

When Searching Hurts: The Role of Information Search in Reactions to Gender Discrimination

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Abstract Two laboratory studies conducted with Dutch students explored women's motivation to search for evidence of gender discrimination and its effects on psychological well-being. Study 1 ($N=161$) considered situational self-relevance of one's personal outcomes (personal failure or success) on women's motivation to collect information about gender discrimination. Study 2 ($N=106$) manipulated information search and studied its effects on well-being when information contains evidence of gender discrimination or personal failure. Results revealed that women are motivated to search for evidence of discrimination when outcomes are highly self-relevant (Study 1) or the need to search is high (Study 2). Furthermore women suffer from evidence of prejudice, but only when they are personally affected by this prejudice and evidence suggests it is pervasive.

Keywords Prejudice · Gender · Discrimination · Stigma · Information processing

Introduction

This paper reports two studies that investigate how Dutch female students come to realize that they are discriminated due to their gender. We examine this in situations in which they may initially be very focused on their personal outcomes (i.e., success or failure in a selection procedure) rather than on gender prejudice, and assess how discovering evidence of gender prejudice makes them feel. We take an information processing perspective (see also, Crosby et al. 1986; Rutte et al. 1994) to predict women's motivation to search for information about gender prejudice. Building on research examining responses to discrimination among US samples, (Branscombe et al. 1999; Schmitt and Branscombe 2002a; Major et al. 2003a) we predict how information about gender discrimination affects women's well-being. We make these predictions on the assumption that similar psychological processes play a role in different national contexts. We also consider whether responses to discrimination are determined by women's personal experience of discrimination, or whether responses are motivated by information on the treatment of other women. Study 1 examines how self-relevance of personal failure (vs. success) in a selection procedure affects the motivation to search for information indicating discrimination, and how this relates to personal and group-level well-being. Study 2 compares the well-being effects of evidence of prejudice vs. personal failure under high (vs. low) information search instructions.

In order to achieve social change and improve the status of women it is essential to recognize and report discrimination. However, many situations of potential discrimination may focus women on their personal outcomes (i.e., rejection after a job interview) rather than the disadvantage of their group (i.e., a prejudiced interviewer). Indeed

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discrimination is often expressed in subtle ways thus making prejudice recognition more difficult (Major et al. 2002; Swim et al. 1998). Accordingly, it has been documented that members of discriminated groups such as women often fail to recognize prejudicial attitudes and discriminatory treatment (Barreto and Ellemers 2005a, b; Major et al. 2002). Evidence thereof has been found across different countries, such as Canada, the United States, Belgium and the Netherlands, and in different age groups (Bourguignon et al. 2006; Crosby 1984; Quinn and Olson 2001; Verkuyten 2002).

The present study was conducted in the Netherlands, which is generally regarded as an egalitarian country. Nevertheless, a recent study of the Netherlands Central Bureau of Statistics and the Social and Cultural Planning Agency (Merens and Hermans 2008) indicates that 75% of female workers work part-time (24 h per week on average), and only 43% are economically independent. This study also revealed that, after correcting for differences in age, education and experience, women earn 3–6% less than men doing the same job, and only 7% of the top managerial positions are held by women. These and similar findings have received a lot of media attention, and there is overall awareness that governmental goals that have been set to achieve greater gender equality in labor participation are not being met. Despite this general awareness of gender *inequality* in the Netherlands, this has not been found to translate to an awareness of gender *discrimination* at a societal or personal level. A Eurobarometer survey (TNS opinion & social network 2008) carried out in 2008 accordingly shows that only 27% of the Dutch think that gender discrimination is widespread in Dutch society and only 3% claim to have been *personally* discriminated on the basis of their gender.

Why would women fail to perceive they are discriminated against? Previous research has addressed different factors that may impede the perception of gender discrimination. These examined the costs of attributions to discrimination (Sechrist and Delmar 2009), the importance of schema activation in labelling organizational incidents as sexual harassment (Magley and Shupe 2005), the effects of sexist attitudes, personal beliefs, and gender identities of men and women in perceiving discrimination (Cameron 2001; Foley et al. 2006) or protesting against it (Foster et al. 2004), and the long-term consequences of coping with discrimination for well-being (Foster 2009). In the present research, we build on the observation made by Crosby and colleagues (1986), that failure to perceive gender discrimination at the individual level may be due to lack of group-level information (see also Rutte et al. 1994). Women typically only have information about individual cases of discrimination (e.g. their own treatment), whereas inferring discrimination tends to require the comparison of a larger number of

cases (e.g., treatment of other women and men). Consequently, in many situations these inferences require an active search for additional information. Yet, we also know that elaborate information processing does not always occur (Fiske and Taylor 1991; Eagly and Chaiken 1993). Thus, when studying perceptions of gender discrimination it is important to consider conditions under which targets are motivated to *search for information* that may enable them to discover discrimination when the cause of their treatment is ambiguous. This our first aim.

A second aim of this research is to examine the *consequences* of viewing evidence of discrimination for women's well-being. Does the realization that a personal outcome is due to one's gender rather than (lack of) personal ability have positive or negative consequences for well-being? Past research has provided conflicting answers to this question. By studying differences in information processing the present studies can provide more insight into the mechanisms underlying responses to gender discrimination. In the following we first consider when targets of discrimination may be motivated to search for information. We then review literature on the effects of discrimination on well-being and consider the possible role of information search in this process.

The Role of Information Search in Perceptions of Discrimination

In 1984 Crosby published a paper on "The denial of personal discrimination" in which she discussed the paradox that although American women were frequently aware of gender discrimination at the societal level, this awareness did not transfer to reports of personal discrimination. This seems to point to a generic psychological phenomenon, rather than indicating different experiences with discrimination due to age or cultural context, as these effects have been found both in adolescent and adult women, and were documented in different national contexts, such as Canada, Belgium, and the Netherlands (e.g., Bourguignon et al. 2006; Taylor et al. 1994; Guimond and Dubé-Simard 1983; Verkuyten 2002).

Research studying this phenomenon has indicated that failing to perceive personal discrimination may be due to lack of information that would allow perceivers to shift from thinking about personal treatment to a more abstract level at which that personal treatment can be attributed to one's gender (Crosby et al. 1986; Rutte and Messick 1996; Rutte et al. 1994). Indeed, many situations in which discrimination takes place do not include cues to group membership and in fact imply *personal* failure (such as when an individual is rejected for a job interview) rather than gender discrimination (see also Hebl et al. 2002; Barreto et al. 2009, for a review).

Yet, one important question prior research has not considered is whether, and under what circumstances, women are at all *motivated* to actively search for information that can reveal evidence of personal discrimination. Most of the prior research addressed properties of the *information* provided that might affect cognitive processing of such information. For instance, participants were asked to consider whether a company discriminated against its female co-workers and provided participants with the necessary information to be able to conclude that this was the case (e.g. Crosby et al. 1986; Rutte and Messick 1996; Rutte et al. 1994). Given that participants took part as an observing third party, these studies do not consider to what extent women who have received negative information about *themselves* (in the form of personal rejection) are *motivated* to search for extra information that may reveal discriminatory treatment. Are women prepared to search for such information when this information is self-relevant to them? We examine this question by focusing on targets of discrimination, instead of observers.

Motivation to Search for Information

In the present research we consider to what extent women are motivated to engage in information search about the outcomes they receive. In this context it is important to realize that, in the first instance, information search may not be instigated or guided by any references to group membership, or by the suspicion of discrimination. In fact, the realization of group-based treatment may often only happen *during* or even after (Ellemers and Barreto 2006) (and not *before*) information search. This means that other individual level factors may provide the initial motivation to search for such information. Accordingly (in Study 1) we examine one factor that is likely to influence need to search for information by increasing the self-relevance of the situation individuals experience and thus of the information provided concerning their success or failure.

Although there is no work that looks at the impact of self-relevance on the need to search for information in situations of discrimination, more general knowledge about information processing indicates that people attend to and process information more carefully when the issue is more personally relevant. Increased attentiveness to information under conditions that imply high relevance to the self has been observed, regardless of the amount of threat implied in the situation (i.e., after personal success as well as failure; Dunning 1995). By contrast, in situations of low self-relevance, people use heuristic cues to derive their judgments while they engage in minimal amounts of information processing (Petty and Cacioppo 1979; Petty et al. 1981; Eagly and Chaiken 1993). We therefore expect that women are more likely to be motivated to search for

information about the cause of the outcome they receive when the situation is of high as opposed to low self-relevance to them. We predict this to be the case, regardless of whether they have experienced success or failure.

The Consequences for Well-being

What are the consequences of searching for information and viewing evidence of gender discrimination for well-being? We examine the situation in which the more information female targets collect about their personal outcomes in a bogus selection procedure, the more cases they see of other females who are treated unjustly in comparison to male candidates, by a male evaluator. This means that the more information targets search for, the stronger and more pervasive the evidence of group disadvantage and prejudice and the more people are also able to consider their own outcomes in light of the way their gender group was treated. How does such evidence of group disadvantage influence targets' well-being? Research considering this question has been largely conducted in the United States among female university students, but similar results have been found with university student samples in Europe (e.g., Barreto and Ellemers 2005a, b; Hansen and Sassenberg 2006; Stroebe et al. 2009b).

Prior research has revealed that being able to attribute negative personal treatment to the prejudice of another person can have both positive and negative consequences for target's well-being. In this context, we distinguish between cases in which people attribute their personal outcomes to discrimination (and refer to this as 'attributions to discrimination' or 'perceived discrimination'), and situations where people see their group in general as disadvantaged (which we denote as 'perceptions of prejudice'). We argue that well-being consequences may differ depending on whether people consider discrimination as a personal-level or group-level experience.

At the personal level, research indicates that making attributions to discrimination can help protect the self in the face of personal failure. Research that has considered the self-protective properties of making attributions to discrimination (Crocker and Major 1989) has revealed that making attributions to discrimination has positive consequences for well-being to the extent that these attributions allow targets to avert self blame for failure by making attributions to the prejudice of another. In this case attributions to discrimination can alleviate the negative consequences of personal failure by adding an external element to the causal attribution of failure (Crocker et al. 1991; Major et al. 2002). From this perspective, one may argue that viewing evidence of group disadvantage may increase levels of personal well-being after personal failure as it allows women to have a more positive view of themselves.

At the group level, research by Branscombe and colleagues has provided evidence that perceiving discrimination can be harmful to the extent that it signals that one's group and therefore part of the (group) self is devalued (Branscombe et al. 1999). Furthermore group devaluation implies that negative outcomes can be expected in the future, limiting opportunities (Schmitt and Branscombe 2002a, b; Schmitt et al. 2003). Indeed research by Schmitt and colleagues (2003) revealed that attributing personal failure to discrimination in an evaluation context in which women were judged by male evaluators had more negative consequences for both group level (i.e., private and public collective self esteem) and personal level well-being (i.e., affect) when individuals perceived gender discrimination to be more contextually pervasive (i.e., all male evaluators are prejudiced) than when this was not the case (i.e., only the male evaluator evaluating the participant is prejudiced).

The research by Branscombe and colleagues thus provides evidence that discrimination may be more harmful to both the group-level self and the personal self the more pervasive women perceive it to be. The present research complements this prior knowledge as we consider the dynamic process through which women perceive pervasive discrimination—the more information they consider, the more cases they see of other women who are treated unjustly compared to men. Thus, information search provides stronger evidence that the prejudice of the evaluator is structural and pervasive. Extending the research by Branscombe and colleagues (Branscombe et al. 1999; Schmitt and Branscombe 2002a) we argue that gender discrimination should have particularly negative consequences for group and personal well-being the more information participants search for, and therefore also the stronger the evidence of discrimination.

In the present research (Study 1) we vary the nature of individual level outcomes (i.e., success versus failure). This allows us to focus more in depth on the processes underlying responses to pervasive discrimination. Past research (Branscombe et al. 1999; Schmitt et al. 2002; Schmitt et al. 2003) cannot discern whether the negative consequences of experiencing pervasive discrimination for well-being are due to the fact that individuals suffer from the fate of their *group* (empathy explanation), or from the knowledge that they experience, and will in the future experience, negative *personal* outcomes (personal interest explanation). This is the case because in these studies pervasive discrimination was always considered in situations where both the group was devalued *and* participants personally experienced discrimination (Branscombe et al. 1999; Major et al. 2007; Schmitt et al. 2002, 2003; but see Stroebe et al. 2009b, for incidental discrimination). In the present research we examine whether women suffer from discrimination that is pervasive because it negatively affects

their personal outcomes (personal interest explanation). We also consider the alternative possibility, namely that viewing evidence of group disadvantage is harmful for women's well-being—suggesting that they suffer from the fact that their group is devalued (empathy explanation). In this way the present research provides additional insights into the processes underlying responses to pervasive discrimination.

Study 1

Study 1 was conducted in the context of a selection procedure. We manipulated the nature (Outcome: rejection/selection) and self-relevance (Self-relevance: low/high) of personal outcomes. The participants were female and the person in charge of the evaluation procedure was male. Participants believed that both males and females were taking part in this study. Importantly, after the selections were made participants were given the opportunity to search for information about the outcomes received, and this information could provide evidence of gender discrimination. Since prior research has suggested that amount of negative information received (Taylor et al. 1995) and unexpectedness of the outcome (Wong and Weiner 1981; Eagly and Chaiken 1993) can increase information search, we controlled for these processes by counterbalancing the experimental manipulations of self-relevance and selection outcome for the valence of feedback received (negative vs. positive).

We also examined the consequences of information search for well-being, distinguishing between more individual (negative affect) versus group level (collective self esteem) indicators of well-being. This allows us to study how women feel about themselves personally in relation to how they feel about their group membership. To the extent that women suffer from evidence of discrimination, as this makes clear its pervasiveness, we would expect them to experience more negative individual and group level well-being the more evidence of discrimination they view. When these lower levels of well-being are experienced depends on whether responses to pervasive discrimination are determined by personal interest or group empathy. Thus the hypotheses we test are as follows:

1. Self-relevance should affect *motivation to search for information* (wish to search for information, actual search behaviour) such that individuals seek more information when individual outcomes are highly self-relevant.
- 2a. Because information search provides more evidence of gender discrimination, the amount of information sought (dependent measure) should be positively correlated to perceptions of prejudice.

- 2b. The amount of information sought (dependent measure) should be negatively correlated to individual and group level well-being, such that those who view more evidence of gender discrimination indicate more negative affect and lower collective self esteem.
- 3a. To the extent that evidence of (pervasive) discrimination is harmful for well-being, a *personal interest explanation* would predict an interaction effect of self-relevance by outcome on individual (negative affect) and group level (collective self esteem) well-being, such that individuals experience lower levels of well-being (more negative affect, lower collective self esteem) when they are rejected and their outcomes are highly self-relevant.
- 3b. An *empathy explanation* would predict a main effect of self-relevance on well-being such that individuals experience lower individual (negative affect) and group level well-being (lower collective self esteem) when outcomes are highly self-relevant (due to amount of evidence of discrimination viewed), regardless of own outcomes.

Method

Design and Participants

One hundred and eighty-four female students of Leiden University took part in the experiment for course credits or payment of € 6 (US\$=7.70). Participants were randomly assigned to the 2 (Self-relevance: high/low) X 2 (Feedback: positive/negative) X 2 (Outcome: rejection/selection) between participants factorial design in the sequence they entered the lab.

Procedure

Upon arrival in the lab participants were received by a female experimenter and seated in front of computers in separate cubicles. Participants read they were (supposedly) taking part in a joint project of Leiden University and F., a bogus company specialized in coaching and recruitment, to study how selection procedures are experienced by job applicants. They were informed they would be taking part with a number of other participants in a selection procedure for a traineeship. It was stressed that, although they would not be offered an actual job at the end of the procedure, it was likely they would experience similar selection procedures in the future. Participants read the actual selection would be conducted via the computer by an evaluator of the company, Hans Broekens, in fact a confederate. Participants could see the confederate, dressed in a suit, sitting in front of a computer in an adjacent room as they entered the

laboratory. Before filling out a selection questionnaire on the basis of which participants allegedly would be accepted they were provided with information that contained the manipulation of self-relevance.

Manipulation of self-relevance We manipulated self-relevance of the situation by varying the degree to which the outcome of the procedure was personally consequential (see also Dunning 1995). Participants in the *high self-relevance* condition read that the company was looking for characteristics that are diagnostic of future success in the job market. Participants were then led to believe that this selection questionnaire was a reliable indicator of one's chances in the job market. In the *low self-relevance* condition participants read that in the present selection procedure the company was looking for characteristics specific to the present job at this particular company. They were then led to believe that the selection procedure was tailored to this particular company, but would not indicate how well participants would do in the job market more generally. Before filling in the selection questionnaire, participants were asked to indicate whether they had understood the instructions so far (manipulation check of self-relevance). Then participants completed the selection questionnaire. After a number of demographic questions (e.g., age, marital status), participants were asked 20 questions about their daily life (e.g., "I like to do things my own way") which only functioned as part of the cover story.

Manipulation of feedback and outcome After completing the selection questionnaire participants were asked to wait while the computer calculated their score on this questionnaire. All participants received a score of 73. In the *negative feedback* condition participants were told this was a comparatively low score and that they stood little chance of being selected. In the *positive feedback* condition participants were told this was a comparatively high score and they had a good chance of being selected by the company. Participants then received a message from the evaluator via the computer informing them that they had either been accepted (*Selection*) or rejected (*Rejection*). At this stage they were asked to complete the dependent measures.

Dependent Measures

Manipulation checks After the outcome decision, participants answered three questions to check the manipulation of self-relevance (e.g., "I find it very important for my personal development that I am selected for this job", $\alpha=.85$) as well as two filler questions about the selection

procedure to enhance credibility of the cover story (e.g., “I want to be better than other participants”). On these and other measures described below, participants indicated agreement on a 7 point scale (1=strongly disagree, 7=strongly agree).

Information search We had two separate indicators of information search, namely participant’s indications of their wish to search for information, and their actual search behavior.

Wish to search for information Before being given the opportunity to examine the information matrix (but after the manipulations), participants indicated in five items the extent to which they wished to search for information (e.g., “I would like to gain more insight into my achievements in this procedure”, $\alpha=.81$). These items were averaged to form a composite measure in which higher values indicate a greater wish to search for information.

Actual search behavior Participants were also asked to indicate whether they would like extra information concerning the selection procedure (yes/no). Participants who indicated yes were able to see the information matrix. It provided information about other applicants who had taken part in selection procedures conducted by the same evaluator. This matrix showed the first names of eight female and eight male bogus applicants—this procedure ensured that applicants’ gender was clear without making explicit that it was important in the present context. Participants could access further information about each bogus applicant by clicking cells with his or her name. Participants could click 32 cells in total, 2 per bogus applicant. Search behavior could thus range from 0 clicks to 32 clicks. A higher number of clicks indicates more information search.

Per bogus applicant, one cell revealed his/her score on the selection questionnaire, the other whether the applicant was selected or rejected. Each cell remained visible in the matrix after it had been clicked so that the more cells were clicked the more information stayed on the screen and could be compared. All bogus males had lower scores, ranging from 35 to 65 ($M=50$) than all bogus females, ranging from 65 to 85 ($M=75$) yet six out of eight males were selected whereas no females were selected. Thus participants who clicked all matrix cells could see that more women than men were rejected despite having higher qualifications. It is important to note that the information matrix thus provided the only cue to participants that they may be dealing with an evaluator who discriminates against women.

Perceived prejudice of the evaluator Participants indicated their agreement with different statements to indicate to what

extent they saw the evaluator, Hans Brockens, as being “prejudiced” or “discriminatory” ($r=.75$). These items were averaged to form a composite measure in which higher values indicated more perceived prejudice. The items were disguised by a number of other items that measured other characteristics of Hans Brockens (e.g., “intelligent”).

Affect After information search, participants indicated their agreement with statements indicating the experience of negative affect (e.g., sad, angry, $\alpha=.96$) taken from McFarland and Ross (1982). When necessary (i.e., calm) items were reverse scored in order to obtain a composite average measure in which higher values indicated greater negative affect.

Collective self esteem The public (e.g., “at this moment I feel women are valued”, “in this selection procedure women are seen as less efficient”, last item reverse scored; $\alpha=.72$) and private (e.g., “at this moment I am happy to be a woman”, “I find it a shame that I am a woman”; last item reverse scored, $\alpha=.57$) collective self esteem subscales of Luhtanen and Crocker’s (1992) Collective self esteem scale (CSE) were administered. Items were averaged to form two composite scales in which higher values indicated respectively higher public and private collective self esteem with respect to gender.

Results

Unless otherwise stated, data were analyzed using a 2 (Self-relevance: high/low) X 2 (Feedback: positive/negative) X 2 (Outcome: rejection/selection) between participants analysis of variance.

Descriptive Analyses

We first conducted a 2 (Self-relevance: high/low) X 2 (Feedback: positive/negative) X 2 (Outcome: rejection/selection) between participants multivariate analysis of variance with participants’ age and year of study as covariates in order to consider whether these variables differed between conditions. Analyses revealed that we did not need to control for these variables as there were no differences between conditions for age, $F(7, 145) = .77$, ns, or study year, $F(7, 145) = .87$, ns. Overall, we found multivariate significant main effects of outcome, $F(7, 146) = 2.96$, $p<.01$, $\eta^2=.12$, and of self-relevance, $F(7, 146) = 2.12$, $p<.05$, $\eta^2=.09$. Univariate analyses of these effects were conducted (see below), to examine support for specific predictions. No other main or interaction effects were significant, $F_s < 1.59$, $p_s > .14$, $\eta^2 < .07$.

Manipulation Check

The manipulation check of self-relevance showed that participants in the high self-relevance condition found their outcome more self-relevant ($M=5.34$, $SD=.87$) than participants in the low self-relevance condition ($M=4.87$, $SD=1.16$), $F(1, 153) = 9.59$, $p < .01$, $\eta^2 = .05$, as intended. No other effects were reliable, $F_s < .69$, $p_s > .41$, $\eta^2 < .01$.

Information Search

Wish to search for information Only nineteen of the 184 participants indicated they did not want to view the information matrix. This group was too small to conduct separate analyses of variance (ANOVA) and was therefore excluded from further analyses. Four participants were not able to look at the information matrix due to technical problems and were excluded from further analyses. Chi-square analyses on the remaining number of participants in the self-relevance, feedback and outcome conditions showed no reliable difference in distribution across the eight conditions, $\chi^2(7, N=161) = 1.44$, ns. As predicted (hypothesis 1), participants in the high self-relevance condition indicated a greater desire to gain extra information concerning the outcome and procedure ($M=5.44$, $SD=.91$) than participants in the low self-relevance condition ($M=5.02$, $SD=.95$), $F(1, 153) = 9.43$, $p < .01$, $\eta^2 = .05^2$. No other main or interaction effects were reliable, $F_s < 1.5$, $p_s > .22$, $\eta^2 < .01$.

Actual search behavior Information search was meant to be assessed as a continuous measure (from 0 to 32 possible cell clicks). However, as 105 of 161 participants clicked all 32 cells we had to distinguish between participants who were motivated to acquire all the information available (32 cells clicked) and those who gave up before that was the case (0–31 cells clicked) when given the opportunity to search for information. A 2 X 2 X 2 log linear analysis on matrix clicks revealed only a reliable main effect of self-relevance on information search, $\chi^2(1, N=161) = 3.81$, $p = .05$. There were no other reliable effects. Within the low self-relevance condition 42% of participants collected incomplete information, whereas 58% collected all available information. By contrast, in the high self-relevance condition only 27% collected incomplete information, whereas 73% searched for all available information. Therefore, as predicted (hypothesis 1), and despite the limitations of these analyses, participants for whom the situation was highly self-relevant searched for more information than participants for whom the situation was less self-relevant.

Perceived Prejudice of the Evaluator

Analyses of perceived prejudice of the evaluator ($M=4.16$, $SD=1.19$) revealed no significant main or interaction effects, $F_s < 3.25$, $p_s > .07$, $\eta^2 < .02$. There was a marginal Outcome X Feedback interaction, $F(1, 153) = 3.25$, $p = .07$, $\eta^2 = .02$. Simple effect analyses indicated that participants who received negative feedback and were rejected evaluated the evaluator as more prejudiced ($M=4.46$, $SD=1.26$) than those who were accepted ($M=3.91$, $SD=1.21$), $F(1, 157) = 4.19$, $p < .05$. No other effects were reliable, $F_s < 1.75$, $p_s > .19$. In order to consider whether, as predicted (hypothesis 2a), amount of information sought resulted in increased perceptions of prejudice we conducted correlational analyses between these variables. We found reliable correlations between information search and perceptions of prejudice, $r = .19$, $n = 161$, $p < .05$. These correlations were also significant when we entered information search as a continuous variable, $r = .21$, $n = 161$, $p < .01$ indicating that, conform hypothesis 2a, information search is positively related to perceptions of discrimination.

Well-being

In order to examine the prediction that evidence of gender discrimination relates to well-being (hypothesis 2b), we conducted correlational analyses between perceptions of prejudice and individual and collective well-being. We found that perceptions of prejudice were related to more negative affect, $r = .32$, $n = 161$, $p < .001$, and lower levels of public collective self esteem, $r = -.50$, $n = 161$, $p < .001$, as predicted. Overall, we found reliable correlations between the public collective self esteem scale and negative affect, $r = -.47$, $n = 161$, $p < .01$, indicating that depressed group based self esteem generally relates to negative affective responses. This is in line with our reasoning, and consistent with previous research (Schmitt et al. 2003), showing that in situations where discrimination seems pervasive individual and group level well-being align.

Affect Analyses of negative affect revealed a significant Outcome X Self-relevance interaction, $F(1, 153) = 4.76$, $p = .03$, $\eta^2 = .03$ (see Table 1). No other effects were reliable, $F_s < 3.08$, $p_s > .08$, $\eta^2 < .02$. Simple effect analyses revealed that participants for whom personal outcomes were self-relevant reported more negative affect after they were rejected than after they were accepted, $F(1, 157) = 7.35$, $p < .01$. There was no difference in affect under low self-relevance, $F(1, 157) = .72$, ns. This is consistent with a personal interest explanation (hypothesis 3a) and inconsistent with the empathy explanation (hypothesis 3b).

Collective self esteem Public and private collective self esteem were included as the repeated measures (scale) in a mixed model MANOVA. We found a reliable Self-relevance X Outcome effect, $F(1, 153) = 10.61, p < .001, \eta^2 = .07$, which was qualified by a Scale X Self-relevance X Outcome interaction, $F(1, 153) = 6.87, p < .01, \eta^2 = .04$. No other effects were reliable, $F_s < 2.55, p_s > .1, \eta^2 < .02$ (see Table 1). Univariate analyses on the separate private and public self esteem scales revealed a reliable Self-relevance by Outcome interaction only for public collective self esteem, $F(1, 153) = 8.83, p < .01, \eta^2 = .06$. This effect was not reliable for private collective self esteem, $F(1, 153) = 1.07, p = .3, \eta^2 = .01$. Simple effects analyses for public collective self esteem revealed that under high self-relevance, participants experienced lower public collective self esteem when they were personally rejected rather than accepted, $F(1, 157) = 23.53, p < .001$. There was no difference in public collective self esteem for outcome in the low self-relevance condition, $F(1, 157) = .92, ns$. Again, this is consistent with the personal interest explanation (hypothesis 3a), rather than the empathy explanation (hypothesis 3b).

Discussion

The results of Study 1 provide support for our prediction that women are more likely to search for information concerning their situation when this is highly self-relevant to them. Admittedly our measure of information search was not ideal, as we only had limited variance on this measure (this is addressed in Study 2). Nevertheless the results on this measure were not only convergent with our predictions, but also with a five item continuous measure of participant's self-reported wish to search for information (indicated before information was sought). In sum, and consistent with prior research conducted in a different area

(e.g., Dunning 1995), participants in the high self-relevance condition both indicated a greater need to search for information, and did indeed search for more information in the information matrix than participants in the low self-relevance condition, as predicted in hypothesis 1. As in previous research (Dunning 1995), we found no effect of outcome on information search. In addition, the present study provided no evidence that the content of the feedback (negative vs. positive) or its relationship to outcome (selection vs. rejection) had an effect on need to search for information or on information search. This indicates that also in this context, higher self-relevance instigates information search irrespective of the personal treatment received.

Considering the effects of searching for information that contains evidence of gender discrimination on actual perceptions of prejudice of the evaluator, we observed that overall information search was related to higher levels of perceived discrimination, as predicted in hypothesis 2a. The correlations between information search and individual and group level well-being provide support for our hypothesis 2b, that searching for information that makes targets perceive the disadvantage of fellow group members results in more negative affect and lowers collective self esteem. In other words, these results indicate that even targets who are extremely focused on themselves and their personal outcomes (i.e., under high self-relevance) are nevertheless able to collect and process information that is related to their gender group membership and conclude that personal treatment is related to their gender group membership.

Indeed, this knowledge about group level discriminatory treatment also had the predicted negative effect on both individual (i.e., affect) and group level (i.e., collective self esteem) indicators of well-being when women personally suffered rejection and had sought a lot of evidence of discrimination (i.e., under high self-relevance). The more evidence of gender discrimination our participants viewed,

Table 1 Negative affect and public collective self esteem (SD) as a function of self-relevance (high/low) and outcome (selection /rejection) in Study 1.

	Self-relevance			
	Low		High	
	Selection	Rejection	Selection	Rejection
Negative affect	2.31 (1.02) ^a	2.23 (.92) ^{ab*}	2.04 (.86) ^a	2.61 (.91) ^{b*}
Collective self esteem (public)	5.39 (.69) ^b	5.30 (.80) ^b	5.58 (.63) ^b	4.89 (.72) ^a

Cells in the same row that do not share the same superscript reliably differ from each other at $p < .05$

Scale endpoints ranged from 1 to 7, with higher scores indicating more negative affect and higher collective self esteem

* $p < .07$

the lower their levels of individual and collective well-being. In line with research by Branscombe and colleagues (Branscombe et al. 1999; Schmitt et al. 2003) our results indicate that experiencing self-relevant personal failure that is consistent with group based discriminatory treatment has negative consequences for personal well-being and undermines group based (i.e., public) self esteem. Our results extend previous findings in that they inform us further about the processes underlying responses to pervasive discrimination. We see that women only suffer from the disadvantage of their group when this disadvantage also affects them personally (i.e., in the case of personal failure). Therefore, we have reason to believe that how targets respond to group disadvantage is in part determined by self interest rather than relying on empathy or concern about the group in general (see also Stroebe et al. 2009b).

Overall the present study provides initial evidence for our main argument. The conditions that motivate women to search for information are related to perceptions of discrimination and have negative consequences for women's well-being when evidence of discrimination is viewed (and women have also been rejected). However, although the present study provides strong indications that not only rejection that is highly self-relevant, but also the amount of evidence of gender discrimination viewed influenced well-being, its focus lay on motivators of information search. This meant that we could not consider the effects of information search, and evidence of discrimination viewed, entirely separately from motivational influences of the manipulations on women's well-being. We address this by directly manipulating information search in Study 2.

Study 2

In Study 2 we focus on information search and well-being responses in situations of personal failure that can or cannot be attributed to gender discrimination. Whereas in Study 1 information search was motivated by self-relevance, in Study 2 participants are simply encouraged (or not) to examine the available information. This procedure allows us to consider whether the negative consequences of information search we found for women's well-being in Study 1 were indeed due to an increase in information processing that reveals strong evidence of discrimination rather than being instigated by the self-relevance (and stronger negative implications) of personal failure. Furthermore, by manipulating whether or not the information viewed provides evidence of gender discrimination (Evidence of Discrimination: present vs. absent) we can further examine whether the negative consequences of information

search for well-being are due to viewing more information containing indications of discrimination (as we argue), or are the result of spending more time thinking about a situation of rejection. Arguably, our finding that women only report more negative perceptions of their group membership and experience more negative personal level well-being in the case of self-relevant personal failure may be due to the fact that dissatisfaction about receiving a self-relevant personal outcome not only induces lower levels of personal well-being but also spreads to perceptions with respect to one's group membership and therefore one's group level well-being. The present manipulation allows us to rule out this alternative explanation.

Furthermore, this study allows us to consider in more detail the relation between information search and perceptions of prejudice. By adding a situation in which participants receive a negative personal outcome but find information containing no evidence of discrimination, we are able to assess whether, as Study 1 suggests, information search is only related to perceptions of prejudice when situations provide actual evidence of discrimination. From a self-protective perspective (Crocker and Major 1989) one might argue that reporting discrimination can be attractive even when there is no evidence thereof in order to avert self blame for personal failure. Thus, this study also provides a more direct test of the possible self-protective function of perceived discrimination for personal well-being. To the extent that attributions to discrimination may be self-protective, women might experience higher levels of well-being when they have indications that personal failure can be attributed to discrimination. However, on the basis of research by Branscombe and colleagues (Branscombe et al. 1999; Schmitt et al. 2003) on pervasiveness of discrimination as well as our findings in Study 1, we predict that the confrontation with strong evidence of discriminatory treatment will have negative consequences for women's individual and group level well-being.

In the present study we also focus on negative emotions that might be specifically related to experiencing discrimination such as threat and despair. Prior research has shown that being a target of discrimination is related to the experience of threat (Kaiser et al. 2004; McCoy and Major 2003). Whereas threat can be regarded as an immediate reaction to a situation affecting one's social identity, Schmitt and Branscombe (2002b) have pointed out that the experience of discrimination may also lead to a realization that one is likely to encounter discrimination again in the future. One emotion that is linked to awareness of long term adverse consequences of discrimination is *despair*. Previous research (Van Overwalle et al. 1995) revealed that despair is reported when making stable attributions to failure, or due to long term regret of inaction (Gilovich et al. 1998). Similarly, the experience of

discrimination can induce feelings of long term loss of control and raise despair.

In sum, our hypotheses for Study 2 were as follows:

4. Information search will only be related to perceptions of discrimination in the discrimination present condition (when individuals view evidence of discrimination).
5. Based on the assumption that awareness of pervasive discrimination is harmful for well-being, we predict an information search by evidence of discrimination interaction on individual (threat, despair) and group (collective self esteem) levels of well-being. We expect individuals to experience lower levels of individual and group well-being when they have sought a lot of information and evidence of discrimination is present rather than absent. When individuals search for little information, presence vs. absence of discrimination should not affect well-being.

Method

Design and Participants

One hundred and six female students of Leiden University took part in the experiment for course credits or payment of 6 € (US\$=7.70). Participants were randomly assigned to a 2 (Information Search: high/low) X 2 (Evidence of Discrimination: present/absent) between participants factorial design, in the sequence they entered the lab.

Procedure

The procedure in Study 2 was almost identical to that of Study 1 except that we did not make use of a confederate but told participants we were interested in researching selection procedures via internet and that they would take part in an on-line selection procedure conducted by a male evaluator of the same company (F.). After the introduction to the study participants supposedly completed an on-line selection procedure, and participants were told the computer had calculated their score on the questionnaire. All participants received a score of 60. After having waited some time and answered a number of filler questions participants read that the selector had made his decision and had not found them suitable as an employee of the company.

Manipulation of information search In contrast to the first study where participants could indicate whether or not they wanted to view extra information about the selection procedure, all participants in Study 2 saw the information matrix. However, all the relevant information on the matrix was covered, and had to be clicked to become visible. Therefore, participants could search more or less thoroughly for information about prior applicants in the selection

procedure. In the *low search* condition participants were told they could use the matrix to collect information about other applicants if they felt the need to do so, but that this was not necessary for the rest of the study. In the *high search* condition, participants were informed that it was important to thoroughly examine the information about other applicants in the matrix, and that they might need this information later on in the study. In both conditions it was emphasized that participants were free to decide how many of the other applicants they examined in the matrix.

The information matrix and discrimination manipulation

Participants were then given the opportunity to search for information in the matrix containing data about ten male and ten female names. To increase the variance on this measure, information search was made more difficult than in Study 1 as participants viewed more applicants (twenty instead of sixteen) and had to open four follow up screens (instead of only 1) to collect all the relevant information for each applicant they selected. Only then was return to the main screen possible to view the following applicant. Per applicant, the first screen gave the selection questionnaire score of the applicant, the second his/her age, the third study major and the fourth indicated whether the applicant had been rejected or selected. Upon return to the main screen, participants received a brief summary of the available information about the viewed applicant, consisting of the questionnaire score and the selection decision. The already viewed information remained visible on the main screen while participants continued their information search.

In the *discrimination present* condition the information matrix revealed that all female applicants were rejected despite higher scores on the selection questionnaire (ranging from 61 to 78, $M=70$) whereas eight out of ten male applicants were selected despite lower scores on the same questionnaire (ranging from 41 to 58, $M=50$). Therefore, as in Study 1, this information provided strong evidence that the male evaluator was discriminating against female and in favour of male applicants. In the *discrimination absent* condition, an equal number of male and female applicants were selected. According to the information provided, participants who were selected had a higher score (ranging from 61 to 78, $M=71$) than rejected participants (ranging from 41 to 68, $M=52$). Therefore, this condition provided indications of a fair selection procedure based on qualifications (i.e., score), implying personal failure rather than group membership as the main cause for rejection.

Dependent Measures

Manipulation checks To determine whether participants had correctly comprehended the information search manip-

ulation, participants completed one item immediately after the manipulation of information search (“I expect to be asked questions about what I have read about the other applicants in the procedure”). Scale endpoints for these and other measures described below were 1 (strongly disagree) and 7 (strongly agree). As a behavioral check of actual information search the number of cells participants clicked to reveal information about other participants was computed. This was assessed after both manipulations had been introduced. Endpoints were 0 (=none) and 20 (=all) whereby higher values indicate that more information has been sought. We also measured the amount of time (in seconds) spent examining the information matrix.

Perceived discrimination Because all individuals who had information about prejudice *also* were personally rejected, in the present study we administered a combined four item measure consisting of evaluations of the evaluator’s prejudice and attributions of the personal outcome to discrimination adapted from Major and colleagues (2003a) (see Appendix). These items were averaged to form a single composite scale in which higher values indicated more perceived discrimination ($\alpha=.64$)

Affect Despair was measured with one item taken from Van Overwalle et al.’s measure (1995) of despair (desperate). Threat was measured with three items adapted from Bizman (worried, threatened, uneasy, $\alpha=.73$) that were averaged to form a composite scale in which higher values indicated more experienced threat.

Collective self esteem The same private ($\alpha=.82$) and public ($\alpha=.70$) collective self esteem subscales of Luhtanen and Crocker’s CSE scale (1992) were used as in Study 1.

Results

Unless otherwise stated, data were analyzed using a 2 (Information Search: high/low) X 2 (Discrimination: present/absent) between participants Analysis of Variance (ANOVA).

Descriptive Analyses

We first conducted a 2 (Information Search: high/low) X 2 (Discrimination: present/absent) between participants multivariate analysis of variance with age and year of study as covariates in order to consider whether these variables differed between conditions. Analyses revealed that we did not need to control for these variables as there were no differences between conditions for age, $F(7, 94) = .67$, *ns*, or study year, $F(7, 94) = .57$, *ns*. We found a multivariate

significant main effect of information search, $F(7, 94) = 2.44$, $p<.05$, $\eta^2=.15$, and an information search by prejudice interaction, $F(7, 94) = 2.10$, $p<.05$, $\eta^2=.14$. The multivariate main effect of discrimination was not significant, $F(7, 94) = 1.22$, *ns*. Univariate analyses of these effects were conducted (see below), to examine evidence for specific predictions.

Manipulation Checks

Analyses of participants’ comprehension of the manipulation of information search revealed a main effect of information search, $F(1,102) = 14.16$, $p<.001$, $\eta^2=.12$. Discrimination had not been manipulated at this point and therefore was not included in this analysis. As expected, participants in the high information search condition ($M=4.14$, $SD=1.78$) thought it was more important for them to study the information than participants in the low information search condition ($M=2.93$, $SD=1.56$). Furthermore, the behavioral measure of information search (matrix clicks) revealed that participants in the high information search condition ($M=11.57$, $SD=6.00$) indeed searched for more information than in the low information search condition ($M=9.18$, $SD=6.24$), $F(1, 102) = 4.09$, $p=.05$, $\eta^2=.04$. Since this was assessed after both manipulations were in place, the effect of both manipulations was examined, but no other effects were reliable, $F_s<.98$, $p_s>.32$, $\eta^2<.01$. The measure of time spent examining the matrix revealed the same pattern, such that participants in the high information search condition ($M=128.68$, $SD=62.49$) spent more time examining the matrix than those in the low information search condition ($M=100.40$, $SD=60.53$), $F(1, 102) = 5.73$, $p=.02$, $\eta^2=.05$. No other main or interaction effects were reliable, $F_s<1.04$, $p_s>.31$, $\eta^2<.01$. Therefore the manipulation of information search was successful.

Perceived Discrimination

Analyses of the perceived discrimination scale revealed a main effect of discrimination on perceived discrimination, $F(1, 102) = 7.46$, $p<.01$, $\eta^2=.07$. Participants perceived more discrimination in the discrimination present ($M=3.78$, $SD=1.01$) than absent ($M=3.30$, $SD=.80$) condition. No other effects were significant, $F_s<1.58$, $p_s>.21$, $\eta^2<.02$. In order to examine hypothesis 4, that information search is related to perceptions of discrimination but only when individuals have evidence of discrimination, we conducted correlational analyses within the discrimination present and absent condition separately. As predicted, actual information search (i.e., number of items clicked in the information matrix) was related to perceptions of discrimination in the discrimination present, $r=.28$, $n=51$, $p<.05$ but not in the discrimination absent condition, $r=.05$, $n=55$, $p=.55$.

Affect

Analyses of the threat scale revealed no reliable main effects, $F_s < .49$, $p_s > .49$, $\eta^2 > .01$, but the predicted Information Search X Discrimination interaction was marginally significant, $F(1, 102) = 3.76$, $p = .06$, $\eta^2 = .04$. Although simple effects were not reliable, $F_s < 1.91$, $p > .17$, the means were as predicted in hypothesis 5, such that in the high information search condition, participants tended to feel more threat in the discrimination present ($M = 2.36$, $SD = .92$) than discrimination absent ($M = 1.92$, $SD = .83$) condition, $F(1, 102) = 3.02$, $p = .09$. Means in the low information search condition did not differ $F(1, 102) = .59$, $p = .44$ ($M_{absent} = 2.25$, $SD_{absent} = 1.07$; $M_{present} = 2.01$, $SD_{present} = .70$).

Analyses of the despair measure revealed no reliable main effects, $F_s < .78$, $p_s > .38$, $\eta^2 < .01$, but the predicted Information Search X Discrimination interaction was significant, $F(1, 102) = 7.36$, $p < .01$, $\eta^2 = .07$. As predicted in hypothesis 5 (see Table 2), participants in the high information search condition felt more despair when discrimination was present rather than absent, $F(1, 102) = 6.24$, $p = .01$. In the low information search condition there was no difference between the discrimination present and absent conditions, $F(1, 102) = 1.73$, ns.

Collective Self Esteem

Public and private collective self esteem were included as the within participants variable (subscale) in a mixed model MANOVA. No between participants effects of the experimental manipulations were reliable, $F_s < 1.69$, $p_s > .20$, $\eta^2 < .02$. There was a reliable interaction between Need to Search for Information, Discrimination and subscale. When considering public and private collective self esteem at the univariate level, we found no reliable effects for the public collective self esteem scale, $F_s < 1.27$, $p_s > .26$, $\eta^2 < .01$. Analyses of the private collective self esteem scale revealed the expected Information Search X Discrimination interac-

tion, $F(1, 102) = 5.67$, $p = .02$, $\eta^2 = .05$. As predicted in hypothesis 5 (see Table 2), simple effects analyses showed that participants in the high information search condition experienced lower private collective self esteem when discrimination was present rather than absent, $F(1, 102) = 5.22$, $p = .02$. In the low information search condition there was no difference between the discrimination conditions, $F(1, 102) = 1.12$, ns.

As we did in Study 1, we also checked whether individual (threat and despair) and group level (private collective self esteem) well-being were related to each other. Correlational analyses revealed reliable correlations between private collective self esteem and both threat, $r = -.44$, $n = 106$, $p < .001$, and despair, $r = -.40$, $n = 106$, $p < .01$. This further supports our reasoning that under conditions indicating pervasive discrimination the extent to which persons view and internalize evidence that the group is discriminated is related to personal level feelings of threat and despair, rather than being self-protective.

Discussion

Study 2 provides further evidence that viewing strong evidence of gender discrimination in the face of personal failure is harmful rather than self-protective of well-being. Complementing Study 1 we found that searching for more information containing evidence of discrimination was related to higher levels of reported discrimination. But this was only the case when information actually contained evidence of discrimination (see also Major et al. 2003b). Therefore the present study provides even stronger evidence for the proposed link between information search and perceptions of discrimination by indicating that information search results in an 'objective' assessment of the status quo—people only report discrimination when they actually have evidence thereof.

How does this evidence of discrimination affect targets' well-being? Importantly, lower levels of private collective self

Table 2 Despair and private collective self esteem (SD) as a function of information search (low/high) and discrimination (absent/present) in Study 2.

Discrimination	Information Search			
	Low		High	
	Absent	Present	Absent	Present
Despair	3.34 (1.34) ^b	2.85 (1.49) ^{ab}	2.54 (1.39) ^a	3.52 (1.39) ^b
Collective self esteem (private)	6.19 (.70) ^b	6.38 (.52) ^{ab}	6.62 (.43) ^a	6.22 (.76) ^b

Means in the same row that do not share subscripts reliably differ from each other at $p < .05$

Scale endpoints ranged from 1 to 7, with higher scores indicating more despair and higher collective self esteem

esteem were related to increases in threat and despair, indicating that women's well-being responses, as in Study 1, were influenced by feelings with regard to their group membership. Considering overall means, we found no effect of information content on well-being when information search was low, rather, as expected, this effect emerged when women engaged more deeply in information search: Women who processed more information that revealed evidence of gender discrimination had lower collective self esteem and experienced more despair and (marginally) more threat. Therefore the alternative explanation that suffering from personal failure in itself may induce lower levels of well-being was not supported. Furthermore, affective responses do not seem to be simply a function of spending more time thinking about the negative outcome, as they are the result of both engagement in information search and of whether or not the information revealed discriminatory treatment.

Although we found the predicted patterns for threat, despair and private collective self esteem, we do not find effects on public collective self esteem. This is to some extent surprising given the results of Study 1. We cannot provide a conclusive explanation for these differences but it is important to realize that participants were placed in quite different situations in Studies 1 and 2. In Study 1 women either contrasted (i.e., success) or assimilated (i.e., failure) their personal outcomes with the disadvantage of their group. This likely provided a stronger contrast concerning women's personal outcomes versus concerns about how others view their group (public collective self esteem). The fact that in Study 2 all participants experienced personal failure while we varied the extent to which this failure could be attributed to their group membership may explain why here women were more focused on their connection to the group (i.e., private collective self esteem). In any case, it is important that in Study 2 collective well-being effects were observed on a measure (private collective self esteem) indicating the internalization group disadvantage, rather than simply reflecting an awareness that others devalue the group. This is relevant to our reasoning that individual and group level well-being align when group level outcomes are seen to have implications for the self.

In sum, the present study provides support for the idea that as women search for and see increasing evidence of the disadvantage of their group this has negative consequences for their well-being both at the individual and the group level.

General Discussion

The present research provides the first evidence for the link between information processing, perceptions of prejudice and well-being. It addresses the question of how women come to realize they are victims of gender discrimination in

situations in which they are likely to be focused on individual level aspects such as personal competence or individual ability. Furthermore, we studied how viewing evidence of group disadvantage that shifts the focus to one's gender group membership and possible devaluation on the basis of this group membership influences both group and individual level well-being.

In the present research we focused on situations of personal success or failure in which women had no prior cues to gender discrimination and needed to actively search for information about their personal outcomes in order to perceive the disadvantaged position of their group. Our research shows that women are motivated to search for information in the face of both personal failure and success: They sought more information when personal outcomes were self-relevant. These results were conform our hypotheses based on prior research in the area of self-evaluation (Dunning 1995) and information processing (e.g., Petty and Cacioppo 1979; Eagly and Chaiken 1993). Also, when information revealed evidence of discrimination, information search was related to perceptions of prejudice of the evaluator. This was not the case when information search did not provide indications of discrimination. The present studies therefore make clear that women are able to shift from being focused on individual level aspects of a situation to realizing the prejudice of another against their gender group: Even women who were arguably very focused on individual level aspects of the situation because their personal outcomes were self-relevant as well as women who were not personally discriminated against (those who experienced personal success, Study 1) reported perceiving that the person evaluating them was prejudiced against their gender group. Furthermore, the fact that targets only reported prejudice when information provided evidence for this conclusion reveals that perceptions of prejudice are evidence based. It has been noted that targets of discrimination may have the tendency to over-report personal discrimination (Feldman Barrett & Swim 1998; Sechrist et al. 2004). Popular opinion is that targets of discrimination often use discrimination as a good excuse for personal failure. Our research provides no evidence for this idea, on the contrary.

The present work also provides additional theoretical insights on the relation between information processing and perceptions of gender discrimination. In extension of prior work on the presentation of information (e.g., Crosby et al. 1986), we have demonstrated that individual level emotional investment (due to self-relevance) may impact the extent to which women want to search for evidence about themselves and therefore affects the likelihood that they will recognize gender discrimination when it is present. Furthermore, our work extends previous research in that it also considers the consequences of searching for evidence

of discrimination for women's well-being. Prior research has suggested that attributing personal failure to discrimination can be self-protective to the extent that negative outcomes can be ascribed to the prejudice of another, rather than to (lack of) ability of the self (Crocker et al. 1991; Major et al. 2003a). The present research is more in line with prior work on pervasive discrimination: It documents that when women who are personally affected by gender discrimination also view evidence of discrimination against fellow gender group members, this has negative consequences for their personal well-being as well as feelings with regard to their group membership.

Although prior research has provided evidence that the extent to which discrimination is pervasive increases the extent to which individuals suffer from discrimination (e.g., Schmitt et al. 2002, 2003) the question of *why* pervasive discrimination has these negative consequences for well-being was still unresolved. We addressed this issue by examining support for two possible explanations of these findings. That is, we varied the degree to which group disadvantage affected individual outcomes, to explicitly test whether individuals suffer more from pervasive discrimination because their group is central to themselves and they feel concern with respect to other group members (empathy explanation), or because pervasive discrimination has negative consequences for personal outcomes (personal interest explanation). Our results consistently revealed more support for the personal interest explanation, in that women seemed to suffer most from group disadvantage when it also had negative consequences for personal outcomes (personal interest explanation). That is, women experienced lower levels of personal *and* group level well-being when they had more evidence of group disadvantage and experienced personal failure—not in the case of personal success (Study 1). Furthermore, group level well-being was only lower when women experienced personal failure *in the face of* group disadvantage (i.e., not when information provided no indications of disadvantage) (Study 2). Thus, while viewing evidence of discrimination does not have the self-protective properties observed in studies where group disadvantage seemed more incidental (e.g., Major et al. 2003a), we do find that responses to discrimination are primarily motivated by personal needs and outcomes rather than being driven by the fate of the group. That is, when the disadvantage of the group is pervasive, women seem to suffer from evidence of gender discrimination largely because this has negative implications for themselves, and potentially for their future outcomes.

Although our findings provide little evidence for the self-protective properties of being able to make attributions to discrimination, it is important to view the present results in the correct context. Studies that have provided support for self-protection have generally focused on evaluation

settings in which there is no explicit evidence that emphasizes that discrimination would be pervasive. We believe that when evidence of group disadvantage is very strong, this may outweigh the self-protective potential of attributing failure to discrimination—because individuals become aware of the negative consequences of discrimination for themselves in the future. In other words, in studying when discrimination is harmful versus self-protective it may be important to focus on the relative balance of threats at an individual versus group level (see also McCoy and Major 2003). Determining the relative strengths of these threats can inform us when and whether attributions to discrimination are likely to be self-protective or harmful.

One might expect that overall means for perceptions of the prejudice of the evaluator should differ across conditions that induce high versus low information search (i.e., high versus low self-relevance, high versus low information search). Across both studies this is not what we found. Yet we did find evidence that information search is related to perceptions of the prejudice of the evaluator. A possible reason for correlations but not overall mean differences between conditions may be that a division into low and high information search means that some people in the low information search condition may nevertheless have sought quite some information (be it less than those in the high search condition). This information search may have been enough to draw conclusions concerning the prejudice of the evaluator, while only influencing levels of well-being when evidence of discrimination, and its pervasiveness, became more substantial.

At a methodological level, one of the limitations of our study is that we had low scale reliability for private collective self-esteem in Study 1, but not Study 2. Considering a comparable study (i.e., measure of private CSE after personal gender discrimination) by Schmitt et al. (2003) reveals similar variations in Cronbach's alpha in response to gender CSE ($\alpha=.78$ in Study 1, $\alpha=.66$ in Study 2). This makes it less likely that the low reliability observed in Study 1 should be ascribed to cultural differences or scale translations. Such variations on scale reliabilities seem to occur less when measuring private collective self-esteem with respect to ethnicity (i.e., Branscombe et al. 1999). Although this warrants more research, it may indicate that gender collective self-esteem is more difficult to capture than ethnic collective self-esteem.

Another possible limitation to the present research might be that these studies were conducted with female university students in the Netherlands. Can these young women be considered representative for how women in general, and in other countries respond to discrimination? Although the Netherlands is considered a tolerant country, women are still underprivileged in areas of work, career and income, as

is the case in other countries (Merens and Hermans 2008; Ellemers et al. 2004; Van Steenbergen et al. 2007). When considering the relation between perceiving personal discrimination and well-being responses, we see similar patterns across US (e.g., Major et al. 2003a; Schmitt et al. 2002, 2003) and European samples (e.g., Netherlands: Barreto and Ellemers 2005a; Stroebe et al. 2009a; Belgium: Bourguignon et al. 2006; Germany: Hansen and Sassenberg 2006). Yet it is difficult to establish the influence of age on responses to discrimination as the majority of studies in this area are conducted with young university students. One might argue, however, that the students in our sample may have little experience with gender discrimination, which presents a conservative test of our idea that targets suffer from pervasive discrimination. It would be interesting in future research to consider these processes in (older) working women outside the laboratory.

Practical Implications

Our research also has important practical implications, as it allows us to predict when women will make an effort to discover discrimination in everyday life, and how they will feel as a result. As discrimination has become more subtle and implicit, it is important to study when women are motivated to search for information about themselves and others in a manner that enables them to conclude that personal treatment can be attributed to a systematic pattern of group discrimination. Yet it is also crucial to understand what effect this has on well-being. Whereas the women in our study did engage in information search, they suffered from doing this. Thus, one can question whether the tendency to search for information that might reveal discrimination would not decrease over time, as women become increasingly aware of the psychological costs of doing this. The present results may inform us of ways to support women in discriminatory settings. One way of helping women to cope with the painful consequences of discovering discrimination may be to stress the long term benefits of revealing unjust treatment, as paradoxically, this is the only way in which future well-being can be increased.

To conclude, our research illustrates that, even in contexts in which women are very focused on individual level aspects of a situation and there is no direct reference to gender, women can become aware of gender discrimination. We show that women can be motivated to search for information even when this search may be hurtful, such as in situations that are highly self-relevant. Our research stresses the importance of considering the interplay between aspects relevant to the individual and the group in studying well-being responses to subtle discrimination.

Appendix: Items Used to Assess Need to Search for Information (Study 1), and Perceived Prejudice (Study 1 and 2): Dutch Original with [English] Translation

Need to search for information (Study 1)

1. ik wil graag zien hoe ik het heb gedaan [I would like to see how I have done]
2. ik wil graag meer inzicht krijgen in mijn prestaties bij deze procedure [I would like to gain more insight into my achievements in this procedure]
3. ik wil graag meer weten over de selectieprocedure [I would like to know more about this selection procedure]
4. ik wil graag met Hans Brockens over de uitslag praten [I would like to talk to Hans Brockens about the outcome of this procedure]
5. ik wil graag de redenen voor deze uitslag weten [I would like to know the reasons for this outcome]

Perceived prejudice/discrimination

1. (Study 1 and 2): Hans Brockens lijkt me bevooroordeeld [Hans Brockens seems prejudiced]
2. (Study 1 and 2): Hans Brockens lijkt me discriminerend [Hans Brockens seems discriminatory]
3. (Study 2): In hoeverre denkt u dat uw uitslag van de procedure (aangenomen/afgewezen) het gevolg is van een bevooroordeelde selecteur? [To what extent do you think your outcome (accepted/rejected) in this procedure was due to a prejudiced interviewer?]
4. (Study 2): In hoeverre denkt u dat uw uitslag van de procedure (aangenomen/afgewezen) te maken heeft met Hans Brockens's houding ten aanzien van mannen en vrouwen? [To what extent do you think your outcome (accepted/rejected) in this procedure was due to Hans Brockens's attitude toward men and women?]

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