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**Alleviating the Internalization of the Stereotype Associated
With Affirmative Action Recipients**

By Karen Majka

**A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for
The degree of Master of Arts
Department of Psychology
Carleton University
Ottawa, Canada**

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Acceptance of the thesis:

"Alleviating the Internalization of the Stereotype
Associated with Affirmative Action Recipients"

submitted by

Karen Majka

in Partial fulfillment of the requirements for
the degree of Master of Arts

Chair

Thesis Supervisor

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Abstract

To create a workforce that is more reflective of the population, affirmative action procedures have been introduced. However, some research has found that detrimental effects in self-esteem and self-evaluations occur for affirmative action recipients. The current study focused on women's (N=141) reactions to selection procedures based on merit, preferential treatment, and exclusive quota criteria using a task based on gendered and non-gendered issues. Measures of the fairness of the selection procedure, self-esteem, negative affect, and performance were assessed. Analyses of variance found that the exclusive quota procedure was perceived as less fair than other selection procedures with these participants displaying more hostility than others. However, decreases in self-esteem or perceptions of performance were not found for either of the affirmative action procedures. Findings contribute support that affirmative action procedures can be effectively implemented without negative repercussions to the recipient, especially when emphasizing the qualifications of the recipient.

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Despite the progress women and minority groups have made over the last few decades, substantial differences between the employment status of women and men and the salaries they earn continue to exist. A study by an American research group interested in the progress of women, named Catalyst (2000), found that women filled only 12% of corporate officer positions in Canada. In addition nearly half of Canada's largest companies have no women officers. These shortcomings are due in part to the "glass ceiling" women encounter, blocking them from reaching upper management positions (O'Leary & Ickovics, 1992).

Women and minority groups continue to suffer from stigma and negative stereotypes attributed to them, and from the discrimination that follows (Crosby, Bromley & Saxe, 1980; Beaton, Tougas & Joly, 1996; Tougas, Brown, Beaton & Joly, 1995). Individuals make assumptions about others' personality, attributes and skills based on their group membership. For example, women suffer from a stereotype of lacking in leadership ability and possessing poor mathematical abilities (Spencer, Steele & Quinn, 1999) while those of African descent suffer from a stereotype of inferior intellectual ability (Schneider, Major, Luhtanen, Crocker, 1996; Steele & Aronson, 1995). These assumptions permeate the work place, affecting perceptions, and hence the hiring procedures and advancement prospects of women and minority workers. For example, one study found that men were more likely than women to perceive female managers as passive, frivolous, nervous, having a strong need for social acceptance and shy (Deal & Stevenson, 1998). If male managers or executives hold these negative, stereotyped views of women, women are at an obvious disadvantage when applying for jobs or for promotion. Similarly, Dovidio and Gaertner (2000) found that individuals were more

likely to rely on stereotypes and discriminate if an African American employment candidate's qualifications were ambiguous, but they did not discriminate against the African American candidate when their qualifications were clearly outstanding. They term this "aversive racism" which is subtler and not as blatant as old-fashioned racism.

Affirmative action policies have been implemented in order to combat these ongoing effects of negative attributions, stereotypes and subtle forms of racism. Policies have been introduced to give members of disadvantaged groups equal consideration and opportunities for jobs or promotion. However, opposition toward such actions is expressed because, it is argued, such policies diminish the quality of the workforce, in that beneficiaries are viewed as relying on such assistance only when they lack inherent ability (Kimura, 1998; Steele, 1990). As a result, stereotypes of targeted groups are further promoted and exacerbated. Affirmative action recipients are viewed as being less qualified (Garcia, Erskine, Hawn & Casmay, 1981), incompetent and possessing less ability (Heilman, Block & Lucas, 1992; Heilman, 1996; Jacobson & Koch, 1977; Summers, 1991) than group members who are not affirmative action recipients. In addition, some feel that the use of affirmative action procedures may even hurt the performance of the company (Kravitz, Klineberg, Avery, Nyguyen, Lund & Fu, 2000). Even when the consideration of qualifications is made explicit, nontargeted group members nonetheless report the belief that the affirmative action recipient was hired solely due to group membership (Kravitz & Platania, 1993). Employees who have been hired through affirmative action and are aware of the negative stereotype attributed to them, may in turn experience lowered self-esteem and diminished self-concepts (Blaine, Crocker, & Major, 1995; Heilman, Simon & Repper, 1987; Heilman, 1996). Thus,

despite the fact that affirmative action policies are intended to overcome discrimination and negative stereotypes, it is possible that they promote further stereotypes. As well, the lack of confidence women and minorities may hold about their qualifications may in itself lead to behavioural confirmation (Heilman, Rivero & Brett, 1991) or self-handicapping (Turner & Pratkanis, 1993), which in turn will validate other's doubts despite the recipient's true qualifications.

It was the goal of this research to evaluate the effects on affirmative action efforts involving the preferential selection of women on women's self-perceptions in relation to stereotyped views of affirmative action recipients, as well as on their own self-evaluations of performance, and task motivation. It was further argued that women could buffer themselves against such beliefs by making salient their gender identity, as this will entail recognition of gender discrimination (and hence the need for affirmative action efforts). Further, by making salient women's gender identity, they are provided with an alternative explanation for negative feedback, namely that such feedback reflects the prejudice of others against their group rather than against their personal qualifications.

Types of Affirmative Action Procedures

Affirmative action procedures are implemented in order to alleviate the effects of stereotyping and prejudice and to create a work force that is proportionately more reflective of the population. Since stereotypes may affect the perceptions of majority group members about minorities, an imbalance in hiring and promotions can occur. Therefore affirmative action policies alleviate this imbalance by providing an equal opportunity for women and minority group members.

A variety of affirmative action procedures exist, varying in their emphasis on

group membership. One procedure, which does not emphasize group membership, is passive nondiscrimination. In this situation any reference to gender and/or race is completely removed. A second procedure, which places more emphasis on group membership, but does not exclude other qualifications, is that of "preferential treatment". Preferential treatment can be relatively 'soft' involving giving preference to the target group member if candidates are equally qualified. For example, if a man and a woman are applying for a job with the same amount of experience, education, and scores on a given entry exam, the woman, being the target group member, would be hired. Preferential treatment can also be 'hard', in that it may involve employers searching for a qualified candidate amongst the target group first, then if no qualified candidates exist in this group, the non-target group is searched. A final method of affirmative action is the "exclusive quota" procedure. In this situation individuals are chosen based solely upon their membership within a particular group; other qualifications are not considered. This procedure is often what people believe affirmative action to be in all situations and is the procedure often focused upon in research on affirmative action (Heilman, McCullough, Gilbert, 1996; Blaine, Crocker & Major, 1995; Heilman, Simon & Repper, 1987). However, this procedure in reality is not used, and indeed, in the United States is not legal.

Support for affirmative action programs varies as a function of the type of strategy implemented. Reactions to procedures that eliminate consideration of group membership (colour or sex-blind) are generally positive, whereas increasingly negative responses are expressed toward actions giving greater weight to group membership (Chang, 1996; Garcia, et al., 1981; Heilman, Battle, Keller & Lee, 1998; Matheson et al., 1994, 2000;

Nacoste, 1990; Tougas & Veilleux, 1989). This pattern was found among members of beneficiary and nonbeneficiary groups alike (Dovidio, Mann, & Gaertner, 1989; Fletcher & Chalmers, 1991; Matheson et al., 1994, 2000; Nacoste, 1989; Stanush, Arthur & Doverspike, 1998; Tougas & Veilleux, 1988, 1989).

This general rejection of procedures involving preferential treatment by both majority group members and minority group members may occur in part due to the stereotype of individuals who have been hired through affirmative action procedures. As mentioned at the outset, affirmative action beneficiaries are often viewed as inexperienced, unskilled individuals who are not qualified for the position (Heilman, 1996; Heilman, McCullough & Gilbert, 1996). This perception is often not only held by the majority group members, but by the minority group members as well (Kimura, 1998; Steele, 1990). As a result, women who are hired through affirmative action may be less confident in their own qualifications.

Effects of Stereotypes and Prejudice on Self-Esteem, Affect and Performance

Does membership in a stigmatized group have an effect on the individual's self-perceptions, self-esteem or self-evaluations? If individuals internalize the group stereotype, this may have an impact on self-confidence and self-expectations, and in turn negatively affect performance. A self-fulfilling prophecy can then occur with poor performance as an outcome, fulfilling expectations based on the negative stereotype. Such effects may also contribute to feelings of depression or anxiety on the part of the member of the negatively stereotyped group. Even if recipients do not internalize the stereotype, they may nonetheless feel anxiety stemming from the expectation that others will evaluate them in terms of the stereotype. Research has shown that even the threat of

being negatively stereotyped can impair performance (Spencer, et al. 1999; Steele & Aronson, 1995).

Women's self-esteem and performance can be affected in social contexts in which the negative stereotype associated with being a woman is made salient. Whether it is choosing a woman to be a leader in a group (Hogg & Turner, 1987) at which women stereotypically do not excel, or overweight women being rejected for a date (Crocker, 1989; Quinn & Crocker, 1999), self-esteem can decrease if the situation highlights the role of a negative stigma. Even the threat of a negative stereotype being confirmed if they do not perform well can negatively impact actual performance. For example, if a situation highlights the importance of math skills, women's math test performance is lowered, whereas their test performance is comparable to men's if the salience of this skill set is not highlighted (Spencer et al., 1999).

Similarly, the negative stereotype associated with the affirmative action recipient has been found to have a negative impact on the self-esteem, motivation and performance of the affirmative action recipient. Researchers have found that individuals chosen through affirmative action procedures report lower self-esteem and rate their performance worse than individuals chosen based on merit (Blaine, Crocker and Major, 1995; Crocker, Voelkl, Testa, & Major, 1991; Heilman, Simon & Repper, 1987). However, contrary to these findings, when the role of qualifications is explicit, even in conjunction with preferential treatment, many of these detrimental effects on beneficiaries' motivation or self-perceptions are not evident (Brown et al., 2000; Graves & Powell, 1994; Heilman et al., 1998; Major, Feinstein, & Crocker, 1994; Matheson et al., 2000; Stanush, Arthur, Doverspike, 1998; Taylor, 1994; Tougas et al., 1996). In effect, when

beneficiaries were assured that as individuals, they met the merit criteria, the stereotype of the affirmative action recipient no longer appeared to be personally applicable.

Many of the experimental studies examining the effect of affirmative action strategies also do not make explicit that there exists a situation of discrimination that is being compensated for. For example, the manipulation of affirmative action in Blaine et al. (1995) emphasized a need to make amends for “past discrimination” yet made no mention of current discrimination or the ongoing negative stereotypes attributed to women. Participants may assume that discrimination is a phenomenon of the past, and so the current use of affirmative action is an unnecessary overcompensation (Esses & Seligman, 1996). Indeed, Matheson et al. (1994) found that women were more likely than men to support *all* of the aforementioned types of affirmative action in situations in which their group was currently the target of discrimination. Others have also found that individuals’ support for affirmative action procedures and the perception of these procedures as fair was positively associated with perceptions of workplace discrimination (Kravitz and Klineberg, 2000; Tougas et al., 1999).

However, others might argue that if negative stereotypes and potential discrimination were salient, women may further lack confidence if that stereotype has been internalized, or due to stereotype threat. Preferential treatment is more detrimental to recipients when applied in contexts in which there exist strong stereotypes about their competence (Gilbert & Stead, 1999; Heilman et al., 1987, 1991). Even if beneficiaries are self-assured of their own competence, concerns about stereotyped and discriminatory treatment can prevail (Heilman et al., 1998; Maio & Esses, 1998; Truax, Cordova, Wood, Wright & Crosby, 1998). For example, managers are defined and evaluated along

characteristics that are incongruent with feminine stereotypes, such as competitiveness, and hence others view women as less competent (Brown et al., 2000; Heilman, Block, Martell, & Simon, 1989; Summers, 1991). Expectations that others view them as less competent may make women more anxious and hence reduce motivation and performance.

Interestingly, the differences found by Heilman and her colleagues, in self-perceptions of leadership ability and performance did not occur for the male participants. Men's self-perceptions of their ability and performance did not suffer if they were chosen on the basis of their gender. Since the role of leader was not inconsistent with men's role in society, there was no need for concern about subsequent discrimination, or negative evaluations based on stereotype expectations. Therefore, men's self-perceptions did not suffer when they were chosen based solely on their gender, as the task was gender-congruent.

While at times the incongruence between the stereotype and the role they have been selected into can undermine the self-perceptions and confidence of the affirmative action recipient, other research has found that emphasizing the group's stigmatized status can provide an alternative interpretation for discrimination or negative feedback that makes the individual's self-perceptions less vulnerable (Crocker & Major, 1989; Dion & Earn, 1975). These studies noted that emphasizing the group's status had a buffering effect on self-esteem and self-evaluations in the face of negative feedback and criticism. Rather than attributing negative feedback to the self (i.e. internalizing the stereotype), the feedback was attributed to discrimination and dismissed. Thus, if an individual has failed at a particular task due to the effects of discrimination, self-esteem and self-evaluations

may be buffered and remain positive if the failure is attributed to the discrimination (Crocker & Major, 1989; Crocker et al., 1991).

Similarly, in the case of affirmative action, the effects of the negative stereotype associated with beneficiaries may be alleviated through emphasizing group membership (i.e. membership in the group “women”). In so doing, the discrimination that exists due to negative stereotypes about women may become salient, and hence the need for affirmative action becomes salient as well. Further, the negative feedback women receive from others because of others’ stereotypes either of women or of affirmative action recipients will be attributed to group membership, as opposed to being attributed to women's own performance and abilities.

Self –Categorization

The perception of the self either as an individual or as a member of a group changes over time and across contexts. According to self-categorization theory, self-definition varies along a continuum from interpersonal (or personal identity) to intergroup categorization (social identity) (Turner & Oakes, 1989). Interpersonal categorization involves classifying the self as an individual person with attributes and characteristics specific to the self and different from other individuals. An intergroup categorization involves classifying the self in terms of some social group with attributes and characteristics specific to this group, as opposed to some other social group (Turner, 1991).

Whether categorization occurs at the interpersonal or the intergroup level depends upon the perceived intragroup (within group) similarities and intergroup (between group) differences. A subset of individuals is more likely to be categorized as a group if the

perceived differences within the subset are less than the differences between that subset and other individuals within the context. This is referred to as the “meta-contrast ratio” (MCR). A subset will be perceived as a category if the MCR, or the average perceived intercategory differences divided by the average perceived intracategory differences, is high.

$$\text{MCR} = \frac{\text{differences between groups}}{\text{differences within group}} = \frac{\text{differences between men and women}}{\text{differences within the group women}}$$

For example, women will be more likely to categorize themselves as a member of the group “women” if the perceived differences *between* women and men is greater than the perceived differences *within* the group women at a given time. If the MCR is high, and social categorization is therefore taking place, group membership is more salient to the individual. This categorization at a group level involves a process of depersonalization. In effect, when individuals perceive themselves as more “typical” of their group, through the enhancement of the perceived *similarities* between the self and other members of the group, they are depersonalized. Stereotypes that are shared by the group are more likely to affect self-perceptions when depersonalization occurs. When self-stereotyping occurs, descriptions of the self that emerge reflect the situation-specific group-based stereotypes (Lorenzi, 1991; Simon, Glassner-Bayeral, & Stratenwerth, 1991; Simon & Hamilton, 1994; Simon, Panteleo, & Mummendey, 1995; Spears, Doosje, Ellemers, 1997).

It is therefore argued in the present study that if a social identity, such as gender, is made salient, the characteristics associated with that identity are more likely to be self-applied. The use of affirmative action strategies superimposed over this identity is most

likely to highlight the negative stereotypes pertaining to women's competence. If the social identity is salient, women may be more likely to attribute the stereotype associated with affirmative action recipients to the same contextual factors that result in discrimination against women. In effect, when the social identity is salient, affirmative action recipients' self-perceptions and esteem should be buffered against the negative implication of these stereotypes. Conversely if the recipient's individual identity is emphasized, the negative feedback that is inherent to the use of the affirmative action procedure may be attributed to the individual's own lack of merit, therefore resulting in a decrease in self-esteem and self-evaluations of performance and ability.

Present Study

Not all research finds a decrease in self-esteem and self-evaluations of ability and performance when affirmative action is introduced. This may be due to the differential emphasis on the social self (group discrimination) versus the individual self (merit) in the selection context. In order to determine whether self-categorization processes moderate the relationship between affirmative action selection procedures and self-esteem or self-evaluations, the level of self-categorization, selection process and success or failure were manipulated. Personal identity versus a social identity based on gender was manipulated for the self-categorization variable. Three levels of the selection procedure were examined: the merit-based process¹, in which individuals are chosen solely based on their skills and competencies; preferential treatment, in which individuals are chosen based on a combination of skills and group membership; and exclusive quota procedures,

¹ Note: Participants were informed that the "merit-based process" was biased against women. This was highlighted in order to reflect the prejudices and discrimination against women in society.

in which individuals were chosen based solely on their gender. The success/failure variable was also manipulated in the personal merit condition but not for the affirmative action procedures since women's "failing" when affirmative action procedures are implemented was not an issue of immediate interest. However, it was of interest to assess whether the effects of affirmative action procedures were as detrimental to women's self-perceptions as failure under discrimination.

It was hypothesized that

- 1) those selected through the merit-based process would perceive the selection procedure as fairer than those selected through the preferential treatment or exclusive quota procedures.
- 2) women would express higher self-esteem and more positive affect when they succeeded, irrespective of the selection procedure, than if they failed. Further, women would report higher self-esteem and more positive affect when they succeeded as a result of merit as opposed to succeeding as a result of preferential treatment or the exclusive quota procedure.
- 3) the level of self-categorization would moderate the effects of the selection procedure. The detrimental effects on self-esteem, affect and perceived performance were expected to only be evident under personal self-categorization but not under social categorization.

Method

Participants

Female students (N=141) enrolled in Introductory Psychology were recruited to participate in the study in exchange for experimental credit. Participants were also eligible for a \$100 lottery upon completion of the study. Although men's responses were not used in this study, male students were recruited as well in order to add to the realism of the situation; women in the work force are competing with both men and women for a variety of jobs and positions.

Procedure

Participants were run in small mixed-gender groups (2 to 11 people), with roughly equal numbers of men and women. After informed consent forms were completed (see Appendix A), the study was described as an assessment of creative ability and the characteristics associated with highly creative individuals (see Appendix B for instructions). Creative ability was presented as a characteristic that is essential to succeed in today's society in which information is available quickly and easily. Therefore finding creative ways to present information in an easy to understand and appealing format is essential to an information technology society. Participants were informed that employers are interested in identifying the characteristics associated with these highly creative individuals so that they can hire the best people for these positions. The procedure was derived from Wright, Taylor, and Moghaddam (1990), in which participants were assigned to a high status or low status group, based on their ability.

Participants were told that one person from their group would be chosen as the

“ideas co-ordinator”. This representative was to possess a superior, more advanced creative ability that was supposedly assessed by a creativity task. Participants were told that as in the real world they were to all start off as a low-status member of the creative-ability group, the “general assisting staff”, but would have an opportunity to move into the higher status position by performing well on the creativity task. If they were chosen as the ideas co-ordinator they would be the one to determine which ideas of the others were the best and would hold the veto vote in a group discussion task to follow. This group discussion was based on a second creativity task in which all individuals were to participate. The second creativity task was used to measure participants’ perceived competency on the task, after the selection procedure manipulation. After completing the second task, the ideas co-ordinator would supposedly collect the other’s essays and go over their suggestions for evaluation in the group discussion. In reality participants only engaged in the two creativity tasks, but not the group discussion. The group discussion was simply a part of the cover story used to explain the need for the second creativity task.

Participants were informed that they would have to obtain a minimum cut-off mark of 80% on the first creativity task, in order to be considered for the role of idea co-ordinator. If no one obtained this cut-off mark, they were told, then no one would be assigned the role. This cut-off mark was used in order to simulate a real-world situation in which individuals applying for a job must have certain qualifications before they are considered for employment or promotion. In order to further simulate a real-world situation, the monetary rewards associated with being assigned to either the low or high-status role also varied. Participants were told that those in the idea co-ordinator role

would qualify for a \$100 lottery, while those who remained in the general assisting staff roles would qualify for only a \$10 lottery. In reality all participants were considered for the \$100 lottery.

The creativity task consisted of answering a number of essay style questions in relation to a controversial issue relevant to university students. In order to ensure that participants took the task seriously, they first were told that Carleton University had identified the following issues as critical to the student population and therefore the results of the discussion would be forwarded to the university senate.

In order to manipulate the level of self-categorization, the topics that students read and wrote an essay about varied. To induce social self-categorization, an issue relevant to women was presented. Participants in the social self-categorization condition read a paragraph about the need for university funding for a rape crisis hotline on-campus, then were given ten minutes to answer a number of essay questions based on this issue. The questions included what the participant believed to be the most important issue to consider in making a decision to fund the hot-line, the type of information required to make a decision, and how the university would be perceived regarding women's issues if the hot-line were not available (see Appendix C).

In order to induce personal self-categorization a gender-neutral topic was presented as the subject of the creativity task. Participants in the personal identity condition read a paragraph related to introducing user fees for on-campus Internet use and library borrowing privileges then answered the questions provided (see Appendix D).

Once participants finished the creativity task, the essays were collected and supposedly marked using an "objective schema" by the experimenter. During this time

the participants completed the manipulation check measuring the level of self-categorization. After the experimenter had finished "marking" the papers, one of the three selection procedures (merit only, preferential treatment, or exclusive quotas) were randomly presented to the group. All subjects were first told:

"Typically in situations like this, the ideas co-ordinator is selected on the basis of both skill and ability, which basically means that they are good at the task. In our study, we have been attempting to select individuals who have demonstrated that they have superior creative abilities, as measured by the creativity task that you just completed.

Unfortunately so far in the study, we have found that the proportion of men and women assigned to the ideas coordinator role does not reflect the proportion of male and female participants. We have found that the scoring key used consistently gives higher scores to men as compared to women. We have done a search of the literature and found there are no differences in creative ability between men and women. Therefore it appears the scoring key is biased. We have decided to keep using it though, since it is quick and easy to administer."

One of the three selection procedures was then presented to the group of participants. In the merit situation the subjects were told

"Nonetheless we believe it is important to be consistent in our policy of always giving the ideas coordinator position to the most qualified individual based on the scores obtained in the creativity task."

In the preferential treatment condition participants were told:

"Therefore, we have adopted a policy of giving the ideas coordinator position to a qualified woman if a woman and a man obtain the same scores or there exists only a negligible difference between the scores on the creativity task, as long as they have first obtained the 80% cut-off mark."

In the exclusive quota condition participants were told:

"Therefore we have adopted a policy of giving the ideas coordinator role to the most qualified woman regardless of whether she has obtained the cut-off mark of 80% or not."

The experimenter then distributed a package to each of the participants with a top sheet informing them of their position (ideas co-ordinator or general assisting staff), the second set of the dependent measures and the subsequent creativity task. The set of dependent measures included the self-esteem, affect, perceived fairness of the procedures, attributions for success, and expectations of their performance on the second task. Participants were told that these questionnaires were simply attempting to identify some key characteristics associated with having superior or inferior creative abilities.

In the two preferential treatment conditions all female participants were told that they had been chosen as the ideas co-ordinator. Participants were not aware of, nor informed of others' success or failure. But they were led to believe that they were chosen as the only ideas co-ordinator and that the other individuals in the group had failed, i.e. had been assigned to the general assisting staff. In the merit condition, half of the female participants were randomly selected as the ideas co-ordinator and the other half were assigned to the lower status group.²

In order to assess whether the selection method had an impact on the perceived competency in the task, the participants completed a second creativity task. Those in the social self-categorization condition read and wrote about an issue that was again related to the group women, a seminar on body image (see Appendix E). Those in the personal self-categorization condition read about a gender-neutral issue, university funding for social science programs versus liberal arts programs (see Appendix F).

Once participants completed the second creativity task they received another questionnaire package with the remainder of the dependent measures. These included

² For the purpose of other research interests, all male participants were assigned to the low status group in the preferential selection conditions. For the merit condition, half of the men were assigned the ideas co-ordinator role and half to the general assisting staff.

perceptions of competency on the creativity task, perceptions of the fairness of the selection procedure, and a second measure of state self-esteem and affect. Once all participants completed their questionnaires, they were debriefed and informed of the true purpose of the study (see Appendix G).

Measures

Meta-contrast ratio.

In order to determine the level of self-categorization, participants were asked to indicate the extent to which they felt women were similar to one another, on a series of 29 attributes, values and social experiences (see Appendix H). Each item was rated on a 5-point scale ranging from *not at all similar* (0) to *extremely similar* (4). Using the same scale, they were then asked to indicate the extent to which they felt women were similar to or different from men on the same set of attributes. The scale was first changed in order to range from 1 to 5 rather than 0 to 4, then reverse coded to reflect perceptions of the differences, consistent with Turner (1991). A score for each attribute was then calculated by dividing the attribute score for the perceived differences between women and men by the score for the perceived differences among women on that attribute. An overall score was then calculated by averaging all attribute scores (Cronbach's $\alpha=.83$) which could range from 1 (personal categorization) to 5 (social categorization). A mean was also calculated for each of the 3 sub-divided dimensions: attributes (Cronbach's $\alpha=.81$), values (Cronbach's $\alpha=.67$), and social experiences (Cronbach's $\alpha=.70$), such that high scores reflected greater intergroup differentiation.

Perceived performance

Participants assessed perceived performance by rating on 7-point scales ranging from *poor* (1) to *excellent* (7), how they believed they performed on the creativity task. Participants rated their performance on 8 dimensions: ability to express your thoughts clearly, ability to communicate your thoughts in an organized way, uniqueness of ideas

expressed, writing ability, decisiveness of ideas, creativity, likely effectiveness of ideas and fairness of ideas for all concerned. This was measured once after the first creativity task (Cronbach's $\alpha=.94$) and a second time after the second creativity task (Cronbach's $\alpha=.93$). A mean score was calculated for both measures with higher scores indicating higher perceived performance. (see Appendix I)

Perceptions of the selection procedure.

Perceptions of the fairness of the selection procedure were assessed by asking participants to rate their perceptions on 7 phrase-pairs in relation to the selection procedure: very fair / very unfair (reverse scored), necessary / unnecessary (reverse scored), discriminates against women / does not discriminate against women, appropriate / inappropriate (reverse scored), uncalled for / called for, biased / unbiased, discriminates against men / does not discriminate against men. Each phrase-pair was rated on a 7-point scale. After items were reverse scored where necessary, a mean score was calculated for each participant such that higher scores reflected perceptions of the selection procedures were fair (Cronbach's $\alpha=.83$) (see Appendix J).

Internalization of the stereotype of affirmative action recipient.

Participants rated 6 phrases associated with the stereotype of affirmative action recipients: "I am deserving of the position I was assigned," "I am a creative person," "I received the position I was assigned because of my gender," "I received the position I was assigned because of my score on the creativity task," "I am qualified for the position I was assigned," and "I have superior writing abilities." They stated the degree to which these statements applied to themselves on a 7-point scale ranging from *does not apply at*

all (1) to *applies a great deal* (7). Reliabilities did not indicate the items formed a composite index therefore each item was analyzed individually (see Appendix K).

Self-esteem.

Self-esteem was assessed using two dimensions of a state self esteem measure developed by Heatherton and Polivy (1991). Specifically the dimensions were performance self-esteem which included the items "I feel frustrated or rattled about my own competence" (reverse scored), "I feel confident about my abilities", "I feel I'm having trouble understanding what I read" (reverse scored), "I feel smart as others," "I feel confident that I understand things," "I feel that I have less scholastic ability than others" (reverse scored), "I feel like I'm not doing well" (reverse scored) (Cronbach's $\alpha=.84$), and social self-esteem which included "I'm worried about whether I'm regarded as a success or failure," "At this moment, I feel self-conscious," "I feel displeased with myself," "I am worried about what other people think of me," "I feel inferior to others at this moment", "I feel concerned about the impression I am making," "I am worried about looking foolish" (all items reverse scored) (Cronbach's $\alpha=.81$). Each dimension consisted of 8 items, and were rated on a scale ranging from *not at all* (1) to *extremely* (5). A mean score was calculated for each dimension with higher scores reflecting higher self-esteem. (see Appendix L)

Negative affect.

Negative affect was assessed on three subscales of the short version of the Multiple Affect Adjective Checklist (MAACL; Blaine, Crocker & Major, 1995). Each

subscale consisted of 7 items each, which were rated on a scale ranging from *not at all* (1) to *very much* (7). The 3 sub-scales examined were: anxiety which included calm (reverse scored), secure (reverse scored), fearful and worrying (Cronbach's $\alpha=.84$); hostility which included irritated, cooperative (reverse scored), agreeable (reverse scored), and angry (Cronbach's $\alpha=.69$); and depression which was reflected by the items discouraged, blue, fine (reverse scored), active(reverse scored) (Cronbach's $\alpha=.68$) A mean was calculated for each dimension such that higher scores indicated higher levels of anxiety, hostility, or depression. (see Appendix M).

Results

Prior to the main analyses, the assumptions associated with the various analyses were checked¹. In order to determine the effects of categorization as well as the effects of the selection procedures on the dependent measures, a 2 (identity salience: social identity vs. personal identity) X 4 (selection procedure: merit fail, merit pass, preferential treatment, and exclusive quota procedure) between-subjects design was used. Follow-up tests conducted maintained a family wise error rate of .05 by using Tukey's correction for pairwise comparisons.

Manipulation Check

In order to determine whether the manipulation for identity categorization (social categorization vs. personal categorization) was effective, t-tests were performed for each of the 3 dimensions of the meta-contrast ratio (MCR), as well as the overall MCR score. The t-tests for each of the 3 dimensions were not significant (see Table 1). The t-test for the overall MCR score was not significant either $t(1,139)=0.134$, *ns*. On average, participants did not perceive strong intergroup differentiation (see Table 1 for means and standard deviations).

¹ The assumptions of homogeneity of variance and homogeneity of covariance were examined. These assumptions were met.

Table 1

Means and Standard Deviations for the overall MCR and the 3 dimensions

	Mean	Standard Deviation	t value
Overall MCR			.134, ns
Social	1.44	.36	
Personal	1.43	.32	
Attributes			.233, ns
Social	1.23	.35	
Personal	1.25	.38	
Value			.151, ns
Social	1.40	.51	
Personal	1.38	.45	
Social Experiences			.389, ns
Social	1.74	.58	
Personal	1.71	.45	

Although the measure for the meta-contrast ratio did not indicate that the manipulation of categorization was effective, this independent variable was still used in subsequent analyses, given the possibility that the manipulation contributed variance in responses that was not tapped by this manipulation check measure.

Fairness of the Selection Procedure

It was expected that preferential treatment procedures would be viewed as increasingly unfair as group membership played a more central role. Consistent with this, a 2 (categorization) X 4 (selection procedure) ANOVA conducted on the perceived fairness of the selection procedures found a significant main effect for the selection procedure $F(3,133)=7.57, p<.001, \eta^2=0.146$. Follow-up Tukey's pairwise comparisons

indicated that participants in the exclusive quota condition ($M=4.12$, $SD=1.39$) perceived the selection procedure as significantly less fair than participants in the merit conditions, irrespective of whether she succeeded ($M=5.30$, $SD=0.95$), or failed ($M=4.88$, $SD=1.08$). As well, exclusive quotas were viewed as less fair than the preferential treatment procedure ($M=5.33$, $SD=1.23$). No other significant differences were found.

Stereotypes of Affirmative Action Recipient

A MANOVA was conducted on the 7 items assessing the stereotype of the affirmative action recipient to assess whether women viewed this stereotype as applying to themselves under preferential treatment procedures. A significant multivariate effect was found for the selection procedure, $Pillai's=.352$, $F(21,378)=2.41$, $p<.01$, partial $\eta^2=.118$. Follow-up univariate tests indicated a significant effect for perceptions that "I received the position I was assigned because of my gender", $F(3,130)=14.17$, $p<.001$, partial $\eta^2=.246$, and "I received the position I was assigned because of my score on the creativity task", $F(3,130)=3.19$, $p<.05$, partial $\eta^2=.069$.

As seen in Table 2, follow-up Tukey's tests indicated that women in the exclusive quota procedure were significantly more likely to believe they received their position because of their gender and not because of their score on the creativity task than in any of the other three conditions (among which there were no differences).

Table 2

Means (Standard Deviations) for the Stereotype of Affirmative Action Recipient

	Merit		Preferential	Exclusive
	Fail	Pass	Treatment	Quota
I received the position I was assigned because of my gender.	2.10 ^a (1.88)	1.62 ^a (1.15)	2.66 ^a (1.78)	4.26 ^b (2.29)
I received the position I was assigned because of my score on the creativity task.	6.10 ^a (1.40)	5.47 ^{a,b} (1.72)	5.86 ^a (1.33)	4.91 ^b (1.53)
I am a creative person.	5.20 (1.71)	5.35 (1.33)	5.37 (1.40)	5.00 (1.53)
I am deserving of the position I was assigned.	4.53 (1.36)	4.75 (1.33)	5.00 (1.31)	4.40 (1.50)
I am (only) qualified for the position I was assigned.	3.07 (1.95)	2.98 (1.83)	3.09 (1.79)	2.94 (1.88)
I have excellent creative abilities.	4.93 (0.66)	4.97 (1.27)	5.00 (1.50)	4.76 (1.48)
I probably would not be in the position I am in if the selection procedure had been different.	3.97 (1.96)	3.35 (1.35)	3.43 (1.63)	4.15 (1.71)

Note: Values with different superscripts in same row were significantly different from one another at $p < .05$.

Perceived Performance

It was suggested that the use of preferential selection procedures might undermine beneficiaries' confidence and self-evaluations of their subsequent performance. To assess this, a 2 (identity salience) X 4 (selection procedure) X 2 (task: screening vs. post feedback) mixed model ANOVA was conducted on participants' perceptions of their performance on the creativity tasks. A significant main effect for task was found, $F(1,133)=28.91$, $p < .001$, partial $\eta^2 = 0.179$. Participants rated their performance on the second creativity task ($M=4.64$, $SD=1.00$) higher than they rated their performance on the first creativity task ($M=4.24$, $SD=1.18$).

A significant main effect for selection procedure was also found, $F(3,133)=4.09$, $p < .01$, partial $\eta^2 = .084$. Follow-up Tukey's tests indicated that, not surprisingly, those

in the merit condition who failed ($M=3.91$, $SD=0.18$) rated their performance lower than those who passed, whether success was under the merit only ($M=4.53$, $SD=0.16$), preferential treatment ($M=4.64$, $SD=0.16$), or under exclusive quota procedures ($M=4.64$, $SD=0.16$). Thus, it appears that failure had a greater impact on self-evaluations of performance than did the use of preferential selection procedures.

Self-esteem

In order to assess whether the selection procedures undermined women's self-esteem, a MANOVA was conducted on the 2 dimensions of state self-esteem. No significant differences were found for categorization, selection procedure, or their interaction, $F_s < 1$. On average, women's levels of self-esteem remained relatively high for both performance ($M=2.96$, $SD=0.67$) and social self-esteem ($M=2.94$, $SD=0.72$).

Affect

Given that women found the exclusive quota procedures to be particularly unfair, it might be anticipated that they would experience distress when they succeeded under these conditions. A 2 (categorization) X 4 (selection procedure) MANOVA conducted on the three dimensions of affect found a significant multivariate effect for selection procedure, Pillais=0.127, $F(9,396)=1.95$, $p<.05$, partial $\eta^2 = 0.042$. Follow-up univariate tests indicated a significant effect for the hostility dimension, $F(3,132)=3.25$, $p<.05$, partial $\eta^2 = .069$. Follow-up Tukey's tests indicated that participants in the merit condition who failed reported feeling significantly more hostile than those who passed either under merit, or the preferential treatment procedures (see Table 3 for means and

standard deviations. However, the hostility scores among women who failed were comparable to those selected under the exclusive quota procedure.

The depression dimension approached significance, $F(3,131)=2.47$, $p<.10$, partial $\eta^2=.053$. Follow-up Tukey's tests indicated that participants in the merit fail condition were significantly more depressed than those in the preferential treatment condition (see Table 4 for means and standard deviations). No other significant differences were found.

Table 3

Means (Standard Deviations) for the Dimensions of Affect

	Merit		Preferential	Exclusive
	Fail	Pass	Treatment	Quota
Hostility	2.03 (0.81) ^a	1.53 (0.57) ^b	1.51 (0.66) ^b	1.71 (0.87) ^{a, b}
Depression	2.56 (1.12) ^a	2.09 (0.79) ^{a, b}	1.94 (0.86) ^b	2.11 (1.04) ^{a, b}
Anxiety	2.42 (1.12)	2.69 (2.25)	2.51 (1.27)	2.57 (1.13)

Note: Values with different superscripts in same row were significantly different from one another at $p<.05$.

Where there are no superscripts, none of the groups is significantly different.

Summary

In summary, those in the exclusive quota condition perceived that condition as significantly less fair than those in any of the three other conditions. Interestingly, participants from the preferential treatment condition perceived that selection procedure to be as fair as those who succeeded as a result of merit.

In addition, participants in the exclusive quota condition were significantly more likely to attribute certain aspects of the affirmative action stereotype to themselves as compared to those in any of the other 3 conditions. Specifically, women in the exclusive quota condition were significantly more likely to attribute their success to their gender

and less likely to attribute their success to their score on the creativity task.

No statistically significant differences were found in terms of self-esteem, negative affect or perceived performance with the exception of those who failed as a result of merit. These women were significantly more depressed than others and rated their own performance significantly lower. However, no differences were found between those who succeeded as a result of merit and those who succeeded as a result of one of the affirmative action conditions.

In addition, women who failed as a result of merit were significantly more hostile than those who succeeded as a result of the merit or preferential treatment. Women in the exclusive quota condition were as hostile as women who failed.

Finally, the manipulation of the level of self-categorization was not effective as no differences in the meta-contrast ratio scores were found between the two groups.

Discussion

As women and members of minority groups continue to face prejudice and discrimination, affirmative action procedures attempt to level the playing field for all individuals. However some studies have shown that affirmative action can have negative effects on recipients' self-esteem, perceptions of performance and ability, and psychological distress and anxiety (Crocker, et al., 1991; Blaine, et al., 1995; Heilman, et al., 1987), while other studies have not found these negative impacts (Brown et al., 2000; Graves & Powell, 1994; Heilman et al., 1998; Major, Feinstein, & Crocker, 1994; Matheson et al., 2000; Stanush et al., 1998; Taylor, 1994; Tougas et al., 1996).

Previous studies have found that women are less negatively affected by affirmative actions when they perceive them as a fair and just response to a situation of discrimination (Tougas et al, 1999). Generally speaking, members of both advantaged and disadvantaged groups are less supportive of affirmative action procedures that increasingly emphasize group membership (Chang, 1996; Garcia, et al., 1981; Heilman et al., 1998; Matheson et al., 1994, 2000; Nacoste, 1990; Tougas & Veilleux, 1989). In line with this, the present study found that an exclusive quota procedure was perceived as less fair than merit or the soft preferential treatment procedure. Indeed, it was perceived as less fair than failing as a result of merit, suggesting that women viewed such procedures as involving greater discrimination than the status quo that was biased against them. Nonetheless, at least one form of affirmative action, namely soft preferential treatment, was viewed as fair when responding to a discriminatory situation. Thus, this form of affirmative action should have resulted in minimal negative effects on the recipients.

Consistent with this, when selected under the exclusive quota procedure, women expressed as much hostility as women who failed under merit, and both groups were more hostile than women who succeeded as a result of merit or preferential treatment. This again supports the research showing that emphasizing gender alone as a reason for success was detrimental to the recipient (Crocker, et al., 1991; Blaine, et al., 1995, Heilman, et al., 1987) while those that emphasized both gender and qualifications were not (Brown et al., 2000; Graves & Powell, 1994; Heilman et al., 1998; Major, et al., 1994; Matheson et al., 2000; Stanush et al., 1998; Taylor, 1994; Tougas et al., 1996). Therefore affirmative action procedures such as preferential treatment in which both qualifications and the recipient's group membership are emphasized, do not appear to result in negative affects for the recipient such as increased hostility.

While a difference in the level of hostility was found, no differences were found for anxiety, depressive affect, perceptions of one's own performance or self-esteem. This might have been due to an insensitivity of the measures. However, women who failed did differ in that they expressed greater depressive affect and lower self-evaluations of performance. Alternatively, levels of self-esteem and perceptions of performance were relatively high while anxiety and depression were relatively low, among the remaining groups.

Thus, participants may have been relatively confident of their abilities, and hence self-perceptions were not undermined when they succeeded as a result of preferential treatment or the exclusive quota procedure. In other words, if affirmative action recipients have high levels of self-esteem they may be less likely to attribute the stereotype of the affirmative action recipient to the self and therefore be less likely to

perceive the self as unqualified or unskilled. On the other hand if the self-esteem of an affirmative action recipient was low, they may be more likely to accept the stereotype of the affirmative action recipient and perceive themselves as unqualified or unskilled and thus lower their self-esteem even further. Respondents in the current study displayed relatively high self-esteem scores, therefore they may have been less likely to attribute the need for the affirmative action procedure to their own lack of skills and more likely to attribute it to external factors. The moderating effects of self-esteem clearly merit further consideration.

Another possible explanation for the lack of differences stemming from the selection procedures may be that women did not believe that they played a role in their selection. However, in assessing the self-applicability of the affirmative action stereotype, women were more likely to agree that they received their position due to their gender and not due to their score on the creativity task when they were selected under exclusive quotas. Women who received their position under soft preferential treatment, on the other hand, were not any more likely to attribute the stereotype to themselves than were women who succeeded (or failed) due to merit.

While this may be an artifact of the current study, it may be consistent with the pattern of results across previous studies. The affirmative action procedures utilized in the studies that document the negative impacts on women's self-esteem and perceptions (Crocker, et al., 1991; Blaine, et al., 1995, Heilman, et al., 1987) reflect the exclusive quota procedure of this study in which the qualifications and / or abilities of the recipient were not taken into consideration. On the other hand, research in which the affirmative action procedures concurrently emphasize the qualifications of the recipient find little to

no effects (Major, et al., 1994; Tougas, Joly, Beaton, & St. Pierre, 1994). Thus, the findings of the present study, suggesting that women selected under soft preferential treatment actions are not negatively affected, or internalizing negative stereotypes, may reflect a real pattern in the literature.

Unfortunately those women who failed attributed their failure to their score and not their sex despite being told the situation was discriminatory. This is consistent with the literature on perceptions of personal discrimination that shows that women are unlikely to attribute personal deprivation to external factors such as discrimination, despite objective indicators to the contrary (Crosby, 1982; 1984). This is particularly the case if there is any ambiguity about the discrimination (Ruggiero & Taylor, 1995). Thus, although women who fail may be aware of the existence of discriminatory aspects of the procedures, they may nonetheless attribute failure to themselves, particularly given the concurrent salience of the evaluation procedures intended to assess individuals' qualifications.

Participants rated their performance on the first creativity task more negatively than they rated their performance on the second creativity task regardless of whether they succeeded or failed, or the selection procedure in place. This is rather counterintuitive, as one would expect that perceived performance would be higher on the first creativity task since participants would place more effort on this task in order to obtain the greater reward. However, perhaps participants were under more pressure to perform well on the first task in order to obtain the reward and therefore under more stress. This stress may have affected their ability to effectively perform on the first task. As well, the majority of

participants were told they had succeeded which may have bolstered their confidence going into the second creativity task.

It was hypothesized that the level of self-categorization of an affirmative action recipient would affect the reactions of the recipient. Specifically, if a woman were to categorize herself at the social level as a member of the group women, she would be less likely to attribute the negative aspects of the stereotype associated with the affirmative action recipient to herself, than if she categorized herself at the personal level. In the case of personal categorization, it was hypothesized, she would be more likely to attribute the negative stereotype to herself, and therefore experience lower self-esteem and self-perceptions. Social categorization would therefore act as a buffer.

Unfortunately differences in the manipulated level of self-categorization were not found. The manipulation of categorization did not appear to effectively influence the categorization of the participants. It is possible that the manipulation itself was not strong enough to invoke categorization at a specific level. Having the participants simply write about a gendered issue did not invoke the social categorization as expected. Although piloting was conducted to ensure the issues were either gender-related or gender neutral, the gender-related topics did not invoke the hoped for categorization. Perhaps the topic used to invoke social categorization (i.e. funding for a rape crisis hotline) was not relevant to the female participants. Unless this issue had touched them personally or someone close to them, perhaps it was not a woman's issue that was poignant for them. Using a women's issue that is more likely to touch a majority of the female participants may have been more effective in invoking the group categorization.

In addition, in order to invoke successfully a social categorization, future studies could have participants discuss the gendered issue with women defending one side and men defending the other (Hogg & Turner, 1987). A debate situation such as this may be more successful at enhancing the differences between men and women and the similarities within the group creating more of a sense of cohesiveness.

Finally, varying the composition of the group may have been more successful at invoking a social categorization. If a woman were in a group with 3 other men for example, the differences between her and the men may have been more intense for her resulting in a group level categorization.

The relevance of the experimental situation itself may have also had an effect on the results. The experiment involved a group of students without any past interaction for the most part and a group that is unlikely to have any future interaction either. This fleeting situation, which lasted approximately one hour, is quite different from a real world situation in which a woman could be working with a group of colleagues for an extended period of time. A woman actually hired through preferential selection procedures would have more long-lasting and complex relationships with her co-workers than in this experimental situation. Co-workers may recognize her affirmative action position and consequently make assumptions about her abilities and qualifications based on the stereotype. If a woman is constantly worrying about being labeled by others as unqualified or unskilled, she may feel that she constantly needs to prove her worth to others. This can subsequently impact affect, self-esteem and perceptions of performance. Alternatively, it may be that once women are working in a position on a daily basis, the stress associated with preferential selection is attenuated, as other factors become more

important. For this reason, it is important that the results of experimental simulations are replicated in real world contexts.

Not only are there confines within the experimental situation, but the use of university students as participants also presents various limitations. These students do not have a great deal of experience in the work world nor with the discrimination and prejudice some encounter in the workforce. Therefore the situation may not be particularly relevant to the students given their limited experience.

In the present study, participants were provided with the reasons for why the affirmative action procedure was used, namely due to a bias or prejudice. If women are actually presented with the reasons why affirmative action procedures are implemented, this may also have a buffering effect on the self-esteem and perceived abilities of the recipients (Kravitz et al, 1997). Research examining affirmative diversity does touch on this subject. If affirmative action recipients are informed initially that one of the reasons for the affirmative action is to add diversity to the workplace, allowing various points of view and the diversity of skills and abilities, this provides a justification for the affirmative action procedure and adds value to the group membership. Informing women of the benefits of a diverse workplace along with the possibility of bias in the hiring procedure, may improve the perceived fairness of affirmative action procedures.

This study directly compared the affects of a preferential treatment procedure in which qualifications were made explicit, to that of an exclusive quota procedure in which no mention of qualifications was made. Although the exclusive quota procedure was perceived as less fair than the preferential treatment procedure and recipients were more likely to attribute elements of the stereotype associated with affirmative action to

themselves, no differences in self-esteem, perceptions of performance or negative affect were found. Self-esteem scores were relatively high which may have provided participants with self-confidence such that their performance and self-esteem was not undermined.

This study supports mounting evidence (Brown et al., 2000; Graves & Powell, 1994; Heilman et al., 1998; Major, Feinstein, & Crocker, 1994; Matheson et al., 2000; Stanush et al., 1998; Taylor, 1994; Tougas et al., 1996) indicating that affirmative action procedures are not as harmful to the recipient's self-esteem and perceptions of performance and ability as originally purported. Since affirmative action procedures always include a consideration of qualifications in addition to group membership, the soft preferential treatment procedure reflects a more accurate representation of affirmative action procedures in reality. This contributes support that affirmative action procedures emphasizing the qualifications of the recipient can be effectively implemented without negative repercussions to the recipient.

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Appendix A

Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Research Title: Creative Problem-Solving

Research Personnel: The following people are involved in this research project and may be contacted at any time:

Karen Majka (Student Investigator, 788-2600, X2683)

Maria Giglio (Student Investigator, 788-2600, X2683)

Julie-Anne Richards (Student Investigator, 788-2600, X2683)

Dr. K. Matheson (Principal Investigator; Chair, Dept. of Psychology, 788-2648))

Dr. M. Glick Chair of Dept. of Psychology Ethics Committee, 788-2600, X2664)

Purpose and Task Requirements: The purpose of this study is to examine creative problem-solving. We will be asking you to complete a creative problem-solving task. Based on this task you'll be assigned roles that will define your position in a subsequent problem-solving discussion. In this study, we will be asking you to respond to some questionnaires about yourself and your perceptions. We will also be asking for 2 saliva samples to assess for indications of stress. This study should take no more than 1 hour.

Potential Risk/Discomfort: There are no physical risks in this study. There may be some stress associated with personal expectations of performance.

Anonymity/Confidentiality: The data collected in this study are kept anonymous and confidential. Your name should not appear anywhere on your questionnaire. The consent forms are kept separate from your responses.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

Signatures: I have read the above description of the study concerning creative problem-solving. The data in the study will be used in research publications or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (Print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

Appendix B

Instructions

"Hello, my name is _____ and this is an experiment about creative ability. We're attempting to determine what characteristics might be associated with people who are highly creative. Creative ability is essential to succeed in today's job market in which information is available quickly and easily and so people need to find creative ways to organize information and ideas to understand it. Employers are therefore interested in identifying the characteristics associated with highly creative individuals so that they can hire the best people.

In this study, as in the "real-world" everyone will start out as a member of the lower status general assisting staff. Everyone will have an opportunity to move into a better paying position by performing well on the creativity task. I'll be selecting one person from the group who will be assigned the 'ideas co-ordinator's position. The co-ordinator will be the person that has the most creative ability and so will have a slightly more important role than the rest of you in the study.

I'll explain more about this in a moment. I'm going to be asking all of you to complete two creativity tasks. The first will assess your creative abilities and will be used to determine who will be awarded the co-ordinator position. The second creativity task will be used as a basis for a group discussion in which the assisting staff will present their ideas, and the co-ordinator will determine whether any are worthy of further discussion. At the end of the discussion, the assisting staff will make a final recommendation. The co-ordinator will decide whether or not to accept the recommendation. We view the co-ordinator's ability to be selective in the quality of recommendations as extremely important.

Both creativity tasks will consist of putting your thoughts and ideas about a controversial issue on campus into writing. The issues have been identified by Carleton University as ones which are critical to the student body. Because the university is interested in these issues, they've actually asked us to forward the best suggestions to the university senate. We know they won't pay any attention if we send them everything. And so only the higher quality ideas of the co-ordinator, and the group recommendations accepted by the co-ordinator will be considered for passing on.

Clearly because the co-ordinator of ideas has more responsibility in the study in terms of first producing and second selecting the best ideas, he or she should be better compensated for their participation than those who are only assisting staff members. Therefore, the person selected as the ideas co-ordinator is eligible to enter a lottery for a \$250. The staff's payment however will depend on whether the co-ordinator finds their input useful. If the co-ordinator believes the ideas of the group as a whole are useful, then each member of the assisting staff will be eligible for a \$250 lottery. However, as you can imagine, the odds of winning this lottery are really reduced if the co-ordinators are not selective. So there is clearly an incentive for the co-ordinator to critically evaluate the ideas. If he or she decides the ideas of the group as a whole are not particularly useful or meaningful, then each member of the staff will only be eligible for a \$25 lottery.

Any questions so far?

In a moment I'll give you the first creativity task. When you have finished writing your responses, I'll take a few moments to score them in terms of their level of creative ability, using a scoring key that is commonly used to assess creativity in different institutions. Based on your performance on the creativity task I'll be awarding the co-ordinator position to the most qualified individual. The rest of you will remain members of the general assisting staff. For anyone to be considered for the co-ordinator position, you must obtain a score of at least 80%. If no one reaches this cut-off score, then no one will be assigned the co-ordinator role. The study will be ended at this point, and no-one will be eligible for the lotteries because payment isn't appropriate if no work is actually done. You'll simply be given your experimental credits.

Throughout this study, we'll be taking a number of measures. This includes a number of questionnaires we're using to assess what characteristics are associated with creative ability. We'll also be measuring stress levels using a saliva sample. We believe stress can affect performance, and so we want to analyse saliva samples for any indication of stress. A saliva sample simply consists of you placing a piece of dental cotton in your cheek for about one to two minutes, until the cotton is "completely drenched". You'd then place the cotton in a test tube. Saliva samples are later analyzed for stress-related hormones. We'll be asking you to do this twice in the study for comparison purposes.

Finally, everyone will complete a second creativity task, which will be used as a basis for a group discussion. After the group discussion, the staff will make a recommendation, and the co-ordinator of ideas will decide to accept it or not.

Do you have any questions about what this study involves?

Please read and complete the informed consent form.

→collect consent forms

As we mentioned to you, we believe stress may affect performance. To measure stress, we need to ask you for a saliva sample. → give instructions and collect saliva

→distribute first creativity task → gendered (for "social" condition) or gender neutral (for "personal" condition).

When I tell you, please turn over the paper in front of you. On this paper you will find a short description of the issue you'll be writing about and a number of questions. You will have ten minutes to answer the questions as thoroughly as possible. I will be marking them for the originality of the ideas, as well as the organization and clarity of your ideas. You can write in point-form or in full sentences, whatever you are more comfortable with, as long as I can understand what you are saying.

→give subjects ten minutes to read the questions and write their answers

at the end of the ten minute session, collect the essays

While you're waiting for me to score your responses, I would like you to complete this brief questionnaire. If you still have time, I will also distribute at this point the topic of that you'll be covering in the group discussion so that you have some time to think about it

- distribute 1st questionnaire & second creativity task (gendered or gender-neutral), and tell them to read this over while you score their responses*
- score responses using a bogus answer key*

After the scoring of the first creativity task, the experimenter will continue with the following:

“Typically in situations like this, the ideas co-ordinator is selected on the basis of both skill and ability, which basically means that he or she is good at the task. In our study, we’ve been attempting to select individuals who have demonstrated that they clearly have high creative abilities.

Unfortunately so far in the study, we’ve found that the proportion of men and women awarded the co-ordinator role does not reflect the proportion of male and female participants who should be eligible for the role. There is a substantial body of research that shows that there is no difference between men and women in their creative abilities. But the scoring key we chose to use, because it was the easiest and quickest to use, is clearly biased, because it consistently results in lower scores for women.”

Give one of the following, depending on assigned experimental condition:

1. Merit-based situation

“However we believe it is important to be consistent in our policy of always giving the co-ordinator position to the most qualified individual based on the scores obtained in the creativity task.”

2. Preferential Equivalent

Therefore, we have adopted a policy of giving the co-ordinator position to a qualified woman if a woman and a man obtain the same scores or there exists only a negligible difference between the scores on the creativity task, as long as they have first obtained the 80% cut-off mark.

3. Preferential Minimum Standard

...Therefore we have adopted a policy of giving the co-ordinator role to the most qualified woman regardless of whether she has obtained the cut-off mark of 80% or not.

4. Preferential Minimum Standard with expectations of hostility

...Therefore we have adopted a policy of giving the co-ordinator role to the most qualified woman regardless of whether she has obtained the cut-off mark of 80% or not. We believe this is necessary even though we know from past experience that this might mean some feelings of hostility from male participants who believe that this means that the woman chosen isn't qualified.

Continue for all subjects

I'll now let you know in writing whether you were given the co-ordinator position or if you will remain a member of the assisting staff. At this point in the study, it is important that you to keep your position to yourself, until we get to the group discussion itself.

→ give them their own performance results

Before we go any further, as I mentioned to you earlier, we believe that there are a number of characteristics associated with people's creative performance. This questionnaire is trying to identify some of those characteristics.

→Distribute questionnaire 2.

→After all participants have finished the questionnaires, the second creativity task will be distributed.

I will now ask you to complete the second creativity task that will for the basis of the group discussion. As you can see, it is similar in structure to the first task, but is focused on a separate issue. You will again have ten minutes to complete the task.

→Subjects will then be given ten minutes to complete the creativity task.

Before we go onto the group discussion, I would again like to get a stress measure using a saliva sample, and to get you to complete a brief questionnaire assessing any expectations you might have that might affect the group discussion.

- →get second saliva sample

→give questionnaire 3

→After the questionnaire packages have been finished and collected, subjects will be debriefed and informed of the true nature of the experiment.

→ give experimental credit, get lottery information, and give contact numbers

Appendix C

Gendered Essay Topic #1

A rape crisis hot-line has been available at Carleton University for a number of years. The hot-line is available 24 hours a day for individuals to call in and receive counseling and legal advice about rape situations. The need for a hot-line where rape victims can gain support and advice is of vital importance for women on a university campus. As the awareness of how pervasive rape and date rape actually is on campus, the importance of this rape hot-line has become increasingly evident over time.

Due to the recent provincial cuts in funding for education, the university is finding it more and more difficult to come up with money to finance the hot-line. The university administration has therefore threatened to withdraw funds from the rape crisis hot-line. They believe funds for the hot-line should be raised independently by those who organize the hot-line and should not come from the university. Other individuals believe this is a service vital to the student body and to female students in particular, and should be available on campus.

Please answer the following questions as to how you would decide whether the rape crisis hot-line should receive university funding or not.

- 1) Briefly discuss the most important issue you believe should be considered in making the decision to fund the hot-line or not.
- 2) What type of information would you feel it necessary to obtain in order to make an informed decision about the funding of the hot-line?
- 3) Who should make the ultimate decision about the funding of the rape crisis hot-line and why?

Appendix D

Neutral Essay Topic #1

A number of university administrators have proposed that user fees be introduced for such things as internet use and the borrowing of library materials. Due to the cutbacks that have occurred to university funding, maintaining high standards for the library and computer labs have become very difficult. They therefore argue that charging a nominal fee, such as 25 cents for borrowing a book or connecting to the internet would help maintain these high standards and not tax the students a great deal. The student association argues that these types of services should be covered by students' fees and should not be added onto everyday living expenses.

Please answer the following questions as to how you would decide whether user fees should be introduced or not:

- 1) Briefly discuss the main issues that you believe should be considered in making the decision of whether user fees should be introduced at Carleton University.
- 2) Briefly discuss how these user fees may or may not impact you personally.
- 3) What type of information would you need in order to make an effective decision about the introduction of user fees?

Appendix E

Gendered Essay Topic #2

The Carleton University Women's center is planning on offering a seminar on body image and the problems individuals encounter when trying to achieve an ideal body. The seminar will be open to both men and women, although most recognize that this is an issue that confronts more women than men. The women's center would like to obtain funding from the university for the seminar, so that they can hire professionals to discuss the issues related to body image. Some members of the university senate believe that the women's center should be responsible for raising their own money for these types of activities and not the university.

Please answer the following questions with respect to this issue:

- 1) Should the seminar be funded by the university? Why or why not (present two arguments you believe to be most important)?
- 2) Present two issues you believe should be discussed in a seminar on body image and the problems related to trying to achieve an ideal body.
- 3) Who would your target audience of the seminar be and how would you go about informing them of the seminar?

Appendix F

Neutral Essay Topic #2

A number of students active in the politics of the university have proposed that certain programs such as psychology, criminology, political science and sociology should receive a larger proportion of university funding than other programs such as English literature or fine arts. They propose that programs such as psychology and criminology offer more to society than studies of English literature or fine arts. Other students and members of the university argue that the study of the art and literature is just as important to society since they reflect society at that particular time in history and give insights into that society. They therefore argue that psychology and other programs like it should not be favoured over the literature and fine art programs when it comes to university funding.

Please answer the following questions as to how you would decide whether Carleton should give more financial support to the programs of psychology sociology, and criminology, etc. than to the fine arts and English literature programs.

- 1) Briefly discuss the primary issue that you believe should be considered in making the decision of providing more financial support to the programs of psychology, criminology, etc. than to programs in fine arts and English literature.
- 2) What type of information would you need in order to make an effective decision about this issue?
- 3) Briefly discuss how these changes to funding may impact you and your education.

Appendix G

Debriefing

Firstly, we will not be proceeding with the study any further. The group discussion will not take place, and this is actually the end of the experiment. There is more to this study than I have told you about so far. But before I tell you exactly what it is, I would like to explain why it is necessary in some kinds of psychological studies not to tell people all about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict about how they will react, then they might deliberately do whatever it is they think that we want them to do, just to help us out and give us the results that they think we want. If that happened, their reactions would not be a good indication of how they might react in a situation in everyday.

It is also possible that the opposite might occur and that people might think that if we predicted that they would do a certain thing, they might deliberately not do that to show us that we can't figure them out. That would also make the results invalid, because again what people would be responding to is what they thought we were looking for rather than responding naturally as they would in everyday situations.

This is not a problem in all studies. For example, in a study on learning, if you wanted to have people learn something and then test them, you might want them to know exactly what they were going to be asked to recall so that they would do their best and learn as well as they could.

Now I would like to explain exactly what we are trying to get at in this study, and why we couldn't tell you everything from the beginning.

The actual purpose of this experiment was to determine reactions to affirmative action procedures. Affirmative action procedures are implemented by some companies and government departments in order to give women and minority group members the same opportunities enjoyed by men and majority group members. These procedures involve giving preferential treatment to women or minority group members when choosing a person for a job or for promotion. In the

case of women, it can involve either choosing a female candidate over a male candidate, when their qualifications are the same or roughly the same, or it can involve holding out in the hiring of an individual until a qualified female candidate has been found.

Some studies have found that when women receive a job or promotion as a result of affirmative action policies, their self-esteem often decreases and their evaluation of their own performance suffers as well. Other studies have not found this effect. Therefore we are trying to determine why this decrease in self-esteem may occur in some situations, but not others.

What we hypothesized is that if a woman's gender is relevant to the situation, then women will view the affirmative action response as more appropriate, and definitely better than if women were discriminated against without it. On the other hand, if gender is not relevant to the actual situation or job, women may be more likely to feel that they didn't deserve the position and so their self-esteem and perceptions of performance will suffer.

To test this idea, we manipulated the topics you wrote about in your essays to either make gender relevant or not. Some students wrote about issues such as installing a rape crisis hotline on campus, and the women's centre offering a seminar on body image. We have found that these issues are viewed as more relevant to women than men. Other students wrote about issues such as funding for social sciences versus the arts, and about introducing user fees for library and internet use – these topics are not more relevant for women or men.

So we think that women would be more comfortable if affirmative actions were used to overcome discrimination in dealing with the women's issues than if they were dealing with the issues relevant to both women and men. To test this, we also varied how people were selected into the minister of ideas role. Sometimes we continued to use the biased creativity score, and sometimes we used an affirmative action strategy. Then we can look for differences in how people felt depending on how the minister was selected for either the gender related or unrelated situations.

We also think that these factors will affect men's responses in a similar way. In fact, we think that it is possible that sometimes people who are targeted in affirmative actions are very worried about what other's will think of them and how competent they are. So we wanted to look at men's responses. We also sometimes told you that there might be hostile reaction to using affirmative action – in other words when we used affirmative action, sometimes we said that there might be some hostility expressed because we used it, and sometimes we didn't say anything about this. Then we could see whether this worry made a difference in how women felt if they were selected through affirmative action.

One thing that you should know is that because we were interested in reactions to affirmative action, we decided even before you walked into the lab today whether you were going to be awarded the position of minister or not. When we didn't use affirmative action, we decided half of you would get the position and half of you would not. When we did use affirmative action, women were always told they were awarded the position and men were always told that they were not. In other words, we wanted to maintain experimental control that reflected our own interests. So even though we told you that you were chosen based on your score on the creativity task or based on your score and your gender, this was not true. We have not tested your creativity in this study at all. We are interested in how you felt about your own creativity skills, but that is all. Your success or failure in this study is absolutely no reflection of you and your own skills, because this was decided before you even walked in here.

Given all of this, all of you will in fact be eligible for the \$250 lottery. We had led you to believe that some of you wouldn't be paid as much because this would make this study more like the real world. But given that your position and tasks had nothing to do with your ability in the end, you are all eligible for the \$250 lottery.

So this study was not a test of your ability or your character. There were no correct responses. People's natural responses are what we are looking for. Also, we are not interested in the responses of any one individual. In order for us to draw any conclusions, we will have to

combine the data that we got from you together with data from other people so that we can draw conclusions about the average person's reactions. What this means is that it is going to be necessary for us to ask you not to say anything about the study to anyone else. If you talked to someone else about the study and told them all the things I just told you and then they were in the study, that would be just the same as if I told them at the beginning all about the whole purpose of the study: their reactions wouldn't be natural.

If anybody asks you about the study, just tell them it was a study about creative ability and characteristics associated with creativity. You're not lying, as this is really the context in which we are looking at these ideas. You don't need to make it a mystery, just something you've been asked not to talk about any more in case they bias their own reactions. If they want to know more, they can sign up for the study.

Do you have any questions? Comments? Suggestions?

Thank-you for your help. In the event that you have any concerns about this study, or anything you wish to discuss further, here are a list of people you can contact.

Give contact sheet / credits / fill out lottery stubs.

Appendix H

Meta-Contrast Ratio

Using the characteristics/issues below, indicate the extent to which you think women are similar or different from one another along each dimension. Place in the space to the right of each attribute a number that best represents your opinion on similar women are to one another.

- 0 not at all similar to one another
- 1 mildly similar
- 2 moderately similar
- 3 very similar
- 4 extremely similar to one another

Attributes

Assertive	_____
Conceited	_____
Affectionate	_____
Friendly	_____
Sensitive to the needs of others	_____
Likeable	_____
Sympathetic	_____
Analytical	_____
Competitive	_____
Truthful	_____
Understanding	_____
Has leadership abilities	_____
Gentle	_____

Values

Social justice	_____
Family security	_____
Mature love	_____
Spiritual life	_____

Social Experiences

Being expected to juggle family, career, and homemaking	_____
Experience with violence by men (rape, abuse)	_____
Trying to conform to a type of body image	_____
Payment for work of equal value	_____
Feeling unsafe (e.g., walking alone after dark)	_____
Working hard and getting ahead in one's career	_____
Having the same educational opportunities	_____
Having the same career opportunities	_____
Experience with sexual harassment	_____
Being appreciated for work in the home	_____

ALLEVIATING THE AFFIRMATIVE ACTION STEREOTYPE

Using the same characteristics/issues as you just rated, now indicate the extent to which you think women are similar or different from men. Place in the space labeled "Women/Men" the number that best represents your opinion on how similar women are to men.

- 0 not at all similar to one another
- 1 mildly similar
- 2 moderately similar
- 3 very similar
- 4 extremely similar to one another

Attributes

Assertive	_____
Conceited	_____
Affectionate	_____
Friendly	_____
Sensitive to the needs of others	_____
Likeable	_____
Sympathetic	_____
Analytical	_____
Competitive	_____
Truthful	_____
Understanding	_____
Has leadership abilities	_____
Gentle	_____

Values

Social justice	_____
Family security	_____
Mature love	_____
Spiritual life	_____

Social Experiences

Being expected to juggle family, career, and homemaking	_____
Experience with violence by men (rape, abuse)	_____
Trying to conform to a type of body image	_____
Payment for work of equal value	_____
Feeling unsafe (e.g., walking alone after dark)	_____
Working hard and getting ahead in one's career	_____
Having the same educational opportunities	_____
Having the same career opportunities	_____
Experience with sexual harassment	_____
Being appreciated for work in the home	_____

Appendix I

Performance

Please rate how you believe you performed on the creativity task you just completed in relation to the following items:

1. Ability to express your thoughts clearly

Poor						Excellent
1	2	3	4	5	6	7

2. Ability to communicate your thoughts in an organized way

Poor						Excellent
1	2	3	4	5	6	7

3. Uniqueness of ideas expressed

Poor						Excellent
1	2	3	4	5	6	7

4. Writing ability

Poor						Excellent
1	2	3	4	5	6	7

5. Decisiveness of ideas

Poor						Excellent
1	2	3	4	5	6	7

6. Creativity

Poor						Excellent
1	2	3	4	5	6	7

7. Likely effectiveness of ideas

Poor						Excellent
1	2	3	4	5	6	7

8. Fairness of ideas for all concerned

Poor						Excellent
1	2	3	4	5	6	7

Appendix J

Perceptions of the selection procedure

Please rate the method in which the primary creative individual was selected with respect to the following dimensions:

Very Fair 1	2	3	4	5	6	Very Unfair 7
Discriminates against women 1	2	3	4	5	6	Does not discriminate against women 7
Necessary 1	2	3	4	5	6	Unnecessary 7
Appropriate 1	2	3	4	5	6	Inappropriate 7
Uncalled for 1	2	3	4	5	6	Called for 7
Biased 1	2	3	4	5	6	Unbiased 7
Discriminates against men 1	2	3	4	5	6	Does not discriminate against men 7

Appendix K

Stereotype of Affirmative Action Recipient

Please rate the extent to which the following statements apply to yourself:

1. I am a creative person.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

2. I am deserving of the position I was assigned.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

3. I received the position I was assigned because of my gender.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

4. I received the position I was assigned because of my score on the creativity task.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

5. I am (only) qualified for the position I was assigned.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

6. I have excellent creative abilities.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

7. I probably would not be in the position I am in if the selection procedure had been different.

Does not apply
at all

1 2 3 4 5 6

Applies
a great deal
7

Appendix L

Self-Esteem

1. I feel confident about my abilities.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

2. I am worried about whether I am regarded as a success or failure.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

3. I feel frustrated or rattled about my performance.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

4. I feel that I am having trouble understanding things that I read.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

5. At this moment, I feel self-conscious.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

6. I feel as smart as others.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

7. I feel displeased with myself.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

8. I am worried about what other people think of me.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

9. I feel confident that I understand things.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

10. I feel inferior to others at this moment.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

11. I feel concerned about the impression I am making.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

12. I feel that I have less scholastic ability right now than others.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

13. I feel like I'm not doing well.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

14. I am worried about looking foolish.

Not at all	A little bit	Somewhat	Very much	Extremely
1	2	3	4	5

Appendix M

Affect

1. Calm							
Not at all							Very much
1	2	3	4	5	6		7
2. Secure							
Not at all							Very much
1	2	3	4	5	6		7
3. Fearful							
Not at all							Very much
1	2	3	4	5	6		7
4. Worrying							
Not at all							Very much
1	2	3	4	5	6		7
5. Irritated							
Not at all							Very much
1	2	3	4	5	6		7
6. Cooperative							
Not at all							Very much
1	2	3	4	5	6		7
7. Agreeable							
Not at all							Very much
1	2	3	4	5	6		7
8. Angry							
Not at all							Very much
1	2	3	4	5	6		7
9. Discouraged							
Not at all							Very much
1	2	3	4	5	6		7
10. Blue							
Not at all							Very much
1	2	3	4	5	6		7
11. Fine							
Not at all							Very much
1	2	3	4	5	6		7
12. Active							
Not at all							Very much
1	2	3	4	5	6		7