 for low status respondents gender identification was not related to outgroup social mobility beliefs, $r = -.20$, $p > .05$.

For respondents of equal status gender identification was positively related to outgroup social mobility beliefs, $r = .29$, $p < .01$, which was in the opposite direction to that predicted in hypothesis 31. High gender identification was associated with high social mobility beliefs. Gender identification was also related to ingroup social competition (maintaining status), $r = .46$, $p < .001$. High gender identification was associated with high ingroup social competition beliefs. Individual/group opposition was negatively related to outgroup social creativity, $r = -.24$, $p < .05$, and outgroup social competition, $r = -.29$, $p < .01$. Low opposition between individual and group needs was associated with low support of social creativity and social competition beliefs in the outgroup.

For the high status group gender identification was not related to outgroup social change beliefs. Hypothesis 30 that gender identification would positively related to outgroup social mobility beliefs was not supported, $r = -.12$, $p > .05$. Hypothesis 34 that gender identification would be positively related to outgroup social creativity was not supported, $r = .08$, $p > .05$.

## Majority and Minority Groups

The relationship between gender identification and social change beliefs was analyzed separately for the majority and minority groups. The results are shown in table 55. For the minority group gender identification was positively correlated with outgroup social mobility, $r = .38$, $p < .01$, and ingroup social competition (maintaining

status), $r = .42$, $p < .001$. High gender identification was associated with high support of social mobility beliefs in the outgroup and high social competition beliefs. Gender identification was also negatively correlated with outgroup social creativity, $r = -.37$, $p < .01$. High gender identification was associated with low support of social creativity beliefs in the outgroup.

For the majority group gender identification was positively related to social competition (maintaining status), $r = .31$, $p = < .01$. High gender identification was associated with high social competition beliefs. The individual/group opposition subscale was negatively correlated with outgroup social creativity, $r = -.25$, $p < .01$. High opposition between individual and group needs was associated with high social creativity beliefs.

## Social Change Beliefs, Legitimacy and Stability

Social change beliefs were also compared for those holding different legitimacy and stability beliefs. As predicted (Hypothesis 39) respondents who saw the intergroup situation as legitimate showed less support for social competition beliefs in the outgroup than those who saw the situation as illegitimate, $F(1,160) = 6.96$, $p < .01$. In the opposite direction to that predicted (Hypothesis 37) respondents who saw the situation as legitimate had lower beliefs in social competition (maintaining the status) than those who saw the situation as illegitimate, $F(1,178) = 10.97$, $p < .01$. Hypothesis 32 that respondents who see the situation as legitimate will have higher support for outgroup social creativity beliefs was not supported, $F(1,160) = 2.40$, $p > .05$. The results are shown in Table 56.

Hypothesis 38 that respondents who see the situation as unstable will have higher social competition (maintaining status) beliefs than respondents who see the intergroup situation as stable, was not supported, $F(1, 175) = 2.64$, $p > .05$. Hypothesis 40 that respondents who see the intergroup situation as stable would have lower support for outgroup social competition than those who see it as stable was not supported, $F(1, 157) = 1.23$, $p > .05$.

Table 54

Correlations between Gender Identification Scales and Outgroup Social Change Beliefs for Each Status Group

| Variable | Low Status | | | Equal Status | | | High Status | | |
|---|---|---|---|---|---|---|---|---|---|
| $n=$ | 37 | | | 97 | | | 48 | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Gender Identification Full scale | - | | | - | | | - | | |
| Gender Identification Cognitive/Emotional | .92** | - | | .93** | - | | .93*** | - | |
| Gender Identification Individual/Group Opposition | .39** | .00 | - | .45*** | .10 | - | .41** | .11 | - |
| Outgroup Social Mobility | -.20 | -.10 | -.24 | .29** | .29** | .08 | -.12 | -.06 | -.18 |
| Outgroup Social Competition | .14 | .12 | .10 | -.07 | .02 | -.29** | -.01 | -.10 | .11 |
| Outgroup Social Creativity | -.40* | -.43** | -.18 | -.11 | -.05 | -.24* | .05 | .08 | -.23 |
| Ingroup Social Competition (maintaining status) | -.25 | -.14 | -.28 | .46*** | .50*** | .05 | .00 | .09 | -.19 |

* $p < .05$, ** $p < .01$, *** $p < .001$
Note: n's may vary due to missing values

Table 55

Correlations between Gender Identification Scales and Outgroup Social Change Beliefs for Majority and Minority Groups.

| Variable | Minority 67 | | | Majority 113 | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| 1. Gender Identification Full Scale | - | | | - | | |
| 2. Gender Identification Cognitive/Emotional | .89*** | - | | .94*** | - | |
| 3. Gender Identification Individual/Group Opposition | .34** | -.13 | - | .44*** | .12 | - |
| 3. Outgroup Social Mobility | .38** | .51*** | -.16 | .11 | .09 | .02 |
| 4. Outgroup Social Competition | -.14 | -.15 | .01 | -.01 | .02 | -.13 |
| 5. Outgroup Social Creativity | -.37** | -.32** | -.22 | .08 | .17 | -.25** |
| 6. Ingroup Social Competition (maintaining status) | .42*** | .64*** | -.32** | .28** | .31*** | -.04 |

** $p < .01$, *** $p < .001$

Hypothesis 33 that respondents who see the intergroup situation as stable would have higher support for outgroup social creativity beliefs than respondents who see the situation as unstable was not supported, $F (1, 2.48) = 2.48, p > .05$.

## Social Change Beliefs and Acceptance

Table 57 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup and outgroup social change beliefs, for the total sample. Acceptance of the ingroup was negatively related to ingroup social competition (maintaining status), $r = -.32, p < .001$. High acceptance of the ingroup is associated with low ingroup social competition beliefs. Acceptance towards the outgroup was negatively related to outgroup social creativity, $r = -.19, p < .05$. High acceptance of the outgroup is associated with not supporting social creativity beliefs in the outgroup. Hypothesis 29 that acceptance would be related to outgroup social mobility beliefs was not supported, $r = .02, p > .05$.

Table 57

Correlations between Acceptance and Outgroup Social Change Beliefs ($N = 207$)

| Variable | 1 | 2 |
|---|---|---|
| 1. Acceptance of the ingroup | - | |
| 2. Acceptance towards the outgroup | .13 | - |
| 3. Outgroup Social Mobility | .02 | .09 |
| 4. Outgroup Social Competition | .11 | -.15 |
| 5. Outgroup Social Creativity | .08 | -.19* |
| 6. Ingroup Social Competition (maintaining status) | -.32*** | .01 |

$* p < .05, *** p < .001$.
Note: n's may vary due to missing values

Table 56

Mean Social Change Beliefs for Legitimacy and Stability Beliefs

| Scale | Legitimacy Beliefs | | | Stability Beliefs | | |
|---|---|---|---|---|---|---|
| | Legitimate | Illegitimate | $F$ | Stable | Unstable | $F$ |
| $n=$ | 97 | 83 | | 131 | 46 | |
| Outgroup Social Mobility | 1.14 | 0.79 | 1.89 | 0.95 | 0.97 | .00 |
| | (1.88) | (1.47) | (1,176) | (1.76) | (1.63) | (1, 173) |
| Outgroup Social Competition | -1.35 | -0.64 | 6.96** | -1.11 | -0.76 | 1.23 |
| | (1.53) | (1.91) | (1, 160) | (1.85) | (1.55) | (1,157) |
| Outgroup Social Creativity | -1.48 | -1.14 | 2.40 | -1.43 | -1.02 | 2.48 |
| | (1.53) | (1.45) | (1,176) | (1.49) | (1.55) | (1, 173) |
| Social Competition | -0.75 | -0.05 | 10.97** | -0.55 | -0.14 | 2.64 |
| (Maintaining Status) | (1.41) | (1.42) | (1, 178) | (1.46) | (1.43) | (1, 175) |

** $p < .01$,

Note: (i) standard deviations and degrees of freedom are in brackets

(ii) $n$'s may vary due to missing values

Table 58 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup and outgroup social change beliefs for each gender group. For the men in the sample acceptance towards the outgroup was negatively related to outgroup social creativity, $r = -.38$, $p < .01$. High acceptance of the outgroup (women) was related to low support of social creativity beliefs among women. For the women in the sample acceptance of the ingroup was negatively related to social competition (maintaining status), $r = -.37$, $p < .001$. High feelings of acceptance were associated with low social competition beliefs.

Table 58

Correlations between Acceptance and Outgroup Social Change Beliefs (men and women)

| | Male 66 | | Female | |
|---|---|---|---|---|
| *n=* | | | | |
| Variable | 1 | 2 | 1 | 2 |
| 1. Acceptance of the ingroup | - | | - | |
| 2. Acceptance towards the outgroup | .21 | - | .09 | - |
| 3. Outgroup Social Mobility | .12 | .02 | .04 | .02 |
| 4. Outgroup Social Competition | .10 | -.12 | .08 | -.07 |
| 4. Outgroup Social Creativity | .04 | -.38** | .07 | .01 |
| 5. Ingroup Social Competition (maintaining status) | -.16 | -.25 | -.37*** | .06 |

** $p < .01$, *** $p < .001$.
Note: n's may vary due to missing values

Table 59 shows the correlations between acceptance of the ingroup and towards the outgroup and outgroup social change beliefs for each status group. For the low status group acceptance was not related to outgroup social change beliefs. For the equal status group acceptance was not related to outgroup social change beliefs. For the high status group acceptance towards the outgroup was negatively related to outgroup social creativity, $r = -.40$, $p < .05$. High acceptance of the outgroup was associated with low support of social creativity beliefs in the outgroup.

Table 59

Correlations between Acceptance and Outgroup Social Change Beliefs for Each Status Group

| Variable<br>n= | Low Status<br>34 | | Equal Status<br>87 | | High Status<br>40 | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 1 | 2 | 1 | 2 |
| 1. Acceptance of the ingroup | - | | - | | - | |
| 2. Acceptance towards the outgroup | -.19 | - | .56*** | - | .10 | - |
| 3. Outgroup Social Mobility | .25 | -.14 | .13 | .01 | -.02 | .21 |
| 4. Outgroup Social Creativity | .23 | -.14 | -.01 | -.12 | .19 | -.40* |
| 5. Outgroup Social Competition | .31 | -.29 | -.05 | -.06 | .22 | -.12 |
| 6. Ingroup Social Competition (maintaining status) | -.18 | -.10 | -.12 | -.01 | -.29 | -.01 |

* $p < .05$, *** $p < .001$

Note: n's may vary due to missing values

Table 60 shows the correlations between acceptance of the ingroup and acceptance towards the outgroup for the minority and majority groups. For the minority group acceptance of the ingroup is negatively related to ingroup social competition, $r = -.43, p < .001$. High acceptance of the ingroup is associated with low social competition beliefs for the minority group. For the majority group acceptance towards the outgroup is negatively related to outgroup social competition, $r = -.22, p < .05$, and outgroup social creativity, $r = -.26, p < .05$. For the majority group high acceptance of the outgroup is associated with low support of social creativity and social competition beliefs in the outgroup.

Table 60

Correlations between Acceptance and Outgroup Social Change Beliefs for Majority and Minority Groups.

| | Minority 67 | | Majority 96 | |
|---|---|---|---|---|
| $n=$ | | | | |
| Variable | 1 | 2 | 1 | 2 |
| 1. Acceptance of the ingroup | - | | - | |
| 2. Acceptance towards the outgroup | .15 | - | .39*** | - |
| 3. Outgroup Social Mobility | -.09 | -.04 | .11 | .17 |
| 4. Outgroup Social Competition | .21 | -.08 | .09 | -.22* |
| 4. Outgroup Social Creativity | .09 | -.15 | .07 | -.26* |
| 5. Ingroup Social Competition (maintaining status) | -.43*** | -.08 | -.06 | -.05 |

\* $p < .05$, \*\* $p < .01$, \*\*\* $p < .001$
Note: n's may vary due to missing values

In order to examine the relative importance of the variables determining each social change belief a stepwise regression analysis was performed, the results are shown in Table 61. For the total sample the results indicated that the best predictor of supporting social mobility belief in the outgroup was gender, $\beta = -.34, p < .001$. Males were lower in their support of social mobility beliefs in the outgroup than females. The second best predictor of outgroup social mobility beliefs was gender identification $\beta = .26, p < .01$. High gender identification was associated with outgroup social mobility

beliefs.  The best predictor of outgroup social creativity was gender identification, $\beta = -.42, p < .001$. The second best predictor of outgroup social creativity beliefs was occupation, $\beta = -.34, p < .01$.  High identification with the group was associated with low support of social creativity strategies in the outgroup.  The best predictor of outgroup social competition beliefs was legitimacy, $\beta = .35, p < .01$.  The second best predictor of outgroup social competition beliefs was acceptance towards the outgroup $\beta = -.21, p < .05$. The best predictor of ingroup social competition beliefs was gender $\beta = -.34, p < .001$.  The second best predictor was occupation $\beta = -.38, p < .001$.

Table 61

Standardized Regression Coefficients between Outgroup Social Change Beliefs and Predictor Variables (Total Sample N= 207)

| Social Change Beliefs: | Predictor Variables | | | | | | | | $R^2$ | $F$ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Identification | Legitimacy | Stability | Acceptance Ingroup | Acceptance Outgroup | Discrimination | Gender | Occupation | | |
| Outgroup Social Mobility | .26** (.07) | -.12 (.01) | .06 (.00) | .11 (.01) | -.01 (.00) | .07 (.00) | -.34*** (.11) | | .17 | 17.42*** (1,140) |
| Outgroup Social Creativity | -.42*** (.09) | .05 (.00) | .08 (.00) | .16 (.02) | -.16 (.03) | .01 (.00) | .14 (.02) | -.34** (.05) | .17 | 6.98** (1, 139) |
| Outgroup Social Competition | -.10 (.01) | .35** (.10) | -.04 (.00) | .21* (.04) | -.21* (.05) | | | | .15 | 6.47* (1,131) |
| Ingroup Social Competition (maintaining Status) | .08 (.00) | .02 (.00) | .03 (.00) | -.08 (.01) | -.03 (.00) | .24*** (.08) | -.34*** (.15) | -.38*** (.09) | .43 | 13.45*** (1,141) |

* $p < .05$, *** $p < .001$

Note: partial $r^2$ are shown in brackets.

Table 62 shows the free answer responses to the question that asked what are the types of strategies you notice the outgroup using to improve their situation. For the female dominated occupation sample, men most often noticed women using social competition strategies, which included campaigning for childcare and derogatory comments about men, such as "the only reason he got that job is because he is a man". The majority of women did not work with male nurses, so did not notice any strategies. Female nurses mentioned men using social competition, social creativity and social mobility strategies in equal proportions.

For the respondents in male dominated occupations women noticed men using social competition strategies, which included various forms of networking to the exclusion of women such as 'the old boy network' 'playing golf' and fishing trips. The next largest group of women noticed no strategies used by men. The men most frequently noticed women using networking and social support to improve their position. Men also noticed women using social mobility strategies, which included extra study, and presenting papers to improve their visibility, and demphasizing their gender.

Table 62

Social Change Strategies Used by the Outgroup

| Strategy Noticed | Female Dominated Occupations | | Male Dominated Occupations | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| n= | 11 | 21 | 28 | 24 |
| Social Competition | 45.5% | 19% | 14.3% | 58.3% |
| Social Support | 27.3% | 4.8% | 41.7% | 0% |
| Social Creativity | 18.18% | 19% | 0% | 0% |
| Social Mobility | 9.1% | 19% | 32.1% | 0% |
| None | 18.2% | 38% | 21.4% | 20.8% |
| Other | 0% | 0% | | 16.7% |

# **CHAPTER SEVEN DISCUSSION**

The present study examined men and women in three gender dominated occupations. The research focused on the following specific areas of SIT gender identification, identity salience, beliefs about the intergroup situation, and social change beliefs for achieving and maintaining status. Each is discussed in turn in this chapter.

## **7.1 Gender Identity**

Group identification is a key aspect of SIT, which states that individuals strive to achieve positive social identities by achieving positive distinctiveness for their groups. The measure of gender identification used in the current research measured general attitudes towards belonging to the gender group, which included cognitive/emotional factors and opposition between individual and group needs.

### *Gender Identification and Gender Groups*

Hypothesis 1 that men would have higher gender identification than women was supported. Men also had higher gender identification on the cognitive/emotional subscale than women. This supports SIT's (Tajfel & Turner, 1979) claim that high status groups will have higher group identification because identification with a high status group (men) contributes more positively to the self-concept than identification with a low status group (women). Very few studies have studied the gender identification of men in comparison to the gender identification of women. A study by Swan and Wyer (1997) found that when men became conscious of their gender they emphasised their ingroup attributes whereas women demphasised their ingroup attributes. Swan and Wyer explain that it is more beneficial for men to be seen as a member of their gender group because their status makes more of a positive contribution to their self-concept than does women's. For women the opposite is true: they are motivated to draw attention away from their gender group membership- or have low identification because their category membership is not seen positively. Other SIT researchers have also found the high status group had higher identification than low

status groups. For example Ellemers, Doosje, Van Knippenberg and Wilke, (1992) manipulated status groups in an experimental setting, and found that the higher status group had higher group identification than the low status group.

The present research offers some support for SIT's assumption that high status groups identify more strongly with their group than low status groups. Women's lack of identification with each other can decrease group action, which will decrease the chance of changing women's status position.

## *Gender Identification and Occupations*

Hypothesis 2 that gender discrimination and gender identification would be related was not supported. Gender discrimination was only related to the individual/group opposition subscale. Experiences of gender discrimination were associated with increased opposition between individual and group needs. One of the items in this subscale is "I feel held back by my group", which reflects an element of discrimination. The absence of a relationship between discrimination and identification is contrary to previous findings that discrimination increases awareness of gender (Gornick 1983; Kanter, 1977). SIT does not explicitly predict a relationship between discrimination and identification but discrimination is likely to be a factor that increases gender salience that should increase the likelihood of identifying with the group. A possible explanation is that awareness of category membership does not necessarily lead to identifying with the group. Discrimination could change attitudes towards the outgroup more than attitudes towards the ingroup. Only a small number of respondents had experienced discrimination with a low mean on this scale.

Minority group members (female engineers and male nurses) had higher gender identification than majority group members. The different subscales of gender identification performed slightly differently. The minority group was higher in gender identification on the cognitive/emotional subscale than the majority group, while the majority group was higher on the individual/group opposition subscale than the minority group. Therefore, although the minority group identified more strongly with their group, they experienced more conflict between individual and group needs than

did the majority group. SIT (Tajfel, 1978) predicts that low status group members will identify less with the ingroup because of the negative contribution this makes to their self-concept. However SIT does not necessarily equate being a numerical minority with being of low status.

Low status groups can identify highly with their group under some conditions. For example Ellemers, Van Knippenberg, and Wilke (1990) found that if respondents saw the intergroup situation as unstable, the low status group strongly identified with their group. In another experiment on group conditions Ellemers, Wilke & Van Knippenberg, (1993) found that when a low status group is illegitimately of low status their identification with the group increases. A high status minority group can also be seen very favourably and make a positive contribution to the self-concept (Ellemers et al., 1992).

There are other reasons that may cause minority or low status groups to identify more strongly with their group. Brown and Smith (1989) and Lee (1993) found that the minority groups in their studies saw their groups as more homogenous than the majority groups. This may make it easier for the minority group to identify with their group as an abstract idea of a group, as they see the group as more homogeneous, and actually have less within group contact than the majority group. The majority group in Brown and Smith's study also saw the minority group as more homogeneous than the majority. The effect of the expectations of the majority group may also play a part in the identification of the minority group. The majority may expect them to identify with each other, because of their shared category membership.

Minority status in itself may create a common bond between the group members. This is reflected in comments by one of the male nurse respondents who said " there's a bit of male camaraderie among other nurses in the wards, like you'd see someone else and you'd go hey man and you feel a bit of a bond". The perceptions of homogeneity between the majority and minority groups may also explain why women in the majority group saw women as more different to each other than the minority women did. This was reflected in the number of comments about the difference between women in the gender identification free responses.

Gender identification was higher for those respondents in male dominated occupations than female dominated occupations. Gender identification was not higher for men or women within either occupation. When analysing identification by subscale, men in male dominated occupations experienced less individual/group opposition than women.

The high individual/group opposition that the female engineers experience and the feeling that they do not fit in with other members of their group, may be related to the fact that they do not have opportunities to work or socialise with other women in their profession. They may also have difficulties fitting in with the support staff who are usually women. For example one woman engineer in the study said, "in engineering I feel that sometimes other women staff can resent the fact that you're the engineer and they are admin." Another female engineer stated that an important part of trying to fit in was not socialising with other women "Trying to spend more time in staff rooms/lunch time with engineers (predominately male) than administration staff (always female), to be seen as one of that group". Metcalfe (1987) also found that women in male dominated occupations experienced pressure to separate from their gender identity, which was so they could take on the masculine characteristics seen to be needed for their work.

Women in male dominated occupations may have more masculine self-concepts than other women, which may lead to their dislike of working with other women (McLean & Kalin, 1994). The female engineers in the current study expressed dislike of working with other women in the free answer section. Many women reported that they enjoyed working with men. These factors may also increase their feelings of not fitting in with other women.

## *Gender Identification and Status*

Hypothesis 10, that gender identification would be higher for those respondents who saw themselves of high status than respondents who saw themselves of low status was not supported on the full gender identification scale. The low status group had

higher gender identification than the equal group on the cognitive/emotional subscale. There was no difference between the high and the low status groups, or between the equal and the high status group. SIT claims that the high status group will have higher identification than the low status group because their group membership makes a more positive contribution to the self-concept than does membership in a low status group. SIT does not consider the position of equal status groups, and focuses on objective status differences rather than the subjective self-ratings of status that were used in this study.

Finding no difference in identification between the high and low status groups is inconsistent with previous research within the SIT framework. For example, Ellemers et al. (1990) found the high status group was seen as more attractive and the low status group members were more dissatisfied with their group membership than the high status group. One of the few studies to examine equal groups found that members of equal groups felt more positive about their group membership than low groups, although this study focussed more on power differentials than status (Bourhis, 1992).

The first possible explanation for the low identification of the equal status group is that the equal status group do not have the same motivation or need to think collectively as a low status group does. For the low and high status groups it is in their interest to think collectively, to improve or maintain their position. Group membership may not be as important for those who have equal status, as there may be no need for group action. Alternatively respondents who identify less with their group may have less cause or opportunities to make comparisons between their group and the outgroup so do not perceive their group to be of low status.

The low status group had higher conflict between individual and group needs than the high status and equal status groups. The difference between the low status group and the equal and high status groups on individual/group opposition, reflect the nature of the questions on this subscale. The items that make up this subscale cover how well the respondent fits in and how they feel with other members of their gender group and whether they feel held back by their gender group. The perception that the ingroup is of low status may be related to the feeling of being held back by group membership.

These results also show that low status group members have trouble fitting in with their group.

The results do not support the SIT assumption that high status groups will have higher gender identification than low status groups. They do provide information about the identification of groups of equal status. The feeling of being held back by the group does not diminish identification with the group on cognitive emotional aspects.

## Gender Identification and Majority and Minority Groups

C.Williams (1989) states that male minorities have more reason to identify with each other as their gender group is seen more positively by the majority group, whereas women in male dominated occupations try to reduce the attention to their category membership. Comparing the minority groups shows that minority women had higher gender identification than the minority men, which is in contrast to C. William's findings.

The difference between the subscales is important in explaining these findings. Women identified less highly on the subscale that measured how well they get on with other women, and whether they feel held back by their group, than male nurses. These items measure more specific behaviours than the cognitive/emotional subscale items, which tend to be more abstract. Therefore, women engineers can identify highly with other women in the abstract, but when it comes to fitting in with other women, they have more difficulty.

## Gender Identification Summary

The gender identification results give mixed support to SIT's prediction that members of high status groups have higher gender identification than members of low status groups. Men have a higher status in society than women and as predicted, they had higher gender identification than women. On the other hand, the minority group in the workplace had higher gender identification than the majority group, and minority

women had higher gender identification than minority men. Among the status groups, there was no difference in identification between the high and low status groups, the equal group had the lowest gender identification. The differences among the groups may reflect the specificity of gender identification that was measured. The measure of status used in this study, was a self-report measure of respondents perceived status, in the workplace. However, the gender identification measure focussed on identification with the gender group as a whole not specifically within the occupations, which may explain why the SIT prediction was upheld in the gender groups. Future research could usefully explore the differences between gender identification with the entire gender group and gender identification with subgroups. Researchers could for example study identification with the group women engineers or male nurses.

## 7.2 Identity Salience

The discussion of identity salience is organised into three sections identity salience and gender groups, identity salience in gender dominated occupations and identity salience and SIT. Two aspects of gender salience were studied, gender salience in the self-concept and gender salience as a basis for categorising others.

### *Identity Salience and Gender Groups*

Hypothesis 5 that women would have higher self-concept gender salience than men was not supported. No differences were found between the gender groups in gender salience in the self-concept, occupational salience in the self-concept or the Gender Salience Scale. These results are consistent with McGuire, McGuire and Winton (1979) who found no difference in gender salience between the males and females in their sample.

One of the problems mentioned by McGuire and Padawer-Singer with the Spontaneous Self-Concept measure, that could have affected the salience rating in the

present study, is the small numbers of respondents who actually mention the attributes of interest, such as gender and occupation in the present study. There are also problems with measuring gender salience as if it is a stable construct when SIT states that different identities will be salient at different times, according to relevant categorizations in the situation.

## *Identity Salience and Occupations*

There were no differences in gender salience between the occupations or between men and women within occupations. These findings are inconsistent with previous research, which suggests that the emphasis on gender that occurs within gender dominated occupations will increase the salience of gender (Kanter, 1977). The findings are also in contrast to some of the comments made by respondents. The respondents highlight some of the characteristics of the job that emphasise gender, and seem likely to make gender salient. For example there are practical differences in the jobs that male and female nurses are able to do male nurses have "to protect themselves, - bathing little girls, for example male staff nurses tend to not do that sort of work". The work that nurses do seems to include many situations that emphasise the physical differences between the genders. On the other hand for female engineers it seems to be the workplace culture that emphasises their different gender, for example the men spent time, "Talking about cars, engines, and mountain bike parts, so that females are excluded from conversations, and kept on the outer ring". The attitudes of managers and peers to the female engineers may also highlight their gender. For example one woman reported "being referred to in front of a client by her manager as 'little Sarah'". She felt that her manger would never have referred to a male employee as 'little' or 'young'.

## *Identity Salience and Majority and Minority Groups*

Hypothesis 6 that the minority group would have higher gender salience than the majority was not supported by the results. This is inconsistent with previous research; McGuire and Padawer-Singer (1976) found that the numerical minority or majority status of gender affected gender salience, creating higher gender salience for the minority gender

Hypothesis 8 that the minority group would have an inverse relationship between occupational and gender salience was not supported, and that the majority would have a positive relationship between occupational and gender salience was not supported. Hypothesis 9 that the minority group would have higher gender salience than occupational salience was not supported. In fact, the minority and the majority groups both had higher occupational salience than gender salience. These results are inconsistent with other research that has demonstrated that gender is more salient for gender minorities than occupational membership (Macke, 1981). The findings of the current study suggest that being a gender minority may not always diminish occupational salience.

The majority group did have higher scores on the Gender Salience Scale. The majority group members have more traditional attitudes towards using gender for categorising others, than the minority group members. This has implications for the minorities working in gender dominated occupations as they will find that the majority groups use gender as a basis for attitudes and decisions about others. This is consistent with Kanter's (1977) research, she found that the dominant group emphasised category membership and used it to make assumptions about the minority group members.

For the majority group high occupational salience was related to low numbers of the outgroup in the workplace. This is an unexpected finding. It means that the presence of the outgroup in the workplace affects the salience of occupation as part of the self-concept. Majority group members' ideas about their occupation may be affected by their gender and the gender of their workmates. Martin (1994) states that the entry of women into male dominated occupations can highlight the feminine and

service elements of an occupation, which men prefer to hide from themselves and others. The emphasis on the characteristics of the occupation associated with opposite gender may have decreased the salience of occupation in the self-concept of the respondents.

## *Identity Salience and SIT*

Hypothesis 3 from SIT that individuals who have a member of the opposite gender in their immediate workgroup would have higher self-concept gender salience than those who do not work with a member of the opposite gender, was not supported. According to SIT the presence of an outgroup increases salience for both the ingroup and outgroup members. This prediction from SIT has been supported by an experiment on gender groups by Abrams, Thomas and Hogg (1990). They found that gender was more salient for those with outgroup members in their group than individuals in a homogenous group.

It was also hypothesised (Hypothesis 4) that the number of same gender colleagues or the distinctiveness of category membership would not be related to gender salience. This hypothesis was supported by the data; the number of ingroup members was not related to the gender salience of the respondents. The presence of groups in the workplace did not increase self-concept gender salience and the distinctiveness of gender group membership did not increase gender salience. This is inconsistent with previous research that shows that distinctiveness is related to identity salience (McGuire & McGuire, 1981). Many factors other than distinctiveness can influence the salience of gender in the self-concept. Oakes and Turner (1986) found that novel category memberships were not automatically more salient; the task on which the individuals in their experiment worked had more of an effect than novelty. Sex Role Orientation may also influence gender salience (Abrams, Thomas & Hogg, 1990).

Hypothesis 2 that gender discrimination and gender salience would be correlated was not supported. This is inconsistent with previous research that has highlighted how

gender discrimination increases awareness of gender (Kanter, 1977). A possible explanation for this finding is once again the lack of respondents actually mentioning gender as part of the self-concept and the small numbers of respondents who actually experienced discrimination. Skevington and Dawkes (1988) also found very low numbers of nurses of either gender reporting gender discrimination.

A correlation was hypothesised (hypothesis 6) between self-concept salience and the GSS. This was not found for the majority or minority group. Self-concept gender salience did not make respondents more likely to categorise others by gender. Rather the GSS was related to majority group and age with older people having higher scores. Older people categorise individuals by gender more than younger people.

## *Identity Salience Summary*

The predictions made relating to identity salience were not supported, with no differences between men and women, status or occupational groups. Gender as a basis for categorising others was higher in the majority group reflecting more traditional attitudes in the majority group. No support was found for either distinctiveness theory or SIT. The lack of support for any of the salience hypotheses suggests that the measure of salience may have been inadequate. The nature of the spontaneous self-concept scale means that its reliability and validity cannot be assessed, and there are few alternative measures with which to compare it. To add to knowledge of the causes of salience future research should explore the factors within contexts such as gender dominated occupations, which increase the gender salience of individuals.

## 7.3 Beliefs about the Intergroup Situation
### *Status*

*Status, Gender Groups and Occupations*

Status beliefs were not independent of gender or occupation. Minority or majority group membership also affected the distribution of beliefs about status. The largest percentage of the minority group saw their situation as low status. The largest percentage of the majority group saw their situation as equal. The majority of women saw their status as equal, very few women saw their status as high and very few men saw their status as low. Research findings suggest that some women, especially younger women, now consider that women have achieved equality with men in society (Cockburn, 1991, Condor, 1989). The assumption that many researchers make that women constitute a group of low status should be used with caution considering the number of women who see themselves as of equal status, although the perceptions of the respondents may not necessarily reflect reality.

Hypothesis 11 that the majority of female engineers would see themselves of low status and that the majority of male engineers will see themselves of high status was supported. The history of women in male dominated occupations is that their societal status and low numerical representation within an occupation interact increasing the disadvantage that they experience. Zimmer (1988) emphasises the role societal sexism has on tokenism processes, and that minority status should not be considered alone when examining the position of tokens in the workplace. The history of the genders in the occupation is also an important factor. Women in engineering did see themselves as disadvantaged, giving examples such as the lack of female role models, the lack of women in management and senior positions, and the attitudes of men to their presence.

Hypothesis 12 that the majority of male nurses would see themselves of low status and that the majority of female nurses would see themselves as high status, was not supported. Hypothesis 13 that the majority of female nurses would see themselves of low status and that the majority of male nurses would see themselves of high status was not supported. No difference was found in the perceptions of status between the

men and women in female dominated occupations. The combination of status in society and being a minority group may interact to make a situation of equality between the gender groups in nursing. Ellemers et al. (1992) found that being a minority does not necessarily make the group low status, and a high status minority was seen in their study the most positively of all. Men in nursing could be described as a high status minority as their societal status and status within the organisation (in terms of representation at higher levels) is high, and yet they are a numerical minority. Skevington and Dawkes (1988) in their study of nurses found that men in nursing did not see themselves as disadvantaged by being a numerical minority. In contrast to Kanter (1977) who thought that numbers had the most influence on creating a token situation these results highlight the importance of considering more than just numbers when studying minorities in the workplace. Zimmer (1988) states that societal status and social attributes may also contribute to tokenism processes, which results in different experiences for female and male tokens.

## *Legitimacy and Stability*

Hypothesis 17 that legitimacy and stability would not be independent was supported. This is consistent with research by Ellemers et al. (1990) who found that the intergroup situation was fairer when the situation was also seen as stable. Hypothesis 18 that more high status respondents will perceive the situation to be stable than low status respondents was not supported there was no difference between the high and low status group in perceptions of stability. The comments on the free response section demonstrate that even the low status respondents felt that the intergroup situation would be very slow to change, a female engineer commented, "I'd like to think that males and females will have equal advantages in engineering in the future but I doubt that it will be in my lifetime".

Hypothesis 18 that more high status group members would see the situation as legitimate than low status respondents was not supported. There was no difference between the high and low status groups on perceptions of legitimacy. A large number

of the high status group acknowledged the illegitimacy of the status relations. It is difficult to tell how honest the high status group was when answering the questionnaire, there may have been a strong influence to be 'politically correct'. The majority of the equal group saw the situation as legitimate and stable. More members of the minority group saw the situation as illegitimate than did members of the majority.

*Gender, Occupations, Legitimacy and Stability*

There were no differences in legitimacy beliefs between men and women in the sample. The majority of respondents in female dominated occupations saw the intergroup situation as legitimate, and the majority of respondents in male dominated occupations saw the situation as illegitimate.

There were no differences in legitimacy beliefs between the men and women in male dominated occupations. The legitimacy of the situation in gender dominated occupations has not been previously studied. The acknowledgment of the illegitimacy of the intergroup situation by male engineers may have been influenced by the method of recruiting engineers. Male engineers interested in gender relations and with views that are more liberal may have been more likely to fill out questionnaires. The majority of men in female dominated occupations saw the situation as illegitimate and the majority of women saw the situation as legitimate.

The majority of respondents saw the situation as stable. No differences in stability beliefs were found between male and female dominated occupations and between males and females in each occupation. Perceptions of the stability of status relations were unaffected by majority or minority status

## *Acceptance*

Perceived acceptance of the ingroup and acceptance towards the outgroup were taken as a measure of the permeability of group boundaries.

*Acceptance, Gender and Occupations*

Acceptance was not influenced by gender alone, with no differences in acceptance of the ingroup or acceptance towards the outgroup between the men and women in the total sample. Respondents in female dominated occupations felt that the ingroup was more accepted than did respondents in male dominated occupations. There was no difference between male and female dominated occupations in acceptance towards the outgroup. The minority group felt less accepted than the majority group, and they were more accepting of the outgroup than the majority group.

The acceptance result may reflect the nature of the work of nurses and engineers nurses must work in teams whereas many of the engineers work by themselves or in a much more competitive environment than nursing. Oaker and Brown (1986) claim that there is "a strong ethos of co-operation" in nursing (p. 767).

In male dominated occupations females felt less accepted than males. In male dominated occupations males were less accepting of the outgroup than were females. This finding supports previous research into the situation of women in male dominated occupations and into engineering in particular. For example, McIlwee and Robinson (1991) found that women often struggled to fit into the tool obsessed male culture that exists in engineering. It is encouraging that the males in the male dominated sample acknowledge that they are not accepting towards the outgroup, as that is a first step in changing the atmosphere. Although like legitimacy beliefs acceptance could have been influenced by the fact that male engineers with liberal views may have been more likely to fill in the questionnaires.

In female dominated occupations acceptance of the ingroup was the same for men and women, and males were more accepting to the outgroup than females. Hypothesis 16 that women would be more accepting of men in female dominated occupations, than men in male dominated occupations are of women was supported. Skevington and Dawkes (1988) found that men had very positive attitudes towards women in nursing. Previous studies have shown that women in female dominated occupations view men positively and men are also accepted with little gender

discrimination (C. Williams, 1992). Benokraitis and Feagin (1986) also claim that women have more difficulty being accepted into traditional male occupations than males do into female occupations. This indicates that it may be possible for males to successfully assimilate into female dominated occupations.

Societal status affects positions within occupations resulting in men being accepted into female dominated occupations more easily than women are into male dominated occupations. Fairhurst and Snavely (1983a) found that male tokens were not as socially isolated as female tokens. Comments from female nurses in the present study demonstrated that women felt that they made an effort to include the male nurses for example, one of the female nurses said "I think they're often included quite readily so that they're not made to feel you know out on a limb on their own".

Perceived acceptance of the ingroup was higher when there were more ingroup members in the workplace. Acceptance towards the outgroup was also higher when there was more outgroup members in the workplace. These findings contrast with those of Wharton and Baron (1987) who studied the effect of gender segregation on men's well-being. They found that the men in the mixed gender setting experienced lower job satisfaction and self-esteem than the men in the male dominated or the female dominated work setting. They concluded that token males might actually interact better with females in the female dominated setting than in the mixed setting. The relationship of acceptance to numbers also challenges SIT's prediction that larger numbers of the outgroup are seen as a threat to the ingroup, and offers support for researchers such as Kanter (1977) who suggest that tokenism processes will decrease as the numbers of the minority in the occupation increase.

### Acceptance and Status

Hypothesis 14 that low status respondents would have perceived lower acceptance of the ingroup than high status respondents was supported. Lalonde and Silverman (1994) found that there was a relationship between legitimacy and permeability. Individuals who saw the situation as highly permeable saw the situation

as more legitimate.  Respondents in the present study who believed the situation to be illegitimate had lower mean scores on acceptance of the ingroup.  SIT states that accepting some members of the minority legitimises the position of the high status group.  Status was associated with acceptance beliefs and acceptance of the outgroup legitimises the intergroup situation, so that group action is less likely to be taken. The hypothesis that high status respondents will express lower acceptance of the outgroup than the low status respondents was supported.

*Acceptance and Gender Identification*

Hypothesis 15 that high gender identification would be related to lower acceptance towards the outgroup was only supported by the individual/group opposition subscale of gender identification.   The less opposition between group and individual needs the less accepting towards the outgroup the ingroup was seen to be.  One of the aspects of individual/group opposition is fitting in well with the ingroup.  Fitting in well with the ingroup may decrease accepting the outgroup.  Lower perceived acceptance of the ingroup was related to higher gender identification on the cognitive/emotional subscale.  The more individuals in gender dominated occupations identified with their group the less they felt accepted by the outgroup.  This is reflected in comments made by female engineers about the ways they minimise stereotypical aspects of femininity in order to be accepted at work, which includes not wearing  "pink butterfly clips" and being "as professional as possible and never cry!"

The relationship between identification and acceptance is consistent with SIT that predicts that high identification, in this case low opposition between the individual and the group, will be associated with differentiation between the groups.  The results of previous studies looking at differentiation and identification have had mixed results. Hinkle, Taylor, Fox-Cardamone and Crook (1989) claim that subscales of identification may have differing effects on differentiation.

The results of the current study show that the different subscales of gender identification have different effects on acceptance towards the outgroup.  This adds to the knowledge of which aspects of identification are important influences on other

intergroup factors. For respondents working in gender dominated occupations the better individuals fit in with their ingroup the less likely they may be to make efforts to accept the outgroup.

### *Beliefs about the Intergroup Situation Summary*

To summarise there were differences in perceived status between gender groups and occupations. Legitimacy and stability beliefs were not independent of each other or of status beliefs. In line with previous research, perceived acceptance of the ingroup was higher in female dominated occupations than in male dominated occupations and male nurses felt more accepted than females in male dominated occupations. More research is needed into the perceptions and beliefs of equal groups.

## 7.4 Social Change Belief Systems –
## Achieving Positive Distinctiveness
### *Social Change Belief Systems, Gender and Occupations*

There were differences between men and women on social change beliefs. For the total sample men scored higher on social mobility than did women. Women scored higher on social competition and social creativity than men.

There were differences between the occupations. Members of male dominated occupations scored higher on social mobility than respondents in female dominated occupations, members of female dominated occupations scored higher on ingroup social creativity than members of male dominated occupations.

Within each occupation, there were differences between men and women. In both female and male dominated occupations females scored higher on ingroup social competition and ingroup social creativity than men. In the female dominated occupation there was no difference between men and women on ingroup social mobility beliefs. In male dominated occupations females scored lower on ingroup social

mobility than men. There are very few studies on gender differences in social change beliefs. Although Skevington and Dawkes (1988) found that male nurses had higher individual ambition (equivalent to social mobility) than did female nurses. This was not supported by the current study in which there were no differences between male and female nurses on social mobility beliefs.

Men scored higher on individual action, and women scored higher on collective action measures. This shows that men may not be as competitive against women as women are against men, as the women were higher in social action than men. Research into gender dominated occupations supports these findings. O'Farrell and Hanlan (1982) found well over half the men in the male dominated occupation they studied approved of women's presence. Bourhis (1992) conducted an experiment manipulating power between groups and gender. He found that males with 70% power discriminated less against female outgroup members than males with 100% power. Amancio (1989) also found differences in differentiation between men and women. He found higher differentiation from men than women. J. Williams (1984) suggested that females have different types of beliefs than men. She states that women emphasise affiliation between groups and group members, which she labelled communal. Men focus on differentiation and competition J. Williams labelled these beliefs agency. In contrast to Amancio and Williams, the results of the current study show that women can be just as competitive as men if not more so on gender issues.

## Social Change Belief Systems and Status

The low status group had lower ingroup social mobility beliefs than the equal and high status group. Low social mobility may be related to the low status group's acceptance beliefs as they also felt less accepted than the other groups which rules out social mobility as a strategy for improving individual status. The low status group had the highest ingroup social competition scores followed by the equal group then the high status group. That the low status group would want to improve its position the most is consistent with the theory and previous research. However, SIT also predicts the high

status group will be trying to maintain its status. Bourhis (1992) found increasing differentiation between the low, equal and high power conditions.

The low status group had higher social creativity beliefs than the equal and high status groups. Social creativity beliefs are expected to be used more by the low status group, as a high status group has more power to choose the more efficient social competition strategy to maintain its position.

The minority group had lower social mobility beliefs than the majority group and higher social competition beliefs than the majority. The majority group supports individual action and the minority favours collective action.

## Social Change Belief Systems and Identification

### Total Sample

Gender identification was related to high social mobility and social creativity beliefs. Low individual group/opposition was related to low beliefs in social competition. Previous studies have not always found the predicted relationship between identification and social change beliefs in natural groups. For example Kelly (1988) found identification was related to differentiation (a form of social competition). Brown et al. (1986) found that identification was not related to differentiation. Turner (1999) criticises these previous studies for only focussing on one social change belief (differentiation). In addition, other factors may play a part in the relationship such as the perceived legitimacy of the status relations. Oaker and Brown (1986) found that the amount of contact between the groups of nurses in their study affected the amount of differentiation between the groups. SIT research has yet to adequately explore the relationship between identification and social change beliefs.

*Gender Groups*

For men gender identification was positively related to ingroup social mobility, ingroup social creativity and negatively to ingroup social competition. The relationship between identification and social mobility is in the opposite direction predicted by SIT. It may be possible that gender is associated with strategies in a manner not predicted by SIT. Social mobility seems to be associated with a masculine image of individual ambition and assertiveness, which may result in increased identification with men leading to increased social mobility beliefs.

For women gender identification was related to ingroup social creativity, which is a collective strategy. J. Williams (1984) states that women may emphasise communality, or a focus on affiliation and attachments to others. Men on the other hand men emphasise agency or differentiation from others. J. Williams assumes that this means that men focus on competitive behaviour and women focus on affiliative behaviour. The findings in the current study suggest that perhaps the agency that men exhibit is more focused on individual mobility or achievement. The attachment or communality that women exhibit does not rule out competitive behaviour, but it may mean that women are more likely to undertake collective action than social mobility strategies.

*Status*

## Low Status Group:

High gender identification was associated with high social creativity beliefs. Hypotheses 20 and 28 that high gender identification would be related to low ingroup social mobility beliefs and high ingroup social competition beliefs, were not supported on the full gender identification scale. However, analysing gender identification by subscale shows that low individual/group opposition was related to low ingroup social

competition beliefs. High gender identification was associated with high ingroup social creativity beliefs. High individual group/opposition was related to high ingroup social competition beliefs. Feeling held back by the group and not fitting in with the group may motivate group action to improve the group's status.

Equal Group:

High identification was related to high ingroup social creativity. Respondents high in identification were expected not to support social mobility beliefs, as according to SIT social mobility is associated with low identification. However high identifiers among the equal group did support social mobility for the ingroup and as a belief for the outgroup. This may be due to the unique position of the equal group that has seldom been studied. The equal group may not experience the same conflicts between individual ambition and group action as for the other status groups. Therefore, identification with the group does not rule out individual ambitions. Tajfel (1978) did propose that fear of social sanctions from the group can prevent strategies for individual mobility. The opinions of the ingroup may influence the choice social change beliefs. For example, Barreto and Ellemers (2000) found that accountability to the group influenced choice of group or individual action, although Barreto and Ellemers only studied groups of low status. For a group of equal status group identity may not be as important to the group, as reflected in the lower identification in this group. Therefore, the group may not sanction individual strategies. Individual ambition and taking of opportunities may even be emphasised by those who believe in the equality of opportunities for both groups.

High identifiers among the equals also supported ingroup social creativity strategies and ingroup social competition for maintaining status. SIT predicts high identification to be related to social competition and social creativity. An explanation for why high identifiers among the equal group support individual and group strategies may be that they must maintain their equality of opportunities. Alternatively support of

these strategies may have assisted or contributed to the groups achievement of equal status. Individuals who believe the status is equal may still support action to maintain and achieve status while emphasising individual action.

## High Status Group

The hypotheses (20 and 28) that predicted relationships between identification and social change beliefs for the high status groups were not supported. The only relationship was that low individual/group opposition was associated with high social mobility beliefs. The identification of the high status group has seldom been studied. Oaker and Brown (1986) did study high and low status groups of nurses. Contrary to their hypothesis they found a negative relationship between identification and differentiation for their high status group. The lack of a direct relationship between identification and social change beliefs for the high status group suggests that factors other than identification are influential in determining the beliefs of the high status group. One of these factors is legitimacy. For example, Finchilescu and de lay Rey (1991) found social competition beliefs of the high status group were affected by their legitimacy beliefs. Another factor that can affect social change beliefs other than identification is favourable treatment to the outgroup (Commins & Lockwood, 1979). The social change beliefs may also be affected by different factors depending on whether they are attitudes towards the outgroup or ingroup beliefs. Brown (1995) suggests that different motives may be responsible for outgroup attitudes and ingroup bias.

It is also possible that the measure of social change beliefs for the high status group was inadequate. The items were adapted from items designed for low status groups and may have not adequately identified the relevant dimensions on which the groups make efforts to maintain their status in their workplace. The measure of identification may have been inadequate although it has been used successfully in many previous studies. Turner and Reynolds (in press) suggest that measuring gender identity,

as an individual differences variable as was done in this study, may not adequately reflect the group nature of identification.

## Social Change Belief Systems and Acceptance

Acceptance was also hypothesised to relate to social change beliefs. Separate hypotheses were formed for the low equal and high status groups. Gender groups were also considered separately.

### Total Sample

For the total sample high acceptance of the ingroup was associated with high social mobility beliefs and low social creativity beliefs as predicted by SIT. Low acceptance of the outgroup was associated with high belief in social mobility, and high belief in social competition.

### Gender Groups

For the men in the sample acceptance of the ingroup was not associated with social change beliefs. High acceptance towards the outgroup was associated with low social mobility beliefs, which is not as predicted by SIT. For women high acceptance of the ingroup was associated with higher beliefs in social mobility. This relationship is predicted by SIT, permeability of the group boundaries, which was measured by acceptance in the current study, will affect the choice of group or individual action.

*Status*

## Low Status

Hypothesis 19 that high acceptance of the ingroup would be related to high ingroup social mobility beliefs was supported. For social mobility to be possible, the group must feel that it can be accepted into the high status group. SIT predicts this relationship and it has been supported by research findings in a variety of experimental groups (Ellemers et al., 1990; Lalonde & Silverman, 1994). Acceptance can decrease group action, which can be beneficial for the high status group.

Hypothesis 23 that high acceptance would be related to low ingroup social creativity beliefs was supported. If the group cannot join the outgroup then it will think of other ways of improving its status which can include using social creativity methods. Experiments by Jackson et al. (1996) found that social creativity strategies were employed more when the intergroup situation was impermeable. The current study offers support from natural low status groups to the relationships predicted by SIT.

## Equal Status

The hypotheses that acceptance of the ingroup will be positively related to ingroup social mobility and negatively related to all other social change beliefs was not supported. Acceptance towards the outgroup, or acceptance of the ingroup was not related to social change beliefs for the equal group. There is very little research into the social change beliefs of the equal group. If the group perceives the intergroup situation as equal, acceptance is not an important factor in determining their social change beliefs. There may be other factors that affect the equal group's social change beliefs.

High Status

The hypotheses that high ingroup acceptance will be related to high outgroup social mobility, low outgroup social creativity, low outgroup social competition, high ingroup social competition and social creativity and low ingroup social mobility were not supported.

Acceptance towards the outgroup was also not related to the social change beliefs of the high status group. These results are not consistent with Ellemers et al. (1990) who found that when the intergroup situation is permeable individuals would strive for individual position regardless of their group position. Their research suggests that the high status group should be high on social mobility beliefs even when the boundaries are open.

## *Social Change Belief Systems, Legitimacy and Stability*

Social change beliefs were compared between those who see the situation as legitimate and stable. As predicted (Hypothesis 21) respondents who saw the intergroup situation as legitimate had higher social mobility beliefs than those who saw the situation as illegitimate. This may be because acceptance of the group or open boundaries between groups legitimises the groups' position, and increases social mobility beliefs. Mogghaddam and Perreault (1992) also found that that belief in the legitimacy of the intergroup situation was associated with individual action. Hypothesis 26 that respondents who see the intergroup situation as legitimate would have higher social competition beliefs than respondents who saw the situation as illegitimate was not supported. The hypotheses (22, 24 and 27) that social change beliefs would be different for respondents who saw the situation as stable or unstable were not supported.

## *Social Change Belief Systems and Predictor Variables*

Social change beliefs are predicted by SIT to be influenced by identification with the ingroup, acceptance or permeability of the group boundaries, and legitimacy and stability beliefs. These predictions by SIT have had mixed support from previous research and the current research. Different factors seem to be important in determining each social change belief for different groups. Regression analysis gave more information about the relative importance of the variables to each belief.

Social mobility beliefs are determined by gender, socialisation may encourage men to be more individually ambitious than women. Social mobility beliefs are also determined by experiences of discrimination. Discrimination discourages social mobility, which suggests that discrimination may make individuals more aware that individual ambition is not enough for their success.

Social creativity was best predicted by gender identification. This was predicted by SIT and has been found in previous research. Gender is the second best predictor of social creativity beliefs, with women favouring social creativity more than do men.

Social competition beliefs (achieving status) are predicted best by gender and experiences of discrimination. Women again favour group action, more than the men do, and experiencing discrimination increases group action. The two variables that best predict each social change belief are summarised in Table 63.

Table 63

Variables Predicting Ingroup Social Change Beliefs

| Social Change Belief | First Variable | Second Variable |
|---|---|---|
| Ingroup Social Mobility | Gender | Discrimination |
| Ingroup Social Creativity | Identification | Gender |
| Ingroup Social Competition (achieving) | Gender | Discrimination |

*Social Change Belief Systems - Achieving Positive Distinctiveness*
*Summary*

In the choice of social change beliefs to improve group status men and respondents who saw themselves of high status favoured individual beliefs -social mobility. Women and respondents who saw themselves of low status favoured group actions. For women and respondents who saw themselves of low status high gender identification was related to high social creativity beliefs. For men high gender identification was associated with high social mobility and social creativity beliefs. For the high status group identification was not related to social change beliefs. Legitimacy stability and acceptance also affect choice of social change beliefs. The regression analysis shows that different variables predict each social change belief. A better approach for future research is to study social change beliefs separately, considering the different factors that predict each social change belief.

## 7.5 Social Change Belief Systems –
## Maintaining Positive Distinctiveness
*Social Change Beliefs, Gender and Occupations*

Respondents in female dominated occupations showed lower support for social mobility beliefs in the outgroup than respondents in male dominated occupations. Similarly, the ingroup social mobility beliefs were also lower in the male dominated occupations. Respondents in female dominated occupations had lower social competition (maintaining) beliefs than those in male dominated occupations. This may be because female dominated occupations are more accepting so there is less need for social competition.

From the overall sample women showed higher support for social mobility beliefs in the outgroup than men, and higher social competition (maintaining status) beliefs than men. Women's support of social mobility beliefs in the outgroup is surprising given their low scores on ingroup social mobility, social mobility beliefs

appear to be seen as a masculine characteristic. Women showed lower support for social competition beliefs in the outgroup than men, and lower support for social creativity beliefs in the outgroup than men. This demonstrates that men support action by women to improve their status, however women do not support men's attempts to maintain their status. This may make it difficult for men in gender dominated occupations to improve their position.

In both the female dominated occupations and the male dominated occupations women were higher in support for outgroup social mobility and social competition (maintaining) than men, and lower in their support for outgroup social creativity than men. In female dominated occupations women were lower on supporting outgroup social competition than men. Men in the female dominated occupation supported women's attempts at improving their status. These findings are consistent with research conducted by Skevington and Dawkes (1988) who found that men in nursing had liberal sex role orientations that were very similar to the female nurses.

Information on the attitudes that the groups have about the outgroup's social change beliefs expands on initial predictions by SIT that have been neglected by previous research. The findings demonstrate that men do support women's efforts to change the intergroup situation.

## Social Change Belief Systems and Status

The low status group showed higher support of social mobility beliefs in the outgroup, than the high status group. The equal status group showed lower support for outgroup social competition than the high status group. This may be because the equal group does not want to compete, and the outgroup beginning to take action may threaten their equal status.

The low status group had higher social competition (maintaining status) beliefs than the equal group and the high status group. In this situation the high status groups are not concerned with maintaining their status. This could be due to the high numbers of high status respondents who saw the intergroup situation as illegitimate.

Alternatively, it could be because the group's social position is so strong that competition to maintain status is unnecessary. The majority group also had had lower social competition (maintaining the status) beliefs than the minority group.

## *Social Change Belief Systems and Identification*

### *Total Sample*

High gender identification was related to high ingroup social competition (maintaining status). High gender identification was related to low support of social creativity beliefs in the outgroup.

### *Gender Groups*

For men high gender identification was related to high support of social mobility beliefs in the outgroup, and high ingroup social competition (maintaining status). High gender identification was also related to low support of social competition beliefs in the outgroup.

### *Status*

## Low Status

Hypotheses 31 and 36 that high identification would be related to low outgroup social mobility and low support of outgroup social competition were not supported. Hypothesis 35 that high identification would be related to low support of outgroup social creativity beliefs was supported. High identifiers in the low status group do not support attempts by the outgroup to improve the outgroup's status. SIT states that attempts to maintain status by the outgroup will be seen as threats to the status of the ingroup (Abrams & Hogg, 1990b). This may be especially true for members of the low status group who identify strongly with their group. The support for the hypothesis that high identifiers in the low status group do not support social creativity beliefs in the

outgroup elaborates on the predictions made by SIT about how groups react to each other. Perceptions of the beliefs of the outgroup are important in trying to change groups attitudes towards each other. High identification with the group for low status group members results in resistance to social change for the outgroup.

## Equal Status

Hypothesis 31 that identification would be related to low outgroup social mobility was not supported. In contrast, to the hypothesis high identification was related to high support of outgroup social mobility beliefs. Other hypotheses were not formed for the equal group, as SIT does not directly predict the beliefs of equal groups.

## High Status:

For the high status group identification was not related to social change beliefs for maintaining positive distinctiveness. Hypotheses 34 and 30 were not supported. The current research provides an insight into how identification contributes to the different belief systems proposed by SIT (Tajfel and Turner, 1979), particularly it highlights the difference between beliefs about the ingroup and the outgroup. The different social change beliefs are affected to differing degrees by different factors, although this was not explicitly predicted by Tajfel and Turner (1970). Identification in the present study was related to beliefs about social creativity for the in and out groups. Identification therefore does seem to be an important factor in beliefs about the use of social creativity to improve the intergroup situation, but not as an important factor in the other social change beliefs

## *Social Change Belief Systems and Acceptance*

Acceptance was also hypothesised to relate to social change beliefs for maintaining status. Separate hypotheses were formed for the low equal and high status groups. Gender groups were also considered separately.

### *Total Sample*

For the total sample high acceptance of the ingroup was related to ingroup social competition (maintaining status) High acceptance towards the outgroup was associated with not supporting social creativity beliefs in the outgroup.

### *Gender Groups*

For the men in the sample high acceptance of the outgroup (women) was related to low support of social creativity beliefs among women. If a group is accepting towards the outgroup they may feel that the outgroup is not entitled, or does not need group action. For the women in the sample high feelings of acceptance were associated with low social competition (maintaining beliefs). When the group boundaries are permeable (or a group feels accepted) there is less need for them to maintain their status through social competition strategies.

### *Status*
### Low and Equal Status

Hypothesis 29 that acceptance would be related to outgroup social mobility beliefs was not supported. For the low and equal status groups' acceptance was not related to outgroup social change beliefs.

High Status:

For the high status group acceptance towards the outgroup was negatively related to outgroup social competition. Similarly to the men in the sample if the high status group is very accepting they do not see a need for the outgroup to take group strategies to improve their status. However if the high status group is accepting towards the outgroup it is expected that they would support social mobility strategies in the outgroup (hypothesis 30) this was not supported.

## *Social Change Belief Systems, Stability and Legitimacy*

Hypothesis 39 that respondents who saw the intergroup situation as legitimate will show less support for social competition beliefs in the outgroup than those who saw the situation as illegitimate was supported. This is similar to research conducted on natural groups by Finchilescu and de la Rey (1991) who found that among the white high status group in their study those who saw the situation as illegitimate showed less discrimination towards the outgroup.

Hypothesis 37 was not supported, in contrast respondents who saw the situation as legitimate had lower beliefs in social competition (maintaining status) than those who saw the situation as illegitimate. This result is inconsistent with SIT that predicts more discrimination when the situation is perceived as legitimate. However there may be less need to maintain the position for those who are securely or legitimately in their position. Hypothesis 32 that respondents who see the intergroup situation as legitimate will have higher support for outgroup social creativity beliefs was not supported. SIT predicts that social creativity can be encouraged in the outgroup as a way of maintaining status as it does not change the intergroup situation. However, it is also possible that social creativity threatens the position of the ingroup so may not be related to legitimacy. Contrary to Hypotheses 33, 38 and 40 and similarly to the ingroup measures, stability beliefs were not related to social change beliefs.

## *Social Change Belief Systems and Predictor Variables*

Rather than a simple and direct relationship between all social change beliefs and identification, acceptance or legitimacy a complicated relationship exists. Different factors are more important for each social change belief. For some acceptance may be the key factor determining choice of strategy for others it may be identification or legitimacy. Other social change beliefs seem to be most affected by gender. The stepwise regression analysis gives more information about the relative importance of the variable to each social change belief. The predictors of each social change belief are summarised in Table 64. Gender and gender identification are the best predictors of outgroup social mobility beliefs. Males were lower in their support of social mobility beliefs in the outgroup than females. Ambition and striving for individual position, which are characteristics of social mobility strategies, may still be seen as undesirable qualities in women, and associated with the masculine role. More research would need to be conducted to further explore this suggestion. High gender identification was associated with outgroup social mobility beliefs. Respondents who identify highly with their gender group may support social mobility in the outgroup as a method of controlling the entry of the outgroup and protecting their own group's status.

Outgroup social creativity is best predicted by gender identification and occupation. High identification with the group was associated with low support of social creativity strategies in the outgroup; once again this reflects a strategy of protecting the group's status. Individuals who identify highly with the group do not want the outgroup using strategies that may improve their position.

Outgroup social competition was best predicted by legitimacy and acceptance. This is consistent with the research by Finchilescu and de la Rey (1991) who found that the high status group was less discriminatory when the intergroup situation was perceived as illegitimate. These findings have implications for changing the status of groups in gender dominated occupations. To change the attitudes of the high status group, it may be necessary to first demonstrate the illegitimacy of the status relations. Similarly, to beliefs about achieving status, women were higher in support for social competition beliefs (for maintaining status) than men were.

Table 64

Variables Predicting Outgroup Social Change Beliefs

| Social Change Belief | First Variable | Second Variable |
|---|---|---|
| Outgroup Social Mobility | Gender | Identification |
| Outgroup Social Creativity | Identification | Occupation |
| Outgroup Social Competition | Legitimacy | Acceptance |
| Ingroup Social Competition (maintaining) | Gender | Occupation |

## *Social Change Belief Systems –Maintaining Positive Distinctiveness Summary*

Measuring the attitudes of the group to the outgroups' social change beliefs adds to knowledge about SIT. Social change beliefs are affected by gender. Female respondents show higher support for social mobility beliefs in the outgroup than men and higher social competition (maintaining status) than men. Women also showed lower support for social competition and social creativity beliefs in the outgroup than men. Status also affects support of social change beliefs in the outgroup, the low status group showed higher support of social mobility beliefs in the outgroup than the high status group, and higher social competition beliefs than the equal and high status groups. The equal group had lower support for outgroup social competition than the high status group. In the low status group identification was related to outgroup social creativity, for the high status group identification was not related to social change beliefs for maintaining positive distinctiveness. Acceptance was not related to social change beliefs for the low and equal group and was negatively related to outgroup social competition in the high status group. In a similar manner to the social change beliefs for achieving status, different beliefs are best predicted by different variables. Ingroup and outgroup beliefs were predicted by the same variables, gender best predicted ingroup and outgroup social mobility. Gender was also the best predictor of social

competition for achieving and maintaining status. Gender identification was the best predictor of both ingroup and outgroup social creativity.

## 7.6 Conclusion

In conclusion, the present study contributes to the research within the SIT paradigm by investigating social change beliefs of groups of low, equal and high status. The study contributed to a gap in research by studying each groups' beliefs about the outgroups' strategies. The information gathered can be useful in improving the welfare of minority members of gender dominated occupations. It also highlights the importance of not treating men working in female dominated occupations in the same manner as women in male dominated occupations, because they do have different situations and experiences.

Female engineers felt conflict between their group membership and their individual needs, but they identified strongly with their gender group. Female engineers saw themselves of low status and disadvantaged by their gender in the workplace. The intergroup situation in both gender dominated occupations was seen as slow to change. Female engineers felt less accepted than did male nurses, and overall nursing was more accepting than engineering. Individuals in both occupations who identified highly with their gender groups did not feel as accepted as individuals who did not identify with their gender group. Males entering nursing find it much easier to assimilate into the female dominated profession than do women entering engineering, who must minimise their gender group membership to feel accepted. A large number of both male and female nurses saw their positions as equal. Although more male nurses saw their position as illegitimate than did female nurses. Acceptance of the group legitimises the position of the groups and is associated with individual beliefs for improving status. When a group sees itself as accepting towards the outgroup it does not support social competition beliefs in the outgroup.

There were larger differences between men and women in their social change beliefs for addressing the status position of the groups than within occupations.

Although engineers focussed more on individual strategies for improvement than did nurses. Men were higher in individual mobility beliefs or ambition than group action. However they realise that individual mobility may not be possible for women, as they do not support this as a strategy for women. Women are higher in collective beliefs for improving their status than men. Men support women's attempts to improve their status. For men high gender identification was related to individual strategies and for women high gender identification was related to collective strategies, this might be reflecting the reality of the different status positions of the genders. For women individual strategies may not be as effective as group action. Experiencing discrimination seems to highlight the futility of individual action and discourage individual mobility beliefs in both men and women.

There were limitations with some of the measures used in the present study. Improvements in the methodology used within the SIT framework is important, for example standard measures would increase the comparability between studies. The measure of social change beliefs may not have adequately found items of relevance to the high status group, and some of these scales had low internal consistency. In addition, the measure may not have been specific enough to each occupation. There were also problems with the measures of salience in the current study. SIT does not claim that salience is stable, which makes it difficult to measure adequately.

The study confirmed many of the predictions of SIT, and began investigation into the predictors of each social change belief. Research should continue studying the different variables that predict social change beliefs rather than focussing narrowly on whether identification affects differentiation, as has been done in the past. More research into the beliefs of high status groups and equal groups will also add to knowledge about intergroup relations.

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# APPENDICES

## Appendix A:

### *Questionnaire One: Female Nurses*

SECTION A:

*Please tell me about yourself:*
*Write down in the space provided the first five important pieces of information about yourself that you think of:*

1) ................................................................................................................................

2) ................................................................................................................................

3) ................................................................................................................................

4) ................................................................................................................................

5) ................................................................................................................................

## SECTION B

*Please circle the number on the right that most accurately reflects your opinion of the*

*following statements:*

| | | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | I identify with women as a group. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. | I am glad to be a woman. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. | I feel held back because I am a woman. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. | I think that women work well together. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. | I see myself as an important part of the group of working women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. | I do not fit in well with other women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. | I consider my gender to be important. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. | I feel uneasy with other women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. | I feel strong ties to other women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:  Please use this space if you wish to comment on your choices:

....................................................................................................................................

....................................................................................................................................

....................................................................................................................................

## SECTION C

INSTRUCTIONS: *Each of the following groups of statements describes various possible opinions about a particular situation or context. For each group of statements, please circle the letter next to the one statement which best represents your own attitude within that context. Please read all of the statements in a group before choosing the one that most clearly reflects your opinion. Choose only one statement within each of the groups of statements.*

### GROUP 1

A.    Men and women share equal responsibilities for all kinds of household tasks, whether indoor or outdoor.

B.    Although gender may have some influence over the types of household tasks individuals choose, there are other factors such as interest and ability that play a bigger role in determining household responsibilities.

C.    There are often differences between men's and women's typical household responsibilities, but the differences are not all related to gender.

D.    Gender is certainly one of the big factors that influence which domestic tasks members of a household will be responsible for.

E.    The particular household tasks that an individual takes responsibility for are virtually always determined by gender differences in interest and ability.

---

### GROUP 2

A.    In a family with children, the parent's child care responsibilities depend on factors other than the gender of either parent.

B.    The gender of each parent in a family is the factor which typically determines who will be primarily responsible for child care.

C.    Although gender plays a small role in determining family child care responsibilities, other factors are more important.

D.    In a family with children, the differences in parental responsibilities for child care are due almost exclusively to the differences between men and women.

E.    The gender differences between men and women at least partially influence a family's decision about which parent will have primary responsibility for child care.

GROUP 3

A.   The choice of a career that will be personally satisfying depends on interests or personality factors that are completely independent of a person's gender.

B.   Gender plays only a minor role in determining how appropriate and satisfying an individual's career choice will be.

C.   Choosing a career that is typically associated with a person's own gender may partly influence career satisfaction, but other factors contribute to career satisfaction as well.

D.   Gender differences in career interests and opportunities are among the primary factors that determine people's satisfaction with their career choices.

E.   A career choice that is consistent with an individual's masculinity or femininity will be the most satisfying.

GROUP 4

A.   I notice that my interactions with different friends are largely influenced by their gender.

B.   Sometimes I have a preference for spending time with a friend of a particular gender, while other times the gender of my friends seems irrelevant.

C.   I behave much differently with my female friends than I do with my male friends.

D.   I find myself acting the same way with different friends, regardless of their gender.

E.   The way I act with different friends are only minimally influenced by their gender.

GROUP 5

A.   It's not obvious why members of one gender should change their names after they are married while members of the other do not.

B.   Gender provides a clear basis for determining the names by which people are addressed once they are married.

C.   How people are addressed after they get married should be based on factors entirely independent of an individual's gender.

D.    There are reasons why gender is a convenient basis for determining married names, but couples should take many other considerations into account in deciding their married names.

E.    Although a few other considerations may be relevant, it makes the most sense to use gender as a rule to determine the name each spouse will be addressed by after marriage.

## GROUP 6

A.    An individual's gender is among the major factors that influence the way he or she makes financial decisions.

B.    An individual's gender is totally irrelevant to the way a person makes financial decisions.

C.    Gender has little to do with an individual's style of making financial decisions.

D.    Although gender partially determines the way an individual goes about making financial decisions, other individual variables are also equally important influences.

E.    Men make very different financial decisions than women make.

## GROUP 7

A.    Men and women very typically have equal access to higher education, without any discrimination on the basis of gender.

B.    Because of basic gender differences, men and women have very different options for gaining access to higher education.

C.    One of the criteria for determining who will be admitted to a programme in higher education is the gender of the applicant.

D.    One of the major factors that determine whether or not an individual will be accepted as a candidate for higher education is the individual's gender.

E.    The differences between men and women in general have little to do with their ability to gain access to higher education.

GROUP 8

A.   Differences in how individuals deal with someone in authority over them might be related to gender differences of the individuals involved, but are more related to a lot of other important personality or situational factors.

B.   Gender doesn't have any influence on how individuals deal with persons in authority over them.

C.   Men's and women's approaches to dealing with authority figures are influenced partly by their genders and basic differences between men and women.

D.   The interaction between an individual's gender and the gender of an authority figure totally determines the ways the individual will behave in authority situations.

E.   The way an individual deals with authority figures is mostly determined by the individual's gender and the gender of the person in authority.

---

GROUP 9

A.   The quality or character of a male same-sex friendship is likely to be slightly different than a female same-sex friendship because of gender-differences.

B.   Men's same-sex friendships are very different from women's same-sex friendships because of significant differences between the genders.

C.   Gender is a major factor that determines what a same-sex friendship will be like.

D.   There are no distinguishable differences between male friendships and female friendships.

E.   Men's friendships and women's friendships are different partly because of gender differences.

---

GROUP 10

A.   Men and women in positions of authority act in ways that are completely unrelated to their gender.

B.   Because of basic gender differences, male authority figures operate in a way that is completely different from the way female authority figures behave.

C. Men and women in authority positions almost always behave differently because of differences between their genders.

D. Gender distinctions sometimes come into consideration when looking at the ways individuals deal with being in positions of authority.

E. A person's gender isn't a very important factor when considering the way she or he acts when she or he is the person in authority.

## GROUP 11

A. Gender differences between men and women have a reasonably big impact on what mixed-sex friendships are normally like.

B. The character of a friendship between a man and a woman is completely independent of their gender differences.

C. Gender differences might play a small role in the nature of a friendship between a man and a woman, but other factors are more critical.

D. Gender differences between men and women make mixed-sex friendships very different from same-sex friendships.

E. The nature of a mixed-sex friendship is partly determined by the differences between the genders.

## GROUP 12

A. It makes a lot of sense to me to use gender as the main rule for deciding the name I or my spouse would use following marriage.

B. Ideally, I feel that gender should be irrelevant to deciding what name I or my spouse would be called by after marriage.

C. In the ideal situation, considerations other than gender would carry the most weight in deciding my or my spouses name after marriage.

D. In my ideal marriage, gender would definitely be the basis for determining my or my spouse's name after I get married.

E. Ideally, it makes sense to me to use gender as part of the basis for deciding my or my spouse's name following marriage.

GROUP 13

A.    In my ideal family, gender would be a convenient way to make many of the decisions about specific household responsibilities.

B.    I think ideally, gender should have only a minor influence on the types of household chores that members of a family perform.

C.    In my ideal family, gender would have nothing to do with who takes responsibility for which specific household tasks.

D.    Ideally, gender distinctions would be the appropriate way to determine the specific household tasks for which my family members take responsibility.

E.    An ideal division of household tasks would not be completely dictated by each family member's gender, but gender may play some role in making those decisions.

# SECTION D

*1. Which of these groups do you think **has** the most advantages in your workplace, at the present time.*

Female Nurses have the most advantages.
If you ticked this box **continue** completing this section (D), then complete Section E on page 9, followed by Section H on page 19.

Male Nurses have the most advantages.
If you ticked this box **continue** completing this section (D), skip Section E and complete Section F on page 12, followed by Section H on page 19.

Female and Male Nurses have equal advantages.
If you ticked this box **continue** completing this section (D), skip Sections E and F and complete Sections G and H beginning on page 15.

*2. Which of these groups do you think **should have** the most advantages in your workplace.*

Female Nurses should have the most advantages

Male Nurses should have the most advantages

Female and Male Nurses should have equal advantages.

*3. Which of these groups do you think **will have** the most advantages in your workplace, in the future.*

Female Nurses will have the most advantages.

Male Nurses will have the most advantages.

Female and Male Nurses will have equal advantages.

*4a. Rate the level of difficulty/ease that you think male nurses experience in integrating with and being accepted by female nurses:*

| Difficult | | | | Neither Easy or Difficult | | | | Easy |
|---|---|---|---|---|---|---|---|---|
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*4b. Rate the level of difficulty/ease that you think female nurses experience in integrating with and being accepted by male nurses:*

| Difficult | | | | Neither easy or difficult | | | | Easy |
|---|---|---|---|---|---|---|---|---|
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

# SECTION E

**Complete this section if you ticked that female nurses have the most advantages in question 1 of Section D.**

*Please circle the number on the right that most accurately reflects the extent to which you agree that <u>male nurses</u> should feel this way:*

| | | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | If men in nursing had as many advantages as women then we would see more men in senior positions. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. | Men are tougher and stronger than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. | Drive and ambition are still important in our workplaces. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. | When male nurses see the kinds of jobs other men are doing they should be satisfied with their own achievements. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. | In general men make better work colleagues than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. | If you want something badly enough you can achieve it, if you work hard enough. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. | It is more important to be logical than it is to be intuitive. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. | As a (numerical) minority men have a lower status than women within nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. | Most people just don't have enough drive and ambition to get on in their careers in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. | The world would be a better place if women were more like men in their values. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 11. Women have an unequal share of status and types of job within nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 12. Men are better at handling situations that involve the potential for violence than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 13. Men should rarely consider how much female colleagues get paid. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 14. Men should be angry about their low status in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. It is important that people make the most of the opportunities they get in their careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. The role of breadwinner is the most important in the family. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. Men must keep on fighting until they have equality with women in all occupations. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. Men and women have equal opportunities in nursing, it's just a matter of having the right personal characteristics for the job. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 19. When male nurses hear about men who stay in the home they should feel good about their careers in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 20. If you're good at your job, then you will be promoted; it's got nothing to do with what gender you are. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 21. Women want to keep large numbers of men from becoming nurses so that they can keep a hold of the power and authority they've always had. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 22. There are so many men in senior positions, there is no excuse for other men not succeeding in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 23. Men's general values and outlook are superior to women's. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 24. When assessing their career progress men should try to compare themselves with other men rather than comparing themselves with women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 25. It's up to each individual person to make the most of the opportunities they have in their workplace. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 26. There is still a lot of prejudice and discrimination within nursing which prevents men achieving their full potential. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects your level of agreement with the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. Reverse discrimination is happening and men take advantage of it. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. Women are better suited emotionally and intellectually for senior positions in nursing than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Women in nursing should be making efforts to maintain and improve their status. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. Positive action for men has made women the disadvantaged gender in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. In nursing men are overrepresented in senior and administrative positions once held by women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:

1) What are the types of strategies (if any) that you notice male nurses using to try and improve the general situation for men in your occupation?

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2) What are your reactions (if any) to the use of these strategies?

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Please use this space if you wish to comment on your choices:

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Now go straight to Section H  (<u>do not</u> complete sections F and G).

## SECTION F

**Complete this section if you ticked that male nurses have the most advantages in question 1 of Section D.**

*Please circle the number on the right that most accurately reflects your opinion of the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. I am proud of the female ability to maintain personal relationships. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. If companies and institutions provided child care facilities then we would see more women in senior positions in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Drive and ambition are overrated in our workplaces. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. If women want to get ahead in their nursing careers there is little to stop them. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. When assessing my career progress I try to compare myself with other women rather than comparing myself with men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Women are better at doing many things at once than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. Women should be angry about their low status in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. I think it is more important to be intuitive than it is to be logical. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. It's up to each individual woman to make the most of the opportunities she has in her workplace. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. When I see the kinds of jobs other women are doing I'm satisfied with my own achievements. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. Women's general values and outlook are superior to men's. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Agree | | | | Neutral | | | | Strongly Disagree |
|---|---|---|---|---|---|---|---|---|---|
| 12. Women must keep on fighting until they have equality with men in all aspects of life; at home and at work. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 13. I regard the choice to stay at home to raise children as the most honourable and valuable contribution a person can make to society. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 14. When I see how little some other women have I feel much better about myself. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. In general women make better work colleagues than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. There is prejudice and discrimination within nursing which prevents women achieving their full potential. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. On the whole women are more versatile and flexible than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. When I hear about women who stay in the home, I feel good about my career in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 19. As a woman I have a lower status in society than a man, even if he is in a similar career to me. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 20. The world would be a better place if men were more like women in their values. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 21. It is important now that women make the most of the freedoms they've got and drop this feminist stuff. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 22. Compared with Muslim women, Western women have no grounds for complaint, they should think themselves lucky. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 23. Men want women to stay in the home so that they can keep a hold on the power and authority that they've always had. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 24. Now that there are so many women in senior positions, there is no excuse for other women not succeeding in their nursing careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 25. Men have an unequal share of status and types of job within nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 26. If you're good at your job, then you'll be promoted; it's got nothing to do with what gender you are. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 27. Women are more sensitive and caring than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 28. Men and women have equal opportunities within nursing, it's just a matter of having the right personal characteristics for the job. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:

1) What are the types of strategies that you use (if any) to try to improve the general situation for women in your occupation?

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2) What sort of reactions are these strategies met with by other female nurses?

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3) What sort of reactions are these strategies met with by male nurses? .............................................................................................

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Please use this space if you wish to comment on your choices:

Now go straight to Section H (do not complete Section G).

## SECTION G
**Complete this section if you ticked that male nurses and female nurses have equal advantages in question 1 of Section D.**

*Please circle the number on the right that most accurately reflects the extent to which you agree that_male nurses_ should feel this way:*

|  | Strongly Disagree | | | | Neutral | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| 1. Men are tougher and stronger than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. When male nurses see the kinds of jobs other men are doing they should be satisfied with their own achievements. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. In general men make better work colleagues than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. If you want something badly enough you can achieve it, if you work hard enough. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. It is more important to be logical than it is to be intuitive. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Most people just don't have enough drive and ambition to get on in their careers in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. The world would be a better place if women were more like men in their values. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. Women have an unequal share of status and types of job within nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. Men are better at handling situations that involve the potential for violence than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. Men should be angry about their low status in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. It is important that people make the most of the opportunities they get in their careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 12. The role of breadwinner is the most important in the family. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 13. Men must keep on fighting until they have equality with women in all occupations. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 14. When male nurses hear about men who stay in the home they should feel good about their careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. Women want to keep large numbers of men from becoming nurses so that they can keep a hold of the power and authority they've always had. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. When assessing their career progress men should try to compare themselves with other men rather than comparing themselves with women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. Men should be proud of the natural authority and leadership skills that they possess. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. It's up to each individual person to make the most of the opportunities they have in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects your opinion of the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. I am proud of the female ability to maintain personal relationships. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. If companies and institutions provided child care facilities then we would see more women in senior positions in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Drive and ambition are overrated in our workplaces. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. Positive action for men has made women the disadvantaged gender in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. When assessing my career progress I try to compare myself with other women rather than comparing myself with men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Women are better at doing many things at once than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 7. Women should be angry about their low status in nursing. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. Reverse discrimination is happening and men take advantage of it. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. If you're good at your job, then you'll be promoted it's got nothing to do with what gender you are. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. Women's general values and outlook are superior to men's. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. Women are better suited emotionally and intellectually for senior positions in nursing than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 12. I regard the choice to stay at home to raise children as the most honourable and valuable contribution a person can make to society. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 13. When I see how little some other women have I feel much better about myself. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 14. There is a lot of prejudice and discrimination within nursing which prevents women achieving their full potential. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. Now that there are so many women in senior positions, there is no excuse for other women not succeeding in their nursing careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. On the whole women are more versatile and flexible than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. Women in nursing should be making efforts to maintain and improve their status. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. As a woman I have a lower status in society than a man, even if he is in a similar career to me. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 19. Compared with Muslim women, Western women have no grounds for complaint, they should think themselves lucky. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 20. Men are over represented in senior and administrative positions once held by women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 21. Women are more sensitive and caring than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 22. Men and women have equal opportunities in nursing, it's just a matter of having the right personal characteristics for the job. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:

1) What are the types of strategies that you use (if any) to try to improve the general situation for women in this occupation?

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2) What sort of reactions are these strategies met with by other women?

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3) What sort of reactions are these strategies met with by men? ..................................................................................

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4) What are the types of strategies (if any) that you notice male nurses using to try and improve the general situation for men in your occupation?

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Please use this space if you wish to comment on your choices:

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## Please Continue by Completing Section H

## SECTION H

*In order for me to describe my sample can you please answer the following demographic questions:*

(Circle correct answers)

1. Sex:    M    F

2. Age: ................ (Years Only)

3. What is your current position?............................................................

4. How long have you been in this current position? ..............................(Years Only)

5. What is your current working situation?

1. Full- Time Employment        (30 hours or more a week)

2. Part-time Employment        (less than 30 hours a week)

6. What is the highest level of formal education  that you have achieved?

1. School Certificate (or equivalent)

2. University Entrance (or equivalent)

3. Tertiary Qualification/ Nursing Diploma: ..........................................................................

4. Postgraduate diplomas or certificates:...............................................................................

5. Postgraduate degree:.........................................................................................................

7. How many female nurses (including yourself) are there in your immediate workgroup?

   .....................

8. How many male nurses  are there in your immediate workgroup? ..............................

9. How much discrimination or prejudice because of your gender have you experienced in your present position?

| No prejudice<br>or Discrimination | | | | A medium amount<br>of prejudice or Discrimination | | | | A lot<br>Dis |
|---|---|---|---|---|---|---|---|---|
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | |

10. What is your current marital status?

1. Single

2. Married

3. Divorced or separated

4. Widowed

5. Living with a partner

11. With what ethnic background do you primarily identify yourself?

1. New Zealander of European descent

2. Maori

3. Pacific Peoples

4. South East Asian

5. North Asian

6. Other .............................................................(please specify)

## *Questionnaire Two: Male Engineers*

## SECTION A

*Please tell me about yourself:*
*Write down in the space provided the first five important pieces of information about yourself*
*that you think of:*

1) ..................................................................................................................................

2) ..................................................................................................................................

3) ..................................................................................................................................

4) ..................................................................................................................................

5) ..................................................................................................................................

## SECTION B

*Please circle the number on the right that most accurately reflects your opinion of the following statements:*

|  |  | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | I identify with men as a group. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. | I am glad to be a man. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. | I feel held back because I am a man. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. | I think that men work well together. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. | I see myself as an important part of the group of working men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. | I do not fit in well with other men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. | I consider my gender to be important. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. | I feel uneasy with other men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. | I feel strong ties to other men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:  Please use this space if you wish to comment on your choices:

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## SECTION C

<u>INSTRUCTIONS:</u> *Each of the following groups of statements describe various possible opinions about a particular situation or context. For each group of statements, please circle the letter next to the one statement which best represents your own attitude within that context. Please read all of the statements in a group before choosing the one that most clearly reflects your opinion. <u>Choose only one statement</u> within each of the groups of statements.*

### GROUP 1

A.  Men and women share equal responsibilities for all kinds of household tasks, whether indoor or outdoor.

B.  Although gender may have some influence over the types of household tasks individuals choose, there are other factors such as interest and ability that play a bigger role       in determining household responsibilities.

C.  There are often differences between men's and women's typical household responsibilities, but the differences are not  all related to gender.

D.  Gender is certainly one of the big factors that influence which domestic tasks members of a household will be responsible for.

E.  The particular household tasks that an individual takes responsibility for are virtually always determined by gender differences in interest and ability.

---

### GROUP 2

A.  In a family with children, the parent's child care responsibilities depend on factors other than the gender of either parent.

B.  The gender of each parent in a family is the factor which typically determines who will be primarily responsible for child care.

C.  Although gender plays a small role in determining family child care responsibilities, other factors are more important.

D.  In a family with children, the differences in parental responsibilities for child care are due almost exclusively to the differences between men and women.

E.  The gender differences between men and women at least partially influence a family's decision about which parent will have primary responsibility for child care.

## GROUP 3

A.   The choice of a career that will be personally satisfying depends on interests or personality factors that are completely independent of a person's gender.

B.   Gender plays only a minor role in determining how appropriate and satisfying an individual's career choice will be.

C.   Choosing a career that is typically associated with a person's own gender may partly influence career satisfaction, but other factors contribute to career satisfaction as well.

D.   Gender differences in career interests and opportunities are among the primary factors that determine people's satisfaction with their career choices.

E.   A career choice that is consistent with an individual's masculinity or femininity will be the most satisfying.

## GROUP 4

A.   I notice that my interactions with different friends are largely influenced by their gender.

B.   Sometimes I have a preference for spending time with a friend of a particular gender, while other times the gender of my friends seems irrelevant.

C.   I behave much differently with my female friends than I do with my male friends.

D.   I find myself acting the same way with different friends, regardless of their gender.

E.   The ways I act with different friends are only minimally influenced by their gender.

## GROUP 5

A.   It's not obvious why members of one gender should change their names after they are married while    members of the other do not.

B.   Gender provides a clear basis for determining the names by which people are addressed once they are married.

C.   How people are addressed after they get married should be based on factors entirely independent of an individual's gender.

D.   There are reasons why gender is a convenient basis for determining married names, but couples should take many other considerations into account in deciding their married names.

E.   Although a few other considerations may be relevant, it makes the most sense to use gender as a rule to determine the name each spouse will be addressed by after marriage.

GROUP 6

A. An individual's gender is among the major factors that influence the way he or she makes financial decisions.

B. An individual's gender is totally irrelevant to the way a person makes financial decisions.

C. Gender has little to do with an individual's style of making financial decisions.

D. Although gender partially determines the way an individual goes about making financial decisions, other individual variables are also equally important influences.

E. Men make very different financial decisions than women make.

---

GROUP 7

A. Men and women very typically have equal access to higher education, without any discrimination on the basis of gender.

B. Because of basic gender differences, men and women have very different options for gaining access to higher education.

C. One of the criteria for determining who will be admitted to a programme in higher education is the gender of the applicant.

D. One of the major factors that determine whether or not an individual will be accepted as a candidate for higher education is the individual's gender.

E. The differences between men and women in general have little to do with their ability to gain access to higher education.

---

GROUP 8

A. Differences in how individuals deal with someone in authority over them might be related to gender differences of the individuals involved, but are more related to other important personality or situational factors.

B. Gender doesn't have any influence on how individuals deal with persons in authority over them.

C. Men's and women's approaches to dealing with authority figures are influenced partly by their genders and basic differences between men and women.

D. The interaction between an individual's gender and the gender of an authority figure totally determines the ways in which the individual will behave in authority situations.

E.   The way an individual deals with authority figures is mostly determined by the individual's gender and the gender of the person in authority.

## GROUP 9

A.   The quality or character of a male same-sex friendship is likely to be slightly different than a female same-sex friendship because of gender-differences.

B.   Men's same-sex friendships are very different from women's same-sex friendships because of significant differences between the genders.

C.   Gender is a major factor that determines what a same-sex friendship will be like.

D.   There are no distinguishable differences between male friendships and female friendships.

E.   Men's friendships and women's friendships are different partly because of gender differences.

## GROUP 10

A.   Men and women in positions of authority act in ways that are completely unrelated to their gender.

B.   Because of basic gender differences, male authority figures operate in a way that is completely different from the way female authority figures behave.

C.   Men and women in authority positions almost always behave differently because of differences between their genders.

D.   Gender distinctions sometimes come into consideration when looking at the ways individuals deal with being in positions of authority.

E.   A person's gender isn't a very important factor when considering the way she or he acts when she or he is the person in authority.

## GROUP 11

A.   Gender differences between men and women have a reasonably big impact on what mixed-sex friendships are normally like.

B.   The character of a friendship between a man and a woman is completely independent of their gender differences.

C.   Gender differences might play a small role in the nature of a friendship between a man and a woman, but other factors are more critical.

D.    Gender differences between men and women make mixed-sex friendships very different from same-sex friendships.

E.    The nature of a mixed-sex friendship is partly determined by the differences between the genders.

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GROUP 12

A.    It makes a lot of sense to me to use my gender as the main rule for deciding the name I would use following marriage.

B.    Ideally, I feel that my gender should be irrelevant to deciding what name I would be called by after marriage.

C.    In the ideal situation, considerations other than my gender would carry the most weight in deciding my name after marriage.

D.    In my ideal marriage, my gender would definitely be the basis for determining my name after I get married.

E.    Ideally, it makes sense to me to use my gender as part of the basis for deciding my name following marriage.

---

GROUP 13

A.    In my ideal family, gender would be a convenient way to make many of the decision about specific household responsibilities.

B.    I think gender should have only a minor influence of the types of household chores that members of a family perform.

C.    In my ideal family, gender would have nothing to do with who takes responsibility for which specific household tasks.

D.    Ideally, gender distinctions would be the appropriate way to determine the specific household tasks for which my family members take responsibility.

E.    An ideal division of household tasks would not be completely dictated by each family member's gender, but gender may play some role in making those decisions.

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Optional:  Please use this space if you wish to comment on your choices:

............................................................................................................................

## SECTION D

*1. Which of these groups do you think  **has** the most advantages in your profession, at the present time.*

Women have the most advantages in my profession.

Men have the most advantages in my profession.

Women and men have equal advantages in my profession.

*2. Which of  these groups do you think **should have** the most advantages in your profession.*

Women should have the most advantages in my profession.

Men  should have the most advantages in my profession.

Women and men should have equal advantages in my profession.

*3. Which of these groups do you  think **will have** the most advantages in your profession, in the future.*

Women  will have the most advantages in my profession.

Men will have the most advantages in my profession.

Women and men will be equally advantaged in my profession.

Optional:  Please use this space if you wish to comment on your choices:

.................................................................................................................................

.................................................................................................................................

*Please circle the number on the right that most accurately reflects your opinion:*

| | | Low Status | | | | | | | | High Status |
|---|---|---|---|---|---|---|---|---|---|---|
| 4. | I see **women** in my profession as having: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. | I see **men** in my profession as having: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | | Unfair | | | | | | | | Fair |
|---|---|---|---|---|---|---|---|---|---|---|
| 6. | I see **women's** status in my profession as: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. | I see **men's** status in my profession as: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | | Worse | | | No Change | | | | Improved |
|---|---|---|---|---|---|---|---|---|---|---|
| 8. | Compared to their current position, I think **women's** future status in my profession will be: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. | Compared to their current position, I think **men's** future status in my profession will be: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

| | | Difficult | | | | | | | | Easy |
|---|---|---|---|---|---|---|---|---|---|---|
| 10. | Rate the level of ease or difficulty that you think **women** experience in integrating with and being accepted by men in your profession: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. | Rate the level of ease or difficulty that you think **men** experience in integrating with and being accepted by women in your profession: | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

# SECTION E

*Please circle the number on the right that most accurately reflects the extent to which you agree that **female engineers** should feel this way:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. Women should be proud of the female ability to maintain personal relationships. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. If the more companies provided child care facilities then we would see more women in senior positions. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Drive and ambition are overrated in our workplaces. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. If women want to get ahead in their careers as engineers there is little to stop them. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. When assessing their career progress women should try to compare themselves with other women rather than comparing themselves with men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Women are better at doing many things at once than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. Women should be angry about their low status in the engineering profession. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. It is more important to be intuitive than it is to be logical. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. It's up to each individual woman to make the most of the opportunities she has in her workplace. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. When women engineers see the kinds of jobs other women are doing they should be satisfied with their own achievements. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. Women's general values and outlook are superior to men's. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 12. Women must keep on fighting until they have equality with men in all aspects of life; at home and at work. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects the extent to which you agree that **female engineers** should feel this way:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 13. The choice to stay at home to raise children is the most honourable and valuable contribution a person can make to society. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 14. When women see how little some other women have they should feel much better about themselves. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. In general women make better work colleagues than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. There is still a lot of prejudice and discrimination within the engineering profession which prevents women achieving their full potential. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. On the whole women are more versatile and flexible than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. When women engineers hear about women who stay in the home, they should feel good about their careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 19. A woman has a lower status in society than a man, even if she is in a similar career to him. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 20. The world would be a better place if men were more like women in their values. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 21. It is important now that women make the most of the freedoms they've got and drop this feminist stuff. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 22. Compared with Muslim women, Western women have no grounds for complaint, they should think themselves lucky. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 23. Men want women to stay in the home so that they can keep a hold on the power and authority that they've always had. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 24. Now that there are so many women in senior positions, there is no excuse for other women not succeeding in their careers as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 25. Men have an unequal share of status and types of job as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 26. If you're good at your job, then you'll be promoted it's got nothing to do with what gender you are. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects the extent to which you agree that **female engineers** should feel this way:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 27. Women are more sensitive and caring than men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 28. Men and women have equal opportunities as engineers, it's just a matter of having the right personal characteristics for the job. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects your level of agreement with the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. If companies and institutions gave men as many advantages as women then we would see more men in senior positions. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. Positive or reverse discrimination is happening and women take advantage of it. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Men are better suited emotionally and intellectually for senior positions, as engineers than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. Men should be making efforts to maintain and improve their status as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. Positive discrimination towards women has now made men the disadvantaged gender. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Women with children should stay at home and free up more jobs for men. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:

1) What are the types of strategies (if any) that you notice female engineers using to try and improve the general situation for women in your profession?

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2) What are your reactions (if any) to the use of these strategies?

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Please use this space if you wish to comment on your choices:

# SECTION F

*Please circle the number on the right that most accurately reflects **your** opinion of the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 1. If companies gave men as many advantages as women then we would see more men in senior positions. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 2. Men's general values and outlook are superior to women's. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 3. Drive and ambition and still important in our workplaces. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 4. Most people just don't have enough drive and ambition, to get on in their careers as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 5. Men are better at handling situations that involve the potential for violence than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 6. Men should be angry about their low status as within the engineering profession. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 7. Men are tougher and stronger than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 8. If you want something badly enough you can achieve it, if you work hard enough. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 9. I think it is more important to be logical than it is to be intuitive. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 10. In general men make better work colleagues than women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 11. There is prejudice and discrimination which prevents men from achieving their full potential as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 12. I rarely consider how much my female colleagues get paid. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 13. It is important that people make the most of the opportunities they get in their careers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

*Please circle the number on the right that most accurately reflects **your** opinion of the following statements:*

| | Strongly Disagree | | | | Neutral | | | | Strongly Agree |
|---|---|---|---|---|---|---|---|---|---|
| 14. When I hear about men who stay in the home I feel good about my career as an engineer. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 15. There are so many men in senior positions, there is no excuse for other men not succeeding as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 16. The role of breadwinner is the most important in the family. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 17. Women have an unequal share of status and types of job as engineers. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 18. Men and women have equal opportunities as engineers, it's just a matter of having the right personal characteristics for the job. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 19. When I see the kinds of jobs other men are doing I'm satisfied with my own achievements. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 20. Men must keep on fighting until they have equality with women in all occupations. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 21. The world would be a better place if women were more like men in their values. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 22. If you're good at your job, then you will be promoted it's got nothing to do with what gender you are. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 23. When assessing my career progress I try to compare myself with other men rather than comparing myself with women. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 24. It's up to each individual person to make the most of the opportunities they have in their workplace. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 25. I think it is more important to be professional than it is to be caring. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 26. Compared with male nurses, male engineers have no grounds for complaint they should think themselves lucky. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 27. I am proud of the natural authority and leadership skills that men possess. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| 28. Positive discrimination towards women has now made men the disadvantaged gender. | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

Optional:

1) What are the types of strategies that you use (if any) to try to improve the general situation for men in your profession?

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2) What sort of reactions are these strategies met with by other male engineers?

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3) What sort of reactions are these strategies met with by female engineers?

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Please use this space if you wish to comment on your choices:

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## SECTION H

*In order for me to describe my sample can you please answer the following demographic questions:*

(Circle correct answers)

1.  Sex:   M   F                    2.  Age: ................ (Years Only)

3.  What is your working situation?...................(eg: self-employed, consultant,etc)

4.  What is your field of engineering?...........……………………………………..

5.  How long have you been in this current position? ............................(Years Only)

6.  What is your current working situation?

    1.  Full- Time Employment   (30 hours or more a week)

    2.  Part-time Employment    (less than 30 hours a week)

7.  What is the highest level of education that you have achieved?

    1.  School Certificate (or equivalent)

    2.  University Entrance (or equivalent)

    3.  Tertiary Qualification::................................................................ (please specify)

    4.  Postgraduate diplomas or certificates:......................................... (please specify)

    5.  Postgraduate degree:................................................................. (please specify)

8.  How many women  are there in your immediate workgroup?...............................

9.  How many men (including yourself) are there in your immediate workgroup?........

10.  How much discrimination or prejudice because of your gender have you experienced in your present position?

| No prejudice or discrimination | | A medium amount of prejudice or discrimination | | | | | A lot of prejudice or discrimination |
|---|---|---|---|---|---|---|---|
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

11.  What is your current marital status?

    1.  Single

    2.  Married

    3.  Divorced or separated

    4.  Widowed

    5.  Living with a partner

11.  With what ethnic background do you primarily identify yourself?

    1.  New Zealander of European descent

2. Maori

3. Pacific Peoples

4. South East Asian

5. North Asian

6. Other .........................................................(please specify)

# Appendix B – Social Change Belief Systems Items
# Prepilot and Pilot Study

Items also used in the main study are identified with an asterisk.  Items changed for use in the main study are identified with a plus sign. The remaining items were not used in the main study.

## *Female Questionnaire:*
### *Social Mobility*

1       Women have only themselves to blame for their position in society.

12      Most women don't have enough drive and ambition to get on.

15      If you want something badly enough you can achieve it, if you work hard enough.

18      I rarely think about women as a group.

23*     If women want to get ahead there is little to stop them.

26      The only way women's position in society will change is if women like me continue to get better jobs.

35*     It's up to each individual woman to make the most of the opportunities she has.

36*     It is important now that women make the most of the freedoms they've got and drop this feminist stuff.

38*     Now that there are so many women in high status jobs, there is no excuse for other women not succeeding at work.

39      I regard myself as different to other women.

42      I believe that if women were as ambitious as men they would be more successful.

44*    If you're good at your job, then you'll get promotion it's got nothing to do with what sex you are.

45*    Men and women have equal opportunities, it's just a matter of having the right personal characteristics for the job.

*Social Creativity*

## New Dimension:

4      I don't have to prove that I can do what a man can do to feel good about myself.

13*    In general women make better work colleagues than men.

19     Women are better at managing interpersonal relationships at work.

20*    In their general values and outlook, women are superior to men.

21+    Women are good at doing lots of things at once.  On the whole women are more versatile and flexible than men.

43*    I don't envy the role of breadwinner, I think women get a much better deal out of life.

46*    Women are more sensitive and caring than men.

## Changing the Value:

2+     I am proud of the female culture of emotion, intuition, love, and personal relationships and see them as the most essential human characteristics.

5*     Drive and ambition are overrated in our society.

6*     I regard the ability to nurture children as the most honourable and valuable contribution a person can make to society.

16*    I think it is as important to be intuitive as it is to be logical.

17*    The world would be a better place if men were more like women in their values.

33     The ability to care, sensitivity and selflessness are the most important qualities a person can have.

Changing the Outgroup:

8+    I try to compare myself with other women rather than comparing myself with men.

10*   When I see the kinds of jobs other women are doing I'm satisfied with my own achievements.

22    My generation have had so much more opportunity than my mother's generation had and I am grateful for that.

25*   When I see how little some other women have I feel much better about myself.

29*   When I hear about women who stay in the home, I feel good about my job.

37*   Compared with Muslim women, western women have no grounds for complaint, they should think themselves lucky.


*Social Competition*

3*    If companies and institutions treated women equally and provided child care facilities then we would see more women in powerful jobs.

7     When you get right down to the basics, women are an oppressed group and men are the oppressors.

9     I don't think that the position of women at work will improve unless women act as a group rather than as individuals.

11+   A lot of women are better suited emotionally and intellectually for positions of power than men.

14    If there is a choice between a man and a woman who are equally qualified for a job then as a woman you should employ the woman.

24    It make me angry that men and women can often earn different amounts for doing the same job.

28    There is nothing intrinsic to women that automatically makes them better mothers and housekeepers.

27*   Women should be angry about their low status in society

30*  Women must keep on fighting until they have equality with men in all aspects of life; at home and at work.

31  A woman should always try and support other women at work.

32*  There is still a lot of prejudice and discrimination which prevents women achieving their full potential.

34*  As a woman I have a lower status in society than a man, even if he does a similar job to me.

40*  Men want to keep women in the home so that they can keep a hold on the power and authority that they've always had.

41+  Men have an unequal share of status and wealth.

## Male Questionnaire
### Social Mobility

1  Men have only themselves to thank for their position in society.

12*  Most people just don't have enough drive and ambition to get on.

15*  If you want something badly enough you can achieve it, if you work hard enough.

18  I rarely think about men as a group.

23  If men want to get ahead there is little to stop them.

26  The only way men will maintain their position in society is if men like me continue to get better jobs.

35*  It's up to each individual person to make the most of the opportunities they have.

36*  It is important that people make the most of the opportunities they've got.

38*  There are so many men in high status jobs, there is no excuse for other men not succeeding at work.

39  I regard myself as different from other men.

42  I believe that ambitious people will be more successful.

44*    If you're good at your job, then you will get promotion it's got nothing to do with what sex you are.

45*    Men and women have equal opportunities, it's just a matter of having the right personal characteristics for the job.

## *Social Creativity*

### New Dimension:

4*    Men are tougher and stronger than women.

13*    In general men make better work colleagues than women.

20*    In their general values and outlook, men are superior to women.

21*    Men are better at handling situations that involve the potential for violence than women.

43*    The role of breadwinner is the most important in the family.

### Outgroup New Dimension

19    Women are better than men at managing interpersonal relations at work.

46*    Women are more sensitive and caring than men.

### Changing the Values

5*    Drive and ambition are still important in our society.

16*    I think it is more important to be logical than it is to be intuitive.

17*    The world would be a better place if women were more like men in their values.

### Outgroup Changing the Values

2+    I see emotion, intuition , love and the ability to maintain personal relationships as the most essential human characteristics.

6+     I regard the ability to nurture children as the most honorable and valuable contribution a person can make to society.

33     The ability to care, show sensitivity and selflessness are the most important qualities a person can have.

## Changing the Outgroup

8+     I try to compare myself with other men rather than comparing myself with women.

10*    When I see the kinds of jobs other men are doing I'm satisfied with my own achievements.

25*    I rarely consider how much my female colleagues get paid.

29*    When I hear about men who stay in the home I feel good about my job.

## Outgroup Changing the Outgroup

22     This generation of women have had so many more opportunities than their mother's generation has and they should be grateful for that.

37*    Compared with Muslim women, western women have no grounds for complaint, they should think themselves lucky.

## Social Competition

3*     If companies and institutions gave men as many advantages as women then we would see more men in powerful jobs.

9      I don't think that men can hold their position in the workplace unless men act as a group rather than as individuals.

14     If there is a choice between a man and a woman who are equally qualified for a job then as a man you should employ the man.

27+    Men should be making efforts to maintain their status in society.

28     Women intrinsically make better mothers and housekeepers than men.

31      A man should always try and support other men at work.

32      Women are now equal with men in society and should drop this feminist stuff.

34      As a man I have a higher status in society than a woman, even if she does a similar job to me.

41*     Women have an unequal share of status and wealth.

## Items retained in the main study for Social Competition (maintaining status).

7       Positive or reverse discrimination is happening and women take advantage of it.

11      Men are better suited emotionally and intellectually for positions of power than women.

24+     Men with families to support deserve to be paid more than women.

30      Positive action for women has now made men the disadvantaged sex.

40      Women with children should stay at home and free up more jobs for men.

# APPENDIX C – Social Change Belief Systems Items

## Main Study

### *Male Ingroup Items*

#### *Social Mobility*

9     Most people just don't have enough drive and ambition to get on in their careers in nursing.

6     If you want something badly enough you can achieve it, if you work hard enough.

15    It is important that people make the most of the opportunities they get in their careers.

18    Men and women have equal opportunities in nursing/engineering, it's just a matter of having the right personal characteristics for the job.

20    If you're good at your job, then you will be promoted it's got nothing to do with what gender you are.

22    There are so many men in senior positions, there is no excuse for other men not succeeding in their nursing/engineering careers.

25    It's up to each individual person to make the most of the opportunities they have in their workplace.

#### *Social Creativity*

Changing the Values

3     Drive and ambition are still important in our workplaces.

7     I think it is more important to be logical than it is to be intuitive.

10    The world would be a better place if women were more like men in their values.

27    I think it is more important to be clinical than it is to be emotional (nurses).
      I think it is more important to be professional than it is to be caring (engineers).

29    I am proud of the natural authority and leadership skills that men possess.

New Dimension:

2    Men are tougher and stronger than women.

5    In general men make better work colleagues than women.

12   Men are better at handling situations that involve the potential for violence than women.

16   The role of breadwinner is the most important in the family.

23   Men's general values and outlook are superior to women's.

Changing the Outgroup

4    When I see the kinds of jobs other men are doing I'm satisfied with my own achievements.

13   I rarely consider how much my female colleagues get paid.

19   When I hear about men who stay in the home I feel good about my career in nursing/engineering.

24   When assessing my career progress I try to compare myself with other men rather than comparing myself with women.

28   Compared with male early childhood teachers, male nurses have no grounds for complaint, they should think themselves lucky (nurses).
     Compared with male nurses, male engineers have no grounds for complaint, they should think themselves lucky (engineers).

*Social Competition*

1    If men in nursing/engineering had as many advantages.
     as women then we would see more men in senior positions.

8　　As a (numerical) minority I have a lower status than a woman within nursing/engineering.

11　　Women have an unequal share of status and types of job within nursing.

14　　Men should be angry about their low status in nursing/engineering.

17　　Men must keep on fighting until they have equality with women in all occupations.

21　　Women want to keep large numbers of men from becoming nurses so that they can keep a hold of the power and authority they've always had  (nurses only).

26　　There is still a lot of prejudice and discrimination which prevents men achieving their full potential in nursing/ as engineers.

28　　Positive discrimination towards women has now made men the disadvantaged gender (engineers only).

## *Male Outgroup Items*

### Social Mobility

4　　If women want to get ahead in their careers in their nursing careers/as engineers there is little to stop them.

9　　It's up to each individual woman to make the most of the opportunities she has in her workplace.

21　　It is important now that women make the most of the freedoms they've got and drop this feminist stuff.

24　　Now that there are so many women in senior positions, there is no excuse for other women not succeeding in their careers in their nursing careers/as engineers.

26　　If you're good at your job, then you'll be promoted it's got nothing to do with what gender you are.

28　　Men and women have equal opportunities in nursing/ as engineers , it's just a matter of having the right personal characteristics for the job.

*Social Creativity*

## Changing The Values

1 Women should be proud of the female ability to maintain personal relationships.

3 Drive and ambition are overrated in our workplaces.

8 It is more important to be intuitive than it is to be logical.

13 The choice to stay at home to raise children is the most honourable and valuable contribution a person can make to society.

20 The world would be a better place if men were more like women in their values.

## New Dimension

6 Women are better at doing many things at once than men.

11 Women's general values and outlook are superior to men's.

15 In general women make better work colleagues than men.

17 On the whole women are more versatile and flexible than men.

27 Women are more sensitive and caring than men.

## Changing the Outgroup

5 When assessing their career progress women should try to compare themselves with other women rather than comparing themselves with men.

10 When women see the kinds of jobs other women are doing they should be satisfied with their own achievements.

14 When women see how little some other women have they should feel much better about themselves.

18 When female nurses/engineers hear about women who stay in the home, they should feel good about their careers in nursing/engineering.

22 Compared with Muslim women, Western women have no grounds for complaint, they should think themselves lucky.

## *Outgroup Social Competition*

2   If the police provided child care facilities then we would see more women in senior  positions (in nursing).

7   Women should be angry about their low status in nursing/ as engineers.

12   Women must keep on fighting until they have equality with men in all aspects of life, at home and at work.

16   There is still a lot of prejudice and discrimination within nursing/engineering which     prevents women achieving their full potential.

19   A woman has a lower status in society than a man, even i f she is in a  similar career     to him.

23   Men want women to stay in the home so that they can keep a hold on the power and authority that they've always had.

25   Men have an unequal share of status and types of job within nursing/as engineers.

## *Ingroup Social Competition  (maintaining status)*

1   If companies and institutions gave men as many advantages as women then we would see more men in senior positions.

2   Affirmative action is necessary for men to maintain and improve their status within nursing (nurses).
Positive or reverse discrimination is happening and women take advantage of it (engineers).

3   Men are better suited emotionally and intellectually for senior positions within nursing/engineering than women.

4   Men should be making efforts to maintain their status within nursing/engineering.

5   Positive action for women has now made men the disadvantaged gender (engineering only).

6   Women with children should stay at home and free up more jobs for men.

## *Female Ingroup Items*
### *Social Mobility*

4   If women want to get ahead in their nursing/engineering careers there is little to stop them.

9   It's up to each individual woman to make the most of the opportunities she has in her workplace.

21   It is important now that women make the most of the freedoms they've got and drop this feminist stuff.

24   Now that there are so many women in senior positions, there is no excuse for other women not succeeding in their nursing careers/ as engineers.

26   If you're good at your job, then you'll be promoted it's got nothing to do with what gender you are.

28   Men and women have equal opportunities in nursing/ as engineers , it's just a matter of having the right personal characteristics for the job.

### *Social Creativity*
### Changing The Values

1   I am proud of the female ability to maintain personal relationships.

3   Drive and ambition are overrated in our workplaces.

8   I think it is more important to be intuitive than it is to be logical.

13   I regard the choice to stay at home  to raise children as the most honourable and valuable contribution a person can make to society.

20   The world would be a better place if men were more like women in their values.

### New Dimension

6   Women are better at doing many things at once than men.

11   Women's general values and outlook are superior to men's.

15    In general women make better work colleagues than men.

17    On the whole women are more versatile and flexible than men.

27    Women are more sensitive and caring than men.

## Changing the Outgroup

5    When assessing my career progress I try to compare myself with other women rather than comparing myself with men.

10    When I see the kinds of jobs other women are doing I'm satisfied with my own achievements.

14    When I see how little some other women have I feel much better about myself.

18    When I hear about women who stay in the home, I feel good about my career in nursing/as an engineer.

22    Compared with Muslim women, Western women have no grounds for complaint, they should think themselves lucky.

### *Social Competition*

2    If companies and institutions provided child care facilities then we would see more women in senior positions in nursing/engineering.

7    Women should be angry about their low status in nursing/as engineers.

12    Women must keep on fighting until they have equality with men in all aspects of life; at home and at work.

16    There is still a lot of prejudice and discrimination within nursing/engineering which prevents women achieving their full potential.

19    As a woman I have a lower status in society than a man, even if he is in a similar career to me.

23    Men want women to stay in the home so that they can keep a hold on the power and authority that they've always had.

25    Men have an unequal share of status and types of job within nursing/engineering.

## *Female Outgroup Items*
### *Social Mobility*

6     If you want something badly enough you can achieve it, if you work hard enough.

9     Most people just don't have enough drive and ambition to get on in their careers in nursing/engineering.

15    It is important that people make the most of the opportunities they get in their careers.

18    Men and women have equal opportunities in nursing/engineering, it's just a matter of having the right personal characteristics for the job.

20    If you're good at your job, then you will be promoted it's got nothing to do with what gender you are.

22    There are so many men in senior positions, there is no excuse for other men not succeeding in nursing/engineering.

25    It's up to each individual person to make the most of the opportunities they have in their workplace.


### *Social Creativity*
### Changing the Values

3     Drive and ambition are still important in our workplaces.

7     It is more important to be logical than it is to be intuitive.

10    The world would be a better place if women were more like men in their values.

27    It is more important to be clinical than it is to be emotional (nurses)

       It is more important to be professional than it is to be caring (engineers).

29    Men should be proud of the natural authority and leadership skills that they possess.

## New Dimension

2    Men are tougher and stronger than women.

5    In general men make better work colleagues than women.

12    Men are better at handling situations that involve the potential for violence than women.

16    The role of breadwinner is the most important in the family.

23    Men's general values and outlook are superior to women's.

## Changing the Outgroup

4    When male nurses/engineers  see the kinds of jobs other men are doing the should be satisfied with their own achievements.

13    Men should rarely consider how much female colleagues get paid.

19    When male nurses/engineers hear about men who stay in the home they should feel good about their careers in nursing.

24    When assessing their career progress men should try to compare myself with other men rather than comparing themselves with women.

28    Compared with male early childhood teachers, male nurses have no grounds for complaint, they should think themselves lucky (nurses).
Compared with male nurses, male engineers have no grounds for complaint they should think themselves lucky (engineers).

### *Outgroup Social Competition*

1    If men in nursing/engienering had as many advantages
as women then we would see more men in senior positions.

8    As a (numerical) minority men have a lower status than  women within nursing (nurses).

11    Women have an unequal share of status and types of job within nursing/ engineering.

14   Men should be angry about their low status in nursing/engineering.

17   Men must keep on fighting until they have equality with women in all occupations.

21   Women want to keep large numbers of men from becoming nurses so that they can keep a hold of the power and authority they've always had (nurses).

Positive action for women has now made men the disadvantaged gender (engineers).

26   There is still a lot of prejudice and discrimination in nursing/engineering which prevents men achieving their full potential.

### Ingroup Social Competition (maintaining status)

1   Reverse discrimination is happening and men take advantage of it (nurses).

2   Women are better suited emotionally and intellectually for senior positions in nursing/engineering than men.

3   Women in nursing/engineering should be making efforts to maintain and improve their status.

4   Positive action for men has made women the disadvantaged gender in nursing (nurses).

Affirmative action is necessary for women to maintain and improve their status within engineering (engineers).

5   Men are overrepresented in senior and administrative positions once held by women (nurses).

Positive or reverse discrimination is happening and women should take advantage of it (engineers).