When Being Different Is Detrimental: Solo Status and the Performance of Women and Racial Minorities

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Individuals experience solo status when they are the only members of their social category (e.g., gender or race) present in an otherwise homogenous group. Field studies and surveys indicate that members of socially disadvantaged groups, such as women and racial minorities, have more negative experiences as solos than do members of privileged groups, such as Whites and males (Kanter, 1977; Niemann & Dovidio, 1998). In this article, we review research showing that the public performance of women and African-Americans is more debilitated by solo status than that of Whites and males. We also show that this effect is exacerbated when negative stereotypes about the performer's social group seem relevant to their performance, and we discuss the contributing roles of lowered performance expectancies and feelings of group representativeness. We discuss how findings from social psychological research can be applied towards the goal of reducing the decrements typically associated with being the only member, or one of few members, of one's race and/or gender in the environment.

Diversification efforts have resulted in increasing representation of women and racial minorities in higher education and upper-level positions that have traditionally been dominated by White males (e.g., Eccles, 1987; Farley, 1984; Freeman, 1978). Yet several studies have indicated that members of socially

disadvantaged or low-status groups (e.g., women and racial minorities) experience difficulty when working in the context of socially privileged or high-status groups (e.g., White males) (Morrison & von Glinow, 1990). For example, racial minority students have lower GPAs and higher attrition rates than majority-group students, particularly in interracial contexts (Nettles, 1988). Similarly, women underperform in comparison to men in math, science, and other domains in which women are underrepresented (American Council on Education 1995–1996; Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, & York, 1966; Guinier, Fine, & Balin, 1997; Miller, 1995). Observations in the workplace mirror these findings. As the ratio of women to men, or racial minorities to Whites, increases, women and racial minorities receive lower evaluations and are less likely to be promoted than White males (Sackett, DuBois, & Noe, 1991). Such individuals also perceive their social category distinctiveness negatively. For example, in one survey of racial-minority professors, respondents agreed with statements such as "The activities of minority faculty are monitored more closely than are those of White faculty" and "At work, I feel like I'm in a glass house." They also reported feeling unsatisfied with their jobs. These perceptions were significantly greater when the respondents also reported that they were the *only* members of their racial group in their department (Niemann & Dovidio, 1998).

We suggest in this article that the situations in which members of disadvantaged groups learn and work may themselves play a large role in group differences in performance, even when other factors that influence the performance of such individuals (e.g., discrimination, inadequate training) are controlled. When individuals enter settings in which members of their race or gender are not well represented, they can find themselves to be one of very few or the sole representative of their social group. Such individuals are said to experience *solo status*. Solos are persons who are the only member of their social category present in an otherwise homogenous group (Lord & Saenz, 1985; Saenz & Lord, 1989). For example, the only woman working in an all-male law firm would be considered a solo, as would the only African-American student in an all-White classroom. Unlike the term *token*, the term *solo* does not imply that a person has been preferentially selected for a position by virtue of his or her social category (e.g., gender or race). Instead, solo status describes the situation of any individual who finds himself or herself to be the only representative of his or her social category present.

Even so, to the extent that social and political contexts support White men as ideal workers and students in many fields, women and racial-minority solos may be perceived by others (and perhaps even themselves) as tokens, even when they were not selected for positions based on their gender or race (Craig & Feasel, 1998). As such, tokenism and solo status may be indistinguishable in many settings and may likely involve similar experiences. Consequently, the research described

in this article, although primarily focused on solo status, may apply to tokenism as well.[1]

   In the present article, we review research suggesting that although women and racial minorities are often treated negatively as solos, which can affect their performance, solo status negatively affects disadvantaged groups such as White women and African-Americans even in the absence of differential treatment. We then discuss the contributing role of negative stereotypes and identify processes by which disadvantaged groups are negatively affected by solo status. Finally, we discuss how findings from social psychological research can be applied towards the goal of reducing the decrements typically associated with being the only member, or one of few members, of one's race and/or gender in the environment.

Solo Status and Performance

   By definition, solos are distinctive; they stand out in the group. This distinctiveness draws attention to solos, and thus observers remember them better than nonsolos (Kanter, 1977). In laboratory studies, observers recalled comments made by solos during a group discussion better than those made by nonsolos, reflecting the increased attention paid to them (Lord & Saenz, 1985; Taylor, Fiske, Etcoff, & Ruderman, 1978). Being highly distinctive comes with a price, however, since being overly scrutinized can result in solos being judged more extremely and stereotyped in comparison to their nonsolo counterparts. For example, observers of a group discussion tended to perceive solo women in terms of stereotypically female roles (e.g., a secretary), while solo men were perceived in stereotypically male roles (e.g., a leader) (Taylor et al., 1978; see also Crocker & McGraw, 1984).

   Surveys and observations of work settings indicate that solo status is a negative experience for members of disadvantaged groups. For example, solo women in Kanter's (1977) study reported that they were stereotyped as being less adept in conducting business than men. Thus, these solo women would receive comments such as "You talk so fluently" after bringing up an important point at a meeting, whereas comments towards men were directed at the content of their input. Besides being stereotyped, members of disadvantaged groups working in White male-dominated environments report feeling isolated (Kanter, 1977; Yoder & Aniakudo, 1997), receiving low responsibility positions (Kanter, 1977) and being showcased

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   [1] Kanter (1977) defined token status in terms of numerical representation, i.e., when one's social category represents 15% or less of the total group. This definition seems primarily useful when considering token or solo status in large organizations, in which 15% of membership likely involves more than one member of a particular social group. However, minority-group individuals are likely to be solos when in smaller subgroups within the larger organization, even when they are not the sole member of their group in the organization. We suggest that solo-status research is applicable to token status, as defined by Kanter, in large organizations to the extent that tokens experience solo status in their subgroups.

as representatives of their group (Niemann & Dovidio, 1998). Racial-minority faculty report that they are often stereotyped as having interests only in minority affairs, such as Black History Month, and are therefore not informed about other opportunities that may interest them (Niemann & Dovidio, 1998). Because many avenues to raises and promotions are based on informal networks, solos may be left out of the loop, damaging their opportunities for advancement.

In contrast to disadvantaged-group members, members of high-status groups have high expectancies held for them when solos, and seem to benefit from solo status as a result. For example, White male nurses working in female-dominated environments reported having positive experiences and increased performance motivation as solos (Heikes, 1991), and solo male workers advance to management positions more quickly than nonsolo men (Ott, 1989; Yoder & Sinnett, 1985).

The difference in the way privileged and disadvantaged groups experience solo status may then contribute to performance differences between these groups. Interestingly, being in the minority takes its toll on the performance of disadvantaged-group members, even when they have the same or higher levels of education and training than their nonsolo majority-group co-workers (Sackett et al., 1991). This suggests that something in the situational context impedes the expression of knowledge and skills in performance for disadvantaged-group solos. As such, experiencing solo status may be particularly detrimental to women and racial minorities when they are called on to demonstrate their ability under the scrutiny of others.

Although it is clear that negative treatment of disadvantaged-group members can cause performance differences between men and women and between racial minorities and Whites, laboratory studies indicate that differential treatment is not the only avenue by which disadvantaged-group members come to underperform as solos. Laboratory studies of solo status have the advantage of being able to control the behavior of other group members such that solos are not treated differently from others. Consequently, researchers have been able to document the effect of solo status on performance while holding other environmental variables constant.

For example, in our laboratory, we developed an experimental procedure to eliminate the influence of differential treatment of solos (Sekaquaptewa & Thompson, in press a.; Sekaquaptewa & Thompson, in press b.). This procedure was based on one developed earlier by Lord and Saenz (1985), in which participants believed they were part of a group connected by a video communication system. Participants are placed in a cubicle presumably connected to other cubicles by a video communication system. The system purportedly allows group members located in separate cubicles to see and hear each other using interconnected video cameras, monitors, and headphones. In actuality, the participants are shown prerecorded videotapes of research confederates that they believe are broadcast live from other cubicles. In other words, participants in our study actually participate alone; solo and nonsolo conditions are created by showing videotaped footage of an

opposite-gender or same-gender (or other-race or same-race) audience. Any differences in performance, therefore, cannot be attributed to how participants are treated by their group members, thus helping to isolate the effect of solo status per se.

Using this system, we were able to empirically demonstrate that solo status is more detrimental for low-status groups than for high-status groups. In addition, in our initial studies we were able to manipulate solo status both while participants learned a set of information as well as when they were tested over it, to determine the critical point at which solo status influences performance outcomes. In two experiments, White men and women (Experiment 1) and African-American and White females (Experiment 2) experienced solo status in terms of either gender or race while either learning or performing (i.e., being tested) as a solo (Sekaquaptewa & Thompson, in press a.).

In the first experiment, White men and women learned and were tested on material designed to be irrelevant to gender stereotypes (the social behaviors of animals), in order to isolate the effect of solo status from the effect of negative stereotypic expectations (e.g., Spencer, Steele, & Quinn, 1999). Participants either learned the information as a solo, were tested on the information as a solo, or did not experience solo status at all. Specifically, participants were randomly assigned to one of three conditions: solo at the learning stage and nonsolo (in a same-gender group) at the performance stage; nonsolo at the learning stage and solo at the performance stage; or nonsolo at both the learning and performance stages (the nonsolo control group).[2] Results showed that compared to the nonsolo control group, being a solo at either learning or testing diminished performance. In addition, males and females performed similarly if they learned information as a solo but were tested as a nonsolo. However, when participants learned the information as a nonsolo but were tested as solos, women performed more poorly than men. Men who tested as solos performed as well as men in the nonsolo control group (see Table 1). In other words, solo status had an equal effect on men and women during learning and a differential effect during performance, with women being more negatively affected than men.

Experiment 2 extended this research to race solos. Using a similar methodology, African-American and White females learned information about animals by reading it to themselves, then experienced racial solo status during an oral examination. Results showed that African-American women were more negatively affected by solo status than White women. African-American women answered fewer questions correctly when in a group of all White women than with other African-American women, while White women's correct answers did not differ whether they tested as the only White woman in the group or not.

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[2] The solo, both at learning and at test condition, was not included in this study because we were primarily interested in the interaction between participant gender and timing of solo status (solo-learning or solo-test).

Table 1. Men's and women's performance scores as a function of solo status experienced during learning or testing, and in a nonsolo control group (from Sekaquaptewa & Thompson, in press a.)

Gender		Condition		
		Solo-Learning Nonsolo-Testing	Nonsolo-Learning Solo-Testing	Nonsolo-Learning Nonsolo-Testing
Male	mean	18.64$_{bcd}$	22.09$_{acf}$	23.95$_{a}$
	sd	8.00	5.92	3.73
Female	mean	19.01$_{bef}$	15.90$_{b}$	21.31$_{ade}$
	sd	3.57	4.41	7.70

Note: Means not sharing a common subscript differ at the .05 level.

The use of videotaped confederates instead of an actual audience, and stereotype-irrelevant test material, clearly demonstrates that performance can be debilitated in members of disadvantaged groups even when they are not treated more negatively by other group members, and even when the testing domain is not one in which they are specifically negatively stereotyped. Simply being different from others in the group was enough to cause underperformance in women and African-Americans. Furthermore, these studies show that solo status can affect members of disadvantaged and privileged groups differentially during public performances, that is, when asked to demonstrate one's knowledge or skills under the scrutiny of others. Many commonly used indicators of ability are public. Job talks, business and classroom presentations, and question-and-answer sessions all involve performance under scrutiny. Therefore, this work suggests that decision makers and evaluators of performance should consider how these valued indicators of ability are influenced by the situational factor of solo status for women and racial minorities.

These experiments also reveal another important discovery about solo status: it is most debilitating for solos performing in the context of others who are higher in social status. In the first study, White women were low status compared to White men. In the second study, White women were high status compared to African-American women. Only the performance of solos from groups lower in status than their audience (i.e., White women in Experiment 1 and African-American women in Experiment 2) was negatively affected when testing as a solo. Given current demographics, lower-status group members are more likely to be solos in high-status occupations offering the most social and economic mobility, such as executive and leadership positions (Catalyst, 2000; Center for the American Woman and Politics, 2001; Pettigrew & Martin, 1987). Consequently, members of low-status groups, in comparison to high-status groups, likely experience solo status in contexts where it will have the greatest impact on their social and economic welfare.

In order to alleviate the negative effect of solo status on women and racial minorities, it is important to determine when and why solo status leads to poor

performance. Answers to these questions could help employers and policy makers develop programs and policies to improve work and school environments for members of underrepresented groups. The following sections of this article describe a relatively small but growing body of research on variables associated with solo status, showing that the presence or absence of negative stereotypes changes the effect of solo status on performance, and identifying two psychological processes that may account for underperformance in low-status solos: lowered performance expectancies and feeling representative of one's social group.

The Role of Negative Stereotypes

Although our research (Sekaquaptewa & Thompson, in press a.) indicates that solo status can be detrimental for disadvantaged solos even in stereotype-irrelevant domains, it seems likely that solo status occurs most often when women and racial minorities enter occupations in which they are negatively stereotyped. For example, women who enter engineering may find that in addition to being the only woman in their classroom or workplace, they also encounter negative stereotypes about women's ability as engineers. The more that women and racial minorities make inroads into fields traditionally dominated by White males, the more likely they are to experience solo status in addition to the presence of negative stereotypes. Therefore, it is important to examine the influence of negative stereotypes on the performance of disadvantaged-group solos. Specifically, does being negatively stereotyped in the task domain exacerbate the effect of solo status on performance? Can removing the stereotype reduce the effect of solo status on performance?

When people perceive that their actions could be interpreted as confirming of a stereotype held about their group, they are said to experience stereotype threat (Aronson, Quinn, & Spencer, 1998; Spencer et al., 1999; Steele & Aronson, 1995; Steele, 1997). Underperformance due to the situation of stereotype threat has been observed in many experimental studies. For example, when a math test is described as a genuine assessment of one's ability in math, there is the potential for women to "confirm" their negative stereotype by giving a poor performance on the test. Several experiments have shown that women score lower than men do under these conditions, even when preparation (e.g., math SAT scores) is matched across gender (Spencer et al., 1999). Thus, women's apprehension about giving a poor performance can ironically produce that undesired outcome. Performance under stereotype threat can suffer, perhaps due to difficulty formulating effective cognitive strategies (Quinn & Spencer, 2001) or increased anxiety about the task (Spencer et al., 1999).

Most notable is the finding that test scores of negatively stereotyped group members may or may not differ from their nonstereotyped counterparts on the exact same test, depending on how the test is described. For example, when a math

test is described as a traditional math test that is diagnostic of one's math ability, women tend to score lower than men do. However, when the same test is described as nondiagnostic of ability, or free from gender bias, i.e., a test version on which women and men score equally well (Spencer et al., 1999), women's test scores do not differ from men's. This supports the idea that underperformance in members of stereotyped groups can be caused by the situation of stereotype threat, not inherent differences in ability between races or sexes.

Two lines of research have investigated whether stereotype threat influences the impact of solo status on performance (Inzlicht & Ben-Zeev, 2000; Sekaquaptewa & Thompson, in press b.), using two different types of performance outcomes. First, Inzlicht and Ben-Zeev (2000) tested this idea by giving female participants either a written math or a verbal skills test. Because women are negatively stereotyped in math but not in verbal skills, stereotype threat (math test) and no threat (verbal test) conditions were created. In addition, participants took the test either as the sole female in the testing session (solo condition) or in a mixed-gender group (nonsolo condition). Results showed that women's test scores were lower when they experienced solo status, but only when stereotype threat was present (math test). No difference in test scores was found between female solos and nonsolos when stereotype threat was not present (verbal test). The researchers concluded that solo status appeared to be a "necessary but not a sufficient condition for deficits in females' math performance" (p. 369).

This research can be contrasted with our findings that women and African-Americans underperformed as solos even when the testing domain was not one in which they were negatively stereotyped (Sekaquaptewa & Thompson, in press a.). However, as the authors (Inzlicht & Ben-Zeev, 2000) point out, the nature of the performance outcome in their research was private. Participants completed the written test when others were present in the room, which is certainly a more private performance than having to provide spoken answers under the direct scrutiny of an audience. Similar to the way in which solo status is more detrimental to women's performance when experienced during testing rather than learning, it may also have a more global influence on the public rather than private performances of women.

Following this reasoning, we (Sekaquaptewa & Thompson, in press b.) proposed that women giving a public rather than private performance would be negatively affected by solo status even in the absence of stereotype threat. Using an oral rather than a written format, White male and female participants gave a public test performance by answering math questions aloud in front of a group. In the "no threat" condition, participants were told that the math information was a special type of math material on which males and females perform equally. In the "stereotype threat" condition, participants were allowed to believe that the information reflected traditional math, and thus traditional gender stereotypes about math were still relevant (see Spencer et al., 1999). Crossed with the stereotype threat

Table 2. Performance score means and standard deviations showing the pattern of interaction between solo status, stereotype threat condition, and participant gender (from Sekaquaptewa & Thompson, in press b.)

	Gender				
	Women			Men	
	Condition				
	Solo	Nonsolo		Solo	Nonsolo
Stereotype Threat	13.05_a	14.71_b	Stereotype Threat	14.60_{ab}	14.49_{ab}
sd	2.70	2.59		3.13	3.39
No Threat	14.51_b	16.23_c	No Threat	14.32_{ab}	14.71_{ab}
sd	2.63	1.89		3.44	3.03

Note: Means not sharing a common subscript differ at the .05 level.

manipulation, participants tested on the information either as a solo or a nonsolo, using the video communication system procedure.

Both solo status and stereotype threat effects were found for women, but not men. Female solos performed more poorly than female nonsolos, and women in the "threat" condition performed more poorly than those in the "no threat" condition. Importantly, eliminating stereotype threat did not eliminate the effect of solo status on women's performance. Female solos performed more poorly than female nonsolos even in the "no threat" condition, (i.e., when stereotype threat was not present). Finally, an additive effect was noted, such that women were additively affected by the combined effects of solo status and stereotype threat (see Table 2). Men performed the same regardless of the solo status and stereotype threat manipulations. Thus, women's performance was highly influenced by the solo status and/or stereotype threat situations; in contrast, the performance of men was unchanged by either situation.

The research conducted in our laboratory and by Inzlicht and Ben-Zeev (2000) shows that the presence of negative stereotypes exacerbated the effect of solo status on women's public performance (Sekaquaptewa & Thompson, in press b.), but not their private performance (Inzlicht & Ben-Zeev, 2000). Thus, while removing stereotype threat can improve the private performance of solos, during public performances, simply removing stereotype threat alone is not enough to allow solos to perform at the same level as their nonsolo counterparts. We conclude from this research that the presence of negative stereotypes intensifies the effect of solo status on performance, and that public performances are more susceptible to this influence than private performances.

The Role of Lowered Performance Expectancies

In identifying the processes causing disadvantaged group members to underperform as solos, we may first note that disadvantaged-group members have

more negative reactions simply to the idea of solo status than do privileged-group members. In studies in which men and women expected to participate on a group task either as a solo or a nonsolo (Stangor, Carr, & Kiang, 1998; see also Cohen & Swim, 1995), women demonstrated more negative psychological responses to anticipated solo status in comparison to nonsolo women and men. For example, the belief that they would be stereotyped was negatively related to expected involvement in the group task for White females expecting solo status, whereas this relationship was positive for men, suggesting that women expected to be more negatively stereotyped as solos than men. In addition, women who believed they would perform a group task as solos endorsed the desire to add more women to the group, suggesting they were not comfortable with the idea of being solos (Cohen & Swim, 1995). In contrast, White men reacted positively to solo status, and indeed are often regarded as leaders under solo status (Crocker & McGraw, 1984).

Perhaps as a result of their more negative reactions, women expecting solo status develop low expectations about their upcoming performance, even when told they have high ability at the task, while men do not (Stangor et al., 1998). Because performance expectancies are strong predictors of actual performance (Carver, Blaney, & Scheier, 1979; Eccles, 1994; Lenney, 1977), it seems likely that the effect of solo status on disadvantaged-group members could be mediated, or caused by lowered performance expectancies.

Evidence supporting this hypothesis was provided in our study crossing solo status and stereotype threat described previously (Sekaquaptewa & Thompson, in press b.). Before being tested (but after learning they would be a solo or nonsolo and that gender stereotypes were relevant or irrelevant), participants were asked how well they expected they would do on the upcoming oral exam. Results showed that female solos did expect to perform more poorly than female nonsolos, while males' performance expectancies did not differ by solo and nonsolo status. Moreover, the effect of solo status on performance was partially mediated by the performance expectancies they developed prior to the test. Regression analyses showed that performance was predicted by the interaction between gender and solo status, but that this relationship became nonsignificant when performance expectancies were added to the model (see Baron & Kenny, 1986). This indicates that compared to men, women develop more negative expectations about how they will perform, and that these low expectancies significantly lower women's performance as solos compared to men. Interestingly, men's and women's performance expectancies did not differ by stereotype threat condition. In particular, women expected to perform similarly regardless of whether the testing domain was described as gender stereotypic, indicating that lowered performance expectancies do not account for the effect of stereotype threat on women's performance.

This set of research findings shows that members of groups that differ in social status have different reactions going into a solo status situation. Women react more negatively than men, and they develop lower expectancies than men about how

well they will perform in this context. Because performance expectancies are good predictors of actual performance, it appears that lowered performance expectancies are an important contributor to the detrimental effect of solo status on women's performance. Therefore, raising women's expectations about their performance as solos may serve to improve their actual performance.

The Role of Group Representativeness

In addition to altering one's expectations about an upcoming task, solo status can also increase awareness of one's social identifications, i.e., racial and gender group memberships. Research indicates that solos often feel as if they are seen as representatives of their entire group. For example, African-American students on a predominantly White campus reported on a survey that they frequently experienced solo status, felt as if they represented all African-Americans, and were responsible for helping other Blacks succeed. African-American students were also more likely than White students to report similar feelings when they were solos in testing groups (Pollak & Niemann, 1998). Therefore, it seems likely that low-status solos perform with the added pressure of feeling that their performance is generalizable to their group members, in other words, that it will reflect on how their racial or gender group is perceived by others.

In a preliminary test of this idea, we (Sekaquaptewa & Thompson, 2000) instructed a sample of African-American and White undergraduates (N = 222) to imagine that they were in racial solo status, i.e., in a group where everyone was the same gender and the same age as they were, but of a different race (African-American or White). They were told to imagine they would give an oral exam on biology in front of this group. Students then reported the concerns they believed they would have in that situation on a checklist of possible concerns, including feeling representative of one's group ("my performance will be seen as related to my race" and "if I fail, it will be seen as stereotypical of my race"). Results showed that when imagining themselves performing in racial solo status, African-Americans endorsed the group representativeness items significantly more than Whites did.

This feeling of representativeness may contribute to the negative effect of solo status by causing solos to adopt an overly cautious response style. Research shows that low-status groups engage in different communication styles when interacting with high-status groups (Kollock, Blumstein, Schwartz, 1985). Women tend to use more tentative language (e.g., weakening the strength of a statement by using phrases such as "sort of" or "maybe") when interacting with men (Carli, 1990; Lakoff, 1973). Solos may be even more careful about what they say and how it is said when they feel they are representing their race or gender in addition to themselves (Cioffi, 2000). For instance, they may say only what is necessary, without elaborating on answers, in order to provide less room for error. To address this idea, in our gender solo-status study described previously (Sekaquaptewa &

Thompson, in press b.), women's and men's performance was re-scored to avoid giving more credit for detailed answers. Analysis of this re-scored data showed that the previously significant interaction between gender and solo status was significantly reduced, indicating that the effect was partially accounted for by the length of answers they gave (Sekaquaptewa & Thompson, in press b.). This result also emerged in a similar reanalysis of African-American and White female solos' performance (Sekaquaptewa & Thompson, in press a., Experiment 2). Being less talkative or less willing to elaborate on one's answers may therefore prove to be a response style that is instigated by feeling like a group representative, and may be partially responsible for producing differential performances in high- and low-status-group solos.

In sum, the growing body of research on solo status has demonstrated that being different is detrimental to the performance of women and racial minorities, while men and Whites are less affected. These findings can contribute to our understanding of disparities in representation and evaluation of women and racial minorities, and to differences in performance outcomes between disadvantaged and privileged groups. In particular, these studies indicate that members of disadvantaged groups can perform on the same level as members of privileged groups when situational variables that hinder their performance are eliminated from the organizational environment.

Policy Implications and Interventions

In response to pressures to diversify, organizations may develop the practice of hiring only one or very few females and racial minorities, unwittingly creating situations that will almost surely hinder their chances of success. The growing body of research discussed in this article indicates that solo status 1) promotes differential treatment of the minority person; 2) can negatively influence the performance of women and minorities independently of differential treatment; 3) has an exacerbated effect when negative stereotypes about the solo are prevalent in the situation; and 4) impairs performance even when negative stereotypes are not prevalent when the performance is highly public. And, finally, the research suggest that removing solo status and the processes associated with it can increase the performance of disadvantaged group members to match that of their privileged-group peers. In light of these findings, placing women and racial minorities in solo status could be considered a subtle form of institutional sexism/racism.

In the following sections, we describe actions suggested by social psychological research that could improve the situation for disadvantaged-group solos. Policy makers may look to this research to understand, and subsequently begin to remedy, underrepresentation and to increase retention of disadvantaged groups in organizations.

Understanding Performance-Evaluation Criteria

Generally, when performance-evaluation criteria are ambiguous, vague, or subjective, when decision makers are not accountable for their decisions, and when decision-making processes are not evaluated, performance evaluation is most open to bias disfavoring women and racial minorities, because these factors promote reliance on stereotypes (for a summary see Fiske, Bersoff, Borgida, Deaux, & Heilman, 1991). To the extent that solo status also promotes stereotyping of the solo individual (Taylor et al., 1978), these processes are likely to be particularly damaging for disadvantaged-group solos, by creating more negative environments through stereotypically biased evaluations and by leaving solos uncertain about what is required and expected of them. Clearly stated, objective, and well-known evaluation criteria can not only reduce the potential for bias against women and racial minority group solos, but can also allow these individuals to develop more realistic expectations about their ability to meet performance standards.

Being different from the rest of one's group has its largest effect on the performance of women when the performance task is highly public (Sekaquaptewa & Thompson, in press b.). When the performance task is private, such as a written task, women's performance is only degraded by solo status when women are negatively stereotyped in the testing domain (Inzlicht & Ben-Zeev, 2000). Therefore, evaluators in all domains should examine their evaluation practices to determine the extent to which evaluation relies on public performances. Because the public performance of disadvantaged groups is negatively influenced, while that of White males is relatively unaffected or even facilitated by solo status (Yoder & Sinnett, 1985), evaluation processes based solely on public performance may disfavor women and racial minorities in solo status. Evaluation criteria could be developed that focus less on performance in the public eye, such as written performances. In addition, evaluations of public performance could be made before an audience that includes members of the performer's social group, thus reducing perceptions of solo status in the immediate environment (Taylor et al., 1978; but see Inzlicht & Ben-Zeev, 2000).

New advances in technology offer another possibility for reducing the public nature of performance. Advances in computing and improved Internet connections have allowed increasing numbers of workers to work at home or at distant sites on computers connected to those of co-workers. As such, this computer-mediated communication (CMC) allows people who are physically and visually isolated from one another to work together under relative anonymity. CMC has been found in laboratory studies to reduce evaluation apprehension, social comparison, and self-presentation concerns, thus fostering group awareness over self-awareness (see Lea, Spears, & de Groot, 2001, for a review). Additionally, low-status groups (e.g., Hispanics and women) have been found to give more input (Daily & Steiner, 1998) and possibly feel more empowered in these settings (Herschel, 1994).

Despite mixed reviews about the final output of CMC-based work groups (Postmes & Martin, 2000; Daily & Steiner, 1998), CMC seems to offer a valuable opportunity for schools and organizations to help solos by reducing the public nature of performance.

Understanding the Role of Negative Stereotypes

Women have been found to underperform in domains in which women are negatively stereotyped, but this effect disappeared when the relevance of stereotypes was removed from the situation (Sekaquaptewa & Thompson, in press b.; Spencer et al., 1999). Therefore, organizations and academic programs in male-dominated domains could take steps to downplay the relevancy of stereotypes in the setting. Indeed, women's performance in math was found to improve simply by changing a few words in how the test was described (as traditional math or a special type of math information on which no gender differences emerge). Perhaps similar changes in descriptions of occupations or specific duties could be implemented so they are conceived as less relevant to stereotypes.

Conveying the message that stereotypes are not relevant in the setting can also be implemented through action. Researchers at the University of Michigan developed a program (named the 21st Century Program) for racial-minority first-year college students, who typically evince lower first-semester grades than their preparation (high school GPA, SAT scores) would predict. Such students, the researchers argued, are often given a subtly negative message about their ability through the offer of remedial courses and other skill-building opportunities during their first year. In contrast, students in the 21st Century Program were reminded that, in being admitted to the university, they had survived a highly competitive selection process, a testimony to their high ability. The 21st Century Program offered students not remedial courses, but challenging courses in calculus, physics, chemistry, and writing, with the message that these challenges reflected the high expectations that were held of them. Racial-minority students selected for this program showed none of the typical underperformance patterns, since first-semester grades accurately reflected their level of preparation. In addition, first-semester grades of the racial-minority students were essentially the same as those of White students also enrolled in the program, and follow-up data showed that this performance continued at least through their sophomore year (described in Steele, 1997).

This research shows the potential of interventions to reduce the negative effects of stereotypes about ability for disadvantaged-group members, and suggests that women and racial minorities in solo status may similarly benefit by messages emphasizing their ability and eliminating the relevance of negative stereotypes about their work or educational domain. However, disadvantaged-group solos have been seen to underperform even when stereotypes are irrelevant in the situation when

the performance is highly public. This underscores the assertion that the processes by which solo status affects the performance of women and racial minorities is complex, and remedies geared toward one factor may not assuage the influence caused by another factor.

Understanding the Influence of Performance Expectancies

Because lowered performance expectancies partially explains why solo status has a diminishing effect on the performance of disadvantaged groups (Sekaquaptewa & Thompson, in press b.), interventions should focus on ways to improve expectations about the experience of being a solo. Although simply telling solos they have high ability is not enough to significantly increase their performance expectancies (Stangor et al., 1998), other research suggests that legitimization of the solo's abilities in the eyes of others could improve perceptions of how he or she will perform under solo status (Brown & Geis, 1984; Yoder, 2001). For example, one study showed that groups led by qualified solo women performed better if someone of high status (e.g., a professor) expressed high confidence in the solo woman in front of the group, compared to groups in which the qualified solo woman was not publicly legitimated to others (Yoder, Schleicher, & McDonald, 1998). The need for legitimizing ability is greater for women than for men, particularly when the task domain is counter-stereotypic for women (Hogue & Yoder, 1999). To the extent that disadvantaged-group members are negatively stereotyped in more domains than are privileged-group members, public legitimizing strategies should be particularly effective for improving perceptions about being a solo for women and racial minorities.

Another method to improve expected performance involves increasing the expertise and value of each group member, including the solo. One technique drawing on this idea, known as the jigsaw classroom, required students of different social groups to work together on group assignments (Aronson & Bridgeman, 1979). Each student is assigned one key segment of the material to be learned, such that in order to master the entire lesson, each student is dependent on the input of each of the other students. In other words, each student holds a key piece to the overall assignment, akin to holding different pieces that together form the picture in a jigsaw puzzle. Similar techniques in cooperative learning have been used that require group members to master different tasks related to the learning goal and to learn this task-related knowledge from each other (Cohen, Lotan, & Leechor, 1989). These students not only showed less intergroup conflict, but also scored better on objective exams and reported more liking for school than did non-cooperative-learning students.

Although much of this research was conducted with the goal of improving race relations in desegregated schools, the test-performance and liking-for-school outcomes suggest that increasing outcome dependency might reduce the negative

effects of solo status. By imbuing disadvantaged-group solos with information key to the group's goals, their status in the immediate context might be elevated. Solos become vital and important members of a work team. When disadvantaged-group solos are valued in this way, group memberships and status differences may become less salient in the situation. As such, it seems that programs and interventions designed to reduce the negative effects of solo status could be developed based on cooperative-learning research.

Understanding Feelings of Group Representativeness

Finally, a significant portion of the differential effect of solo status on the performance of high- and low-status groups is due to lower-status-group solos feeling overly representative of their group, which in turn can cause performance-debilitating responding. For example, in our research, female and African-American solos tended to be overly cautious in their responding (Sekaquaptewa & Thompson, in press a. & b.). This is consistent with demonstrations that women more often adopt tentative, nonassertive speech patterns (Carli, 1990; Lakoff, 1973), and also is consistent with research suggesting that solos are concerned about managing their public behaviors and the impression they make on others (Cioffi, 2000). To the extent that solo status induces the idea that one's performance will be generalized to one's gender or racial group, tentative speech may be intensified for female and racial-minority solos, thus reducing the power of their input. This seems to suggest that programs in "assertiveness training" may be beneficial for female solos. However, women who violate stereotypic expectations about their group are often viewed negatively (e.g., Butler & Geis, 1990). Therefore, interventions aimed at changing behaviors of the solo may be less successful than interventions aimed at changing aspects of the social environment that influence feelings of group representativeness.

Feelings of representativeness might also be reduced by focusing less on social identities that differ from the rest of the group, and by emphasizing group memberships that the individual has in common with the group. According to the common ingroup identity model (Gaertner & Dovidio, 2000; Dovidio, Gaertner, Flores Niemann, & Snider, 2001), members of different groups can be induced to conceive of themselves as members of a single superordinate group, as opposed to distinct and independent groups. For example, students of different races at the same college might emphasize their common identity of being members of the same university (Dovidio et al, 2001). This process can be conceptualized in two general ways. First, individuals may see themselves as members of one overarching group at the expense of their former group memberships; or they can emphasize their shared group membership while still maintaining their identity in their subgroup. The latter conceptualization of two groups that are encompassed within a larger superordinate group can be termed same-team identity, because it represents two

groups serving on the same team. Surveys, as well as experimental studies, indicate that individuals who conceive of their situations as two groups working on the same team show the most positive intergroup relations, job satisfaction, and commitment to the group (Dovidio et al., 2001). Thus, persons who emphasize their individual group memberships as well as their membership in a company or school may perform better than those who emphasize one at the expense of the other.

As such, it seems that the experience of solo status could be improved by inducing group members to adopt a same-team identity. By holding on to their existing social identities, such as racial and gender identities, solos can be accepted into the larger group without being perceived as "sell-outs" to their existing groups. It will be the challenge of future researchers and policy makers alike to conduct studies that test these ideas and subsequently to develop programs and interventions that put their findings to use.

Caveat

Important considerations are necessary in terms of which strategies will be most effective for improving the performance of solos from different social groups. For instance, while women's performance expectancies are lower in gender-solo status, research has repeatedly found that African-Americans have higher expectancies for their performance than Whites (van Laar, 2000; see review paper by Graham, 1994), indicating that performance expectancies might not play a critical role for African-American solos. Other research suggests that women's cognitive performance is debilitated when they experience self-objectification, perceiving the self as they believe others perceive them (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). Concerns about one's appearance might be more important regarding gender solos than solo status based on other social categorizations. As such, a gender solo may underperform for different reasons than a race solo, and a double solo, such as an African-American female working with all White men, may have both gender- and race-related concerns that affect performance. Thus, for solo interventions to be successful, they should be developed based on the specific processes occurring within particular racial and gender group compositions. The identification of the different concerns aroused by different types of solo status then becomes an important area of investigation.

Conclusion

A growing body of laboratory and field research indicates that being the only member of one's race or gender in educational or work settings is more detrimental to the performance of women and racial minorities than Whites and males. This research is beginning to show us the processes by which socially disadvantaged group members underperform as solos, making it possible to begin developing

interventions and programs designed to improve performance outcomes for such individuals. Understanding when and why disadvantaged-group members perform below their ability is vitally important for educators, employers, and other decision makers who evaluate academic and job performance.

Because women and racial minorities perform well when not in solo status, one strategy that would clearly be effective in eliminating the negative effects of solo status is to ensure that the situation of solo status never occurs in the first place. Research has demonstrated that workplaces consisting of at least 35% to 40% women are better working environments for women (Collins, 1998; Tolbert, Simmons, Andrews, & Rhee, 1995). School and business policy makers could ensure that work and classroom settings meet this criterion when possible or, at the very least, ensure that they have more than one member of any given social group. Of course, this solution can sometimes be impossible to implement. For instance, in a classroom setting, being placed in an upper-level math course is often dependent on a person achieving a particular score on a placement test. Thus, if it happens that only a single woman scores well enough to enter the class, leading her to become a solo, another woman cannot simply be added. Similarly, if only one racial-minority person applies and is hired at a predominantly White company, the company often cannot create another position simply to ensure that a person will not be a solo. Finally, even if more than one member of a given social group can be recruited to the setting, this may not completely absolve feelings of distinctiveness for racial minorities who feel chronically distinctive (Pollak & Niemann, 1998). In light of these realities, and in combination with the goal of diversification in academic and business settings, the need for understanding the factors that can impede the performance of disadvantaged-group members in solo status is clearly evident.

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