SEXIST HUMOR: LOCAL AND SYSTEMIC MANIFESTATIONS OF
PRIVILEGE AND DISADVANTAGE

BY

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Abstract

The present study emerges from research that discusses a distinction between local and systemic manifestations of oppression. Local context refers to meaning in the immediate situation, whereas systemic context refers to broader meanings. The purpose was to examine effects of simultaneous local privilege and systemic disadvantage on motivation and performance outcomes. Specifically, it examined effects of sexist humor using three conditions—women-disparaging, men-disparaging, and control jokes—on women's career interest and math performance. The men-disparaging condition provided a test of simultaneous privilege in the local context of men-disparaging jokes, but systemic disadvantage in context of a math setting. Tentative results suggest effects of local and systemic context may be contingent upon the domain of interest. Women's interest in masculine careers increased in the men-disparaging condition. Women indicated standardized tests were more unfair and showed a pattern of lower math performance in both gender-disparaging conditions.

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Sexist humor: Local and systemic manifestations of privilege and disadvantage

Surfing the web at work or flipping through television channels at home, one is likely to encounter sexist jokes like the following example:

Q: How do you know when a woman says something smart?

A: When she starts her sentence with "A man once told me..."

What are the effects of exposure to such jokes? Research on women's response to women-disparaging jokes reveals, unsurprisingly, that women find humor that disparages women less funny than humor that disparages other groups such as lawyers (LaFrance & Woodzicka, 1999). Beyond the issue of amusement, it is likely that such jokes harm women's feelings of gender-group positive distinctiveness (Tajfel & Turner, 1986), with negative consequences for domain identification, motivation, and performance. In contrast, such jokes may boost men's positive distinctiveness, perhaps with positive consequences for domain identification, motivation, and performance.

This sort of women-disparaging joke is probably a prototypical case: that is, what comes to mind when people imagine the concept of sexist humor. But what about men-disparaging jokes: do they constitute a form of sexist humor? For example, consider a parallel, men-disparaging version of the previous joke.

Q: How do you know when a man says something smart?

A: When he starts his sentence with "A woman once told me..."

What are the effects of exposure to jokes like these? Taking a cue from the adjective "men-disparaging", one might imagine that this joke would enhance positive distinctiveness for women but harm positive distinctiveness for men. In turn, one might expect that such jokes would not harm—and might even boost—women's domain identification, motivation, and performance. Reflecting this expectation, people may often engage in such men-derogating humor as an exercise in women's empowerment.

Diverging from this viewpoint, a sociocultural perspective suggests a radically different conclusion. Rather than positive distinctiveness within the circumscribed, local context, the more consequential features of the joke may be its links to relatively distal, systemic oppression. Rather than an exercise in women's empowerment, men-disparaging jokes may constitute an equally harmful form of sexist humor that contributes to women's oppression.

Previous Research on Sexist Humor

Reflecting prevailing understandings of "sexist humor", much of the psychological research on the topic focuses on the negative consequences of exposure to women-disparaging humor. More specifically, this research has considered such outcomes as tolerance of discrimination towards women (e.g. Ford, 2000; Ford, Boxer, Armstrong, & Edel, 2008; Ford & Ferguson, 2004; Ryan & Kanjorski, 1998) or the relationship between anti-women sexist attitudes and funniness ratings of

women-disparaging sexist humor (e.g. Greenwood & Isbell, 2002; Thomas & Esses, 2004; Moore, Giffiths and Payne, 1987).

For instance, prejudiced norm theory (Ford & Ferguson, 2004) posits that exposure to disparaging humor—like exposure to ethnic slurs or statements that implicitly condone racism (Blanchard, Crandall, Brigham, & Vaughn, 1994; Greenberg & Pyszczynski, 1985)—increases discrimination (and tolerance of discrimination) toward targets of the humor. This occurs through the creation of a "norm of tolerance" of discrimination implied by the humor. For individuals who score high on measures of prejudice, this norm serves to regulate the amount of tolerance allowed for discriminatory behavior. For example, when men high in hostile sexism are exposed to sexist jokes, they subsequently rate a vignette in which a supervisor makes sexist remarks to a female employee as less offensive than individuals who were exposed to neutral jokes or sexist statements (Ford, 2000; Ford, Wentzel, & Lorion, 2001). Exposure to sexist jokes also predicts the willingness of men high in hostile sexism to donate money to a women's organization and to cut funding from the budget of a women's organization as compared to other organizations. Specifically, men high in hostile sexism donate less money and cut more funding for women's organzations after exposure to women-disparaging sexist jokes (Ford et al, 2008). The authors explain these patterns in terms of different motivations to respond without prejudice. Because men who are low in hostile sexism presumably have more internalized standards of non-prejudice, their attitudes and

behavior do not vary in response to the sexist jokes. In contrast, because men high in hostile sexism presumably have more externally regulated motivations to respond without prejudice, their behavior varies as a function of perceived social norms (Monteith, Deenen, & Tooman, 1996; Ford et al, 2008).

While most research on sexist humor considers its sexism-promoting effects on men who overhear women-disparaging humor or the relationship between ratings of women-disparaging humor and sexist attitudes, less research focuses on women's experience of sexist humor (LaFrance & Woodzicka, 1999). LaFrance and Woodzicka (1999) studied women's verbal and non-verbal responses to women-derogating jokes. Their analysis revealed that women were less amused, were more disgusted, rolled their eyes more frequently (a sign of contempt), and touched their faces more often (possibly a sign of embarrassment) as compared to a control group who received lawyer derogating jokes.

Although the present paper considers the detrimental effects of exposure to disparagement humor, researchers have proposed that disparagement humor, even of the ingroup-disparaging variety, might have positive, liberating functions. (e.g. Datan, 1986; Martineau, 1974 ; Meyers, 2000). With respect to intergroup relations, theorists suggest that humor is a "double-edged sword" that can serve both uniting and dividing purpose (Meyers, 2000; Datan, 1986). Particularly relevant to the present study, theorists note that a valuable function of humor is identification (Martineau, 1974; Meyers, 2000). In the case of identification, humor functions to build support

for the communicators by identifying them with the audience and building cohesiveness within the group (Meyers, 2000) and researchers document the beneficial effects of identification for disadvantaged groups (Schmitt & Branscombe, 2002; Schmitt, Branscombe, Kobynowicz, & Owen, 2002).

To summarize, research suggests that sexist humor harms women indirectly through discrimination towards women on the part of male observers of sexist humor (e.g. Ford, 2000; Ford et al., 2001; Ford et al., 2008; Ford & Ferguson, 2004). It also suggests that women find such women-derogating humor unappealing and offensive (LaFrance & Woodzicka, 1999). Other research suggests that the effects of humor are not all detrimental; humor can serve to unite as well as divide. However, to my knowledge there is no published research on the direct effects of exposure to sexist humor on women's experience beyond ratings of funniness or non-verbal responses to women-disparaging humor.

Detrimental Effects of Sexist Humor: Two Competing Accounts

The present study takes the case of sexist humor to illuminate the differences between two accounts of the detrimental effects of sexist oppression. One account emphasizes the local dynamics of sexist humor, especially the extent to which it results in outgroup derogation or positive distinctiveness. The other account emphasizes the broader systemic dynamics of oppression that shape interpretation of local events.

Outgroup Derogation and Positive Distinctiveness

A common framework for understanding intergroup conflict is to examine intergroup experience in terms of positive distinctiveness and outgroup derogation (Tajfel & Turner, 1986; Turner, 1999). From this perspective, situational influences affect understanding of self- identity as more or less interpersonal or intergroup (Turner, 1999). The interpersonal dimension refers to an understanding of the self and the other as individuals, rather than members of particular social categories (e.g. a relationship between old friends or partners) and the inter-group dimension of identity refers to an understanding of the self and others as members of specific social categories. (e.g. soldiers on opposing sides of a war; Tajfel & Turner, 1986).

This framework places special emphasis on the local context as a determinant of whether one experiences one's identity at the interpersonal or inter-group level. Local context also determines the social groups with which self and others categorize at any moment, since any person is a member of several social categories. Furthermore, when people are in an intergroup context, they strive to maintain their group's positive social identity through group comparison. This positive social identity through intergroup comparison is referred to as positive distinctiveness.

Given this approach, humor that disparages the ingroup threatens ingroup positive distinctiveness. This threat to group positive distinctiveness explains why ingroup members find jokes that disparage their ingroup less amusing than jokes that disparage a different group (Bourhis, Gadfield, Giles, & Tajfel, 1977; LaFrance &

Woodzicka). In the case of sexist humor, exposure to women-disparaging humor is likely to threaten women's positive distinctiveness. This threat to positive distinctiveness suggests that women might experience negative outcomes as a result of exposure to women-disparaging humor.

The preceding discussion has focused on detrimental consequences of woman-disparaging humor. What about exposure of women to men-disparaging humor? Although ingroup-disparaging humor might harm positive distinctiveness, an emphasis on local context and local relevance suggests that outgroup-disparaging humor can boost ingroup positive distinctiveness and identification (Bourhis, et al., 1977; Martineau 1972; Meyer 2000; Ruscher, 2001). From this perspective, one can expect that exposure to outgroup, men-disparaging humor will increase women's positive distinctiveness. In turn, this increase in positive distinctiveness may lead women to experience positive or buffering outcomes as a result of exposure to men-disparaging humor—especially to the extent that it increases gender identification (Branscombe, Schmitt, & Harvey 1999; Schmitt & Branscombe, 2002; Schmitt, Branscombe, Kobynowicz, & Owen, 2002).

A Sociocultural Approach to Systemic Devaluation

In contrast to a focus on positive distinctiveness and outgroup derogation within the circumscribed joke situation, a sociocultural approach (Adams, Biernat, Branscombe, Crandall, & Wrightsman, 2008) to systemic devaluation identifies the source of oppression in the structures of the social world. Such structures include cul-

tural models and social representations that make up a sociocultural atmosphere of oppression and afford continued devaluation. A key aspect of the sociocultural approach to systemic oppression is the dynamic, mutually constituting nature of the relationship between the individual and the sociocultural environment (Kim & Markus, 1999). This sociocultural perspective implies a different set of research directions than what currently guides the psychological literature on sexist humor. First, a sociocultural approach locates the roots of sexism and sexist attitudes not inside the minds of hostile sexists, but instead in the sociocultural worlds which reproduce both sexist humor and an understanding that such humor is amusing (e.g. in artifacts such as disparaging comic strips or jokes on the internet). Second, a sociocultural approach suggests that detrimental effects of sexist humor are not limited to the individual actions of hostile sexists who enjoy women-derogating humor. Instead a sociocultural approach suggests taking the perspective of women to examine how sexist humor as a cultural artifact affects women's experience and outcomes.

Oppression Absent Differential Treatment

The aforementioned implications of a sociocultural approach draw attention to oppression that occurs absent differential treatment. This approach highlights how oppression is impactful because sociocultural structures can call to mind the broader systemic nature of oppression. (For example, a joke or a comic strip may not include differential behavior beyond words, but it serves as a reminder of broader devaluation.) Additionally, this approach highlights that the reproduction of oppression and

devaluation does not depend on direct acts of negative treatment. Research in social psychology illustrates examples of oppression absent direct discrimination. The following section highlights some of this research.

Identity threat. One example of oppression that does not necessarily entail differential treatment is research on identity threat. Identity threat is the wide set of concerns that come about when some aspect of the environment signals danger that a person might be evaluated on the basis of a threatened social identity (Adams, Garcia, Purdie-Vaughns & Steele, 2006; Branscombe, Ellemers, Spears, & Doosje, 1999). Identity threat can be divided into four classes (see Branscombe et al. 1999): acceptance threat, threat to group value, distinctiveness threat, and categorization threat. The last of these classes, *categorization threat,* is most relevant for discussion of oppression absent differential treatment. Categorization threat refers to categorization against one's desire. Considering the example of sexist humor, a gender-derogating joke makes gender group membership salient. The salience of gender group membership can lead to categorization based on gender and should be threatening to a woman who does not want to be categorized by gender in that situation.

Stereotype threat. Stereotype threat (Steele, 1997; Steele & Aronson, 1995) refers to a "threat in the air" that can harm important outcomes such as performance, motivation, and long-term engagement in a stereotyped domain. This threat can occur due to the presence of a mere reminder of a negative stereotype of one's group's poor

performance (Steele, Spencer & Aronson 2002). Stereotype threat is a prime example of oppression absent differential treatment because it does not require negative treatment on the part of individual actors, but instead occurs as potential targets struggle with the implications of social representations of their group (Adams et al, 2008). The large literature on stereotype threat (e.g. Steele, 1997; Steele & Aronson, 1995; Spencer, Steele & Quinn, 1999; Steele, 2002) provides examples of such systemic disadvantage.

Self-stereotyping. A few researchers suggest that some (O'Brien & Hummert, 2006) or all (Wheeler & Petty, 2001) of the performance decrements associated with stereotype threat may be due to a process of self-stereotyping. Self-stereotyping occurs when environmental cues activate group-based schemas that include automatic links between stereotypes and behaviors associated with the stereotype about one's group (Wheeler & Petty, 2001; Bargh, Chen, & Burrows, 1996). Stereotype threat and self-stereotyping differ mainly on the process involved. The explanation for stereotype threat performance decrements is a "hot" motivational process, whereas self-stereotyping relies on a "cold" cognitive explanation (Wheeler & Petty, 2001). Like stereotype threat, self-stereotyping relies on pre-existing understanding of the domain which arises through continuous engagement with a world in which stereotypes of one's group exist as social or cultural representations. Regardless of the specific process—stereotype threat or self-stereotyping—these performance decrements resonate with a sociocultural approach to oppression to the extent that

they illustrate how associations to broader systems of oppression can trigger harmful outcomes, even in the absence of differential treatment within a circumscribed instruction setting.

Oppression manifest in positive treatment

Not only does oppression occur in the absence of differential negative treatment, but it can also occur through apparently positive treatment towards the oppressed (Adams et al., 2008). For example, research on benevolent sexism (Glick & Fiske, 2001) highlights how even apparently positive attitudes or biases towards women are not benign, but serve to justify gender inequality and hostile attitudes towards women who do not conform to traditional gender roles. More generally, a sociocultural perspective suggests that positively-valenced treatment—in the present case, men-disparaging humor that contributes to women's positive distinctiveness in a circumscribed testing situation—can result in harmful outcomes if it also primes associations to more general systemic and structural oppression that devalues women.

Local and systemic forces

Because potentially positive treatment can cause negative outcomes for the disadvantaged by priming associations of broader oppression, it is necessary to distinguish between impacts at differing contextual levels. This distinction between local and systemic contexts is evident in at least two programs of research.

First, research on the rejection identification model notes that, although the local relevance of attributions to discrimination may appear similar, the consequences of

these attributions vary as a function of the different total relevance that they have for people from advantaged and oppressed groups. (Branscombe et al., 1999; Schmitt & Branscombe, 2002; Schmitt et al., 2002). Attributions to discrimination will likely incur more harmful psychological consequences for people from relatively disadvantaged groups because the total relevance of the attribution includes the broader system of oppression that transcends the local context. In contrast, attributions to discrimination will likely incur less harmful psychological consequences for relatively advantaged group members because the total relevance does not include a broader system of oppression. In short, the total relevance or meaning of attributions to discrimination differs for advantaged and disadvantaged groups because of their different positions in the social structure.

Beyond attributions to discrimination, research on the effects of a suggestion of sexism (Adams, Garcia, Purdie-Vaughns, & Steele, 2006) also makes a distinction between local and systemic context. An important contribution of this research is its consideration of the effects of simultaneous disadvantage and advantage at local and systemic levels. In one of these studies, researchers exposed men and women to the suggestion by a confederate that a different-sex instructor "seemed sexist" (Adams et al., 2006, Study 3). They found that one negative outcome—discomfort concerning the instruction situation—affected both men and women. That is, both men and women exposed to the suggestion about gender bias of a different-sex instructor reported less comfort in an instruction situation than participants who were not

exposed to the suggestion. However, the effects of the suggestion had radically different consequences for women and men on a subsequent logic test. Results for women indicated that the mere suggestion of sexism, even in the absence of direct differential treatment, was sufficient to undermine women's comfort in the instruction situation and lower their performance on the logic test relative to women who did not receive the suggestion. In contrast the parallel suggestion did not have the same negative effects on men's performance, even when they were supposedly the target of a woman's anti-male bias.

One can understand men's outcomes as a function of simultaneous local disadvantage and systemic privilege (see Figure 1). Men in this study were disadvantaged in the local context as a function of the suspicion that a female instructor "seems sexist". Yet they were privileged at the systemic level relative to women as a feature of the logic domain. Men exposed to the suggestion of sexism about a female instructor reported less comfort, which suggests that the experience of local disadvantage did have some negative impact. However the systemic advantage appeared to buffer (and perhaps even enhance) men's performance, despite their local disadvantage. This pattern is consistent with the phenomenon of stereotype lift, whereby systemic privilege in the form of positive stereotypes about performance (or negative stereotyped performance of another group relative to ones own) can increase performance for advantaged group members in those privileged domains (Walton & Cohen, 2003). However, the contribution of this study was to demonstrate that the

beneficial effects of systemic privilege can occur even when the same event that triggers stereotype lift—the suggestion that the female instructor is biased against men—constitutes a form of local disadvantage.

Figure 1: Pictorial representation of men's outcomes in Adams et al (2006).

Systemic Privilege:

Men advantaged relative to women as an enduring feature of math/logic domains

Local Disadvantage:
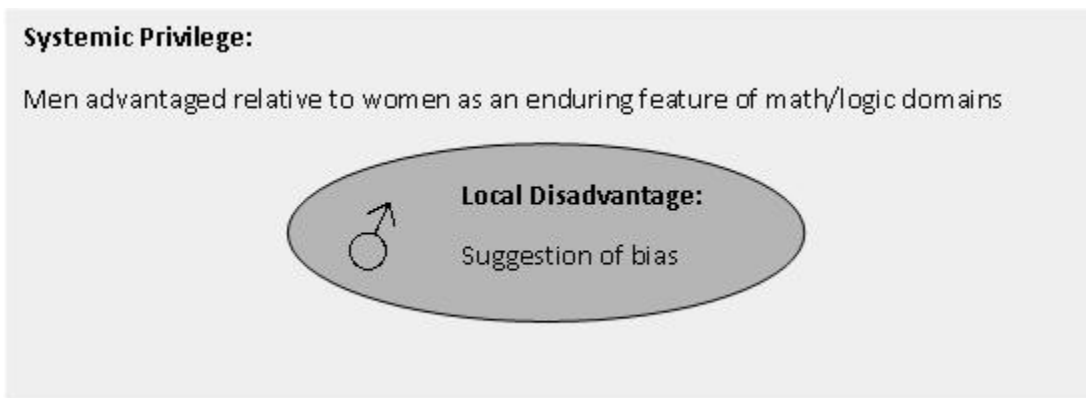
Suggestion of bias

In contrast to men, women in the study experienced disadvantage at both the local and systemic levels, as a function of the suggestion of sexism and a systemic feature of the logic domain. Because women were disadvantaged at both contextual levels it is unclear which had more drastic consequences: the local dynamics of outgroup derogation implicit in the suggestion of sexism, per se, or the broader disadvantage relative to men as a feature of logic domains.

The Present Study

The present study examines a similar distinction between local and systemic forces. However, whereas previous research has investigated the simultaneous impact of local disadvantage and systemic privilege on men's experience (Adams et al.,

2006), the present study investigates the simultaneous impact of local privilege and

systemic disadvantage with respect to women's experience (Figure 2). Specifically,

this study examines women's outcomes in a math test setting after exposure to

women-disparaging, men-disparaging, or non-gender disparaging jokes. For multiple

reasons—including social identity threat, self-stereotyping, and harm to positive

distinctiveness—various theoretical perspectives suggest that women in the women-

disparaging joke condition should experience more harmful outcomes than women in

the control condition. However, the men-disparaging condition provides a means to

test two competing hypotheses.

Figure 2: Pictorial representation of women's experience in the men derogating joke
condition.
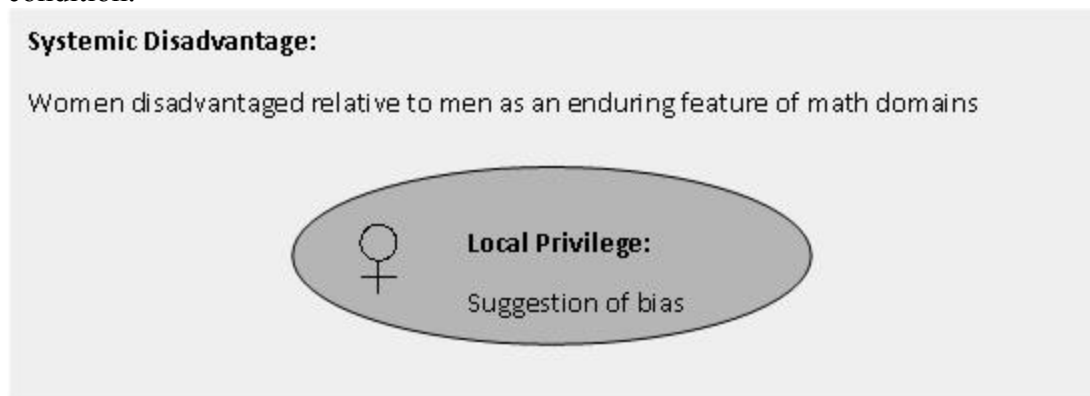
The first hypothesis follows from a focus on *local advantage* provided by the

men-disparaging jokes. To the extent that men-derogating jokes promote positive

distinctiveness of women relative to men and women-disparaging jokes decrease

positive distinctiveness of women relative to men, one can hypothesize that this local

advantage will lead to more positive outcomes for women in the men-disparaging condition than women in the women-disparaging condition.

In contrast to this local advantage hypothesis, the second hypothesis follows from a focus on the broader implications of gender disparagement humor in a context of systemic oppression. This *systemic disadvantage* hypothesis*,* inspired by a sociocultural approach, suggests that both women-disparaging and men-disparaging jokes direct attention to the broader systemic devaluation of gender in math domains. Accordingly women exposed to both women-disparaging and men-disparaging conditions will lead to worse outcomes than women in the control condition.

METHOD

Participants

I recruited women (N = 117) from introductory psychology courses at the University of Kansas (KU) to participate in the study for course credit requirements.

Procedure

Participants enrolled in the study via an online recruitment system. A male experimenter administered the study in sessions of one or two people so that participants would remain unaware of the gender selection criteria. He explained that the study examined the relationship between humor, career interests, and math test performance. Participants took approximately 45 minutes to complete the study.

Measures

Joke Manipulation

Women participated in one of three conditions which differed only in the joke rating measure. In the *women-disparaging* condition, women rated a series of 14 jokes (Appendix A-I) on a 1 to 7 scale (1 = *not at all funny*, 7 = *extremely funny*). Of these 14 jokes, 5 disparaged women and the remaining 9 included no gender references. In the *men-disparaging* condition women received the same joke rating measure except that the 5 gender-disparaging jokes targeted men (Appendix A-II). In the *control* condition the measure contained the same 9 non-gender referencing jokes and one additional joke that also did not mention gender (Appendix A-III). The experimenter administered joke measures in envelopes to remain blind to condition.

Career Ratings

After the joke manipulation, participants rated the likelihood they would pursue a list of 28 possible careers (Appendix B). I selected this list of possible careers from a directory of careers for psychology majors posted on the University of Kansas career center website (University Career Center, 2006). Inclusion of the career measure allowed for detection of changes in women's motivation to pursue particular careers, and more specifically the gendered nature of such career motivations.

In a pretesting phase, a separate group of 12 women undergraduates categorized each of the careers as stereotypically feminine, stereotypically masculine, or neither feminine or masculine. I computed composite career scores by averaging careers

placed in the same gender category by at least 9 of the 12 pretest participants (75%).

The *feminine* category included 5 careers (caseworker, daycare center director,

teacher, school psychologist, and school counselor; α = .82), the *masculine* category

included 2 careers (probation parole officer and computer programmer; α = .095)[1],

and the *neither* category included 6 careers (training specialist, consumer

psychologist, health policy planner, consumer researcher, media director, and public

opinion survey worker; α = .61).

Pre-test

Following the career measure, participants in the study completed a measure

adapted from Steele and Aronson (1995). On this measure (Appendix C) participants

wrote how many hours they slept the night before and rated on a 1 to 7 scale how able

to focus they felt, how much stress they had been under lately, and how tricky/unfair

they find standardized tests. The first three of these questions constituted a measure of

self-handicapping—excuses that suggest a concern about the evaluative implications

of one's poor performance. Previous research (Steele & Aronson, 1995) found that

participants under stereotype threat indicated greater self-handicapping. To compute a

composite self handicapping score I reverse coded participants' ratings for the items

able to focus and *hours slept,* standardized both of these reverse coded items and

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[1]Because of the extremely low reliability probation parole officer and computer programmer results appear separately in footnotes.

participants ratings of *stress*, and then computed the mean of these standardized

scores to create a composite score of self-handicapping for each participant ($\alpha = .50$)[2].

Math Test

Next, the experimenter gave participants 25 minutes to complete a math test

(Appendix D). This math test contained 22 math questions adapted from a Scholastic

Assessment Test (SAT) practice manual (Stephens, 2006).

Word Completion

After the math test, participants completed a word completion test (Appendix E).

This word completion measure consisted of 18 word stems, including 12 stems

associated with "feminine" words (e.g. _ _ _ AN = woman, _ INK = pink) and 6

stems associated with "self-doubt" words (e.g. FA _ _ = fail, W_ _ K = weak). I

designed the measure to assess differences in feminine and self-doubt activation as a

result of the experimental manipulation. To the extent that disparagement humor has

detrimental effects,these effects may work by cuing self-doubt or associations to

gender (and therefore gendered stereotypes).

Post-test Questionnaire

After the word completion measure participants completed a post test

questionnaire (Appendix F). Items on the questionnaire referred to participants

performance on the math test (their expected performance compared to KU students,

effort, and how important it is for them to do well on similar tests), as well as a series

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[2]Single item analyses reveal similar patterns of non-significant results so I report the composite scores despite moderately low reliability.

of judgments about which of two groups would perform better on the math test and

the word completion test. Besides the focal comparison of men to women, the set of

comparisons included English majors to Psychology majors, KU students to Kansas

State University students, high school math teachers to engineers, and 18-year olds to

58-year olds. Self ratings of effort, performance, and importance of the math test

examined whether participants explicitly indicated differences on these dimensions,

whether actual differences or because of self-handicapping. Questions about whether

women or men do better on math tests and the word completion tests were designed

to examine whether participants beliefs about gender differences in test performance

changed as a function of gender salience or as a function of positive distinctiveness.

Debriefing

As a final procedure, the experimenter probed participants for suspicion and then

informed them about the true nature of the experiment. As a manipulation check, he

directly asked participants whether their joke rating measure included any jokes that

made fun of women, any jokes that made fun of men, or did not include any jokes

that made fun of women or men.

RESULTS

I report two sets of analyses in the results for each dependent measure. First, I

report analyses for all participants. Second, I report analyses from a refined sample

that excludes data from 24 participants who expressed suspicion about the true nature

of the study (n=3) or who failed the manipulation check (i.e., could not recall which

jokes they received, despite a prompt that described all three conditions; n=21).

Analytic Strategy

To analyze results, I performed two orthogonal contrasts (Table 1). The first

contrast tests the systemic disadvantage hypothesis: specifically, that participants in

the gender disparagement conditions (i.e., both women-disparaging jokes and men-

disparaging jokes) suffer worse outcomes than women in the control condition. The

second contrast tests the local advantage hypothesis: specifically, that participants in

the men-disparaging condition experience better outcomes than participants in the

women-disparaging condition. Because these hypotheses are directional, I report tests

of associated contrasts using one-tailed probabilities (see Furr & Rosenthal, 2003,

footnote 1). Furthermore, although the primary focus of analyses is planned contrasts,

I follow convention by reporting omnibus tests, and when appropriate, post-hoc tests.

Table 1. Planned contrasts corresponding to the systemic disadvantage and local
advantage hypotheses. Direction may vary based on specific measure.

	Women-disparaging	Men-disparaging	Control
Systemic Disadvantage (C1):	-.5	-.5	1
Local Advantage (C2):	-1	1	0

Joke Manipulation

I created a composite score of joke funniness ratings by averaging each

participant's score across all the jokes on the joke manipulation measure (see Table 2;

α all jokes, gender disparagement conditions $= .87$; α non-gender jokes, all conditions $= .79$). The omnibus ANOVA

for all participants indicated joke funniness ratings did not differ by condition $F(2,$

$116) = .20$, $p = .82$, $\eta^2_p = .004$. The omnibus ANOVA for the refined sample also

indicated that the effect of condition on was not significant, $F(2, 90) = .77$, $p = .47$,

$\eta^2_p = .017$.

In addition to overall joke ratings, I also created a composite rating of the gender

related jokes in the women-disparaging and men-disparaging conditions ($\alpha_{all\ participants}$

$= .89$). Including data from all participants, women rated the women-disparaging

jokes significantly less funny than the men-disparaging jokes $t(79) = -2.22$, $p = .03$,

$\eta^2_p = .059$. Participants who passed the manipulation check (i.e., the refined sample)

also rated the women-disparaging jokes significantly less funny than the men-

disparaging jokes (or the men-disparaging jokes significantly more funny than the

women-disparaging jokes) $t(59) = 2.46$, $p=.02$, $\eta^2_p = .093$. Consistent with the

literature on positive distinctiveness and humor (Bourhis, et al., 1977; Martineau

1972; Meyer 2000; Ruscher 2001), this pattern suggests that women found the same

jokes less problematic (and more funny) when the jokes derogated men than when the

jokes derogated women.

Table 2: Joke funniness ratings by condition.

Joke type:	Women-disparaging	Men-disparaging	Control
All Participants			
All jokes	3.13 (1.08)	3.23 (.83)	3.27 (.89)
Gender jokes	3.19 (1.63)	3.85 (1.04)	-----
Refined Sample			
All jokes	3.05 (1.06)	3.34 (.81)	3.22 (.90)
Gender jokes	3.15 (1.63)	4.02 (1.10)	----

Career Ratings

I conducted a 3 x 3 mixed-model ANOVA with career category (masculine, feminine, neither) as a within-subjects variable and joke condition (women-disparaging, men-disparaging, control) as a between-subjects variable[3].

Results with all participants revealed a marginally significant effect of joke disparagement condition, $F(2, 112) = 2.44$, $p = .09$, $\eta^2_p = .042$. Tukey's post hoc tests

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[3]Including all participants, results of this mixed-model ANOVA with masculine composite score reveal a similar pattern when calculated separately with each of the masculine careers. Results of the *probation parole officer* in place of the masculine career composite score revealed a significant effect of career category $F(2, 113) = 59.10$, $p < .001$, $\eta^2_p = .343$, approached significance for effect of joke disparagement target condition $F(2, 113) = 2.35$, $p = .10$, $\eta^2_p = .040$, and reveals no significant interaction $F(4, 113) = .67$, $p = .62$, $\eta^2_p = .012$. Results of the *computer programmer* in place of the masculine career composite score again revealed a significant effect of career category $F(2, 112) = 76.58$, $p < .001$, $\eta^2_p = .406$, approached significance for effect of joke disparagement target condition $F(2, 112) = 2.09$, $p = .13$, $\eta^2_p = .036$, and revealed no significant interaction $F(4, 112) = .87$, $p = .48$ $\eta^2_p = .015$.

Including only participants in the refined sample, results of this mixed-model ANOVA with masculine composite score reveal a similar pattern when calculated separately with each of the masculine careers. Results of the *probation parole officer* in place of the masculine career composite score revealed a significant effect of career category $F(2, 89) = 39.96$, $p < .001$, $\eta^2_p = .310$, a significant effect of joke disparagement target condition $F(2, 89) = 3.22$, $p = .05$, $\eta^2_p = .068$, and no significant interaction $F(4, 89) = .62$, $p = .65$ $\eta^2_p = .014$. Results of the *computer programmer* in place of the masculine career composite score again revealed a significant effect of career category $F(2, 88) = 56.38$, $p < .001$, $\eta^2_p = .391$, a significant effect of joke disparagement target condition $F(2, 88) = 3.20$, $p < .05$, $\eta^2_p = .068$, and no significant interaction $F(4, 88) = .30$, $p = .88$ $\eta^2_p = .007$.

across all career categories reveal that participants in the men-disparaging condition indicated significantly more career interest than participants in the control condition but did not differ from participants in the women-disparaging condition. Participants in the women-disparaging condition did not differ from participants in the control.

Results for the refined sample revealed a significant main effect of joke disparagement condition, $F (2, 88) = 3.55$, $p = .03$, $\eta^2_p = .075$. Tukey's post hoc tests across all career categories revealed that participants in the men-disparaging condition indicated significantly more career interest than participants in the control condition but did not differ from participants in the women-disparaging condition (see Table 3 for estimated marginal means). Participants in the women-disparaging condition did not differ from participants in the control.

Results including all participants revealed a significant main effect of career category, $F (2, 112) = 82.12$, $p < .001$, $\eta^2_p = .423$, such that participants expressed greatest interest in feminine careers and least interest in masculine careers . Results with participants in the refined sample also revealed a significant main effect of career category, $F (2, 88) = 58.94$, $p < .001$, $\eta^2_p = .401$, such that participants expressed greatest interest in feminine careers and least interest in masculine careers.

Although the Career Category x Joke Condition interaction was not significant whether examining data for all participants $F (4, 112) = .92$, $p = .45$, $\eta^2_p = .016$ or for the refined sample, $F (4, 88) = .46$, $p = .76$, $\eta^2_p = .010$, inspection of cell means in Table 3 suggests that the effect of joke condition was mainly evident for ratings of

interest in the *masculine* and *neither* career categories, but not *feminine* careers. To

explore this possibility, I performed one-way ANOVAs of the joke-condition factor

for each career category.

Table 3: Estimated marginal means and standard error of career interest category by condition.

	Women-disparaging	Men-disparaging	Control	Total across conditions
All participants				
Feminine	3.50 (.24)	3.53 (.22)	3.04 (.24)	3.36 (.14)
Masculine	1.57 (.16)	1.85 (.14)	1.67 (.16)	1.70 (.09)
Neither	2.53 (.16)	2.87 (.14)	2.33 (.16)	2.58 (.09)
Total across careers	2.53 (.14)	2.75 (.12)	2.35 (.14)	
Refined Sample				
Feminine	3.43 (.27)	3.56 (.27)	2.99 (.27)	3.33 (.16)
Masculine	1.56 (.16)	2.03 (.16)	1.58 (.16)	1.72 (.09)
Neither	2.48 (.17)	2.86 (.17)	2.31 (.17)	2.55 (.10)
Total across careers	2.49 (.14)	2.81 (.14)	2.30 (.14)	

Feminine career interest. Including data from all participants, the omnibus

ANOVA for feminine career interest revealed no effect of condition, $F(2, 116) =$

$1.37, p = .26, \eta^2 p = .023$. The first planned contrast (indicating lower career interest

in the gender-disparaging conditions than the control) did not reach significance

$t(114) = -1.64, p = .95$. The second planned contrast (indicating lower career interest

in the women-disparaging condition than the men disparaging condition) did not reach significance $t(114) = .16, p = .44$.

Including data from only participants in the refined sample, the omnibus ANOVA of feminine career interest revealed no effect of condition $F(2, 90) = 1.28, p = .28$, $\eta^2 p = .028$. The first planned contrast (predicting lower career interest in the gender-disparaging conditions) did not reach significance $t(90)= -1.55, p = .94$. The second planned contrast (indicating lower interest in the women-disparaging condition than in the men-disparaging condition) was not significant $t(90)= .40, p = .35$. Feminine career interest did not decrease in the women-disparaging and men-disparaging conditions relative to the control. Participants in the women-disparaging and men-disparaging conditions did not differ in feminine career interest.

Masculine career interest. Including data from all participants, the omnibus ANOVA for masculine career interest[4] was not significant, $F (2, 115) = .94, p = .40$, $\eta^2 p = .016$. The first planned contrast (indicating lower career interst in the gender-disparaging conditions) did not reach significance $t(113) = -.30, p = .62$. The second planned contrast (indicating lower career interest in the women-disparaging condition

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[4]Due to the low reliability of masculine career interest items I performed omnibus ANOVAs for the probation parole officer and computer programmer careers separately with all participants. Although not significant, $F (2, 116) = 1.57, p = .40$, $\eta^2_p = .016$, the pattern of means for probation parole officer ($M_{wd} = 1.68, SD_{wd} = 1.18$; $M_{md} = 2.05, SD_{md} = 1.49$; $M_c = 1.75, SD_c = 1.16$) was similar to the masculine career composite. The first planned contrast did not reach significance $t(114) = -.42, p = .79$. Thee second planned contrast did reach significance $t(114) = 1.28, p = .10$. The computer programmer results revealed a similar pattern ($M_{wd} = 1.44, SD_{wd} = .94$; $M_{md} = 1.66, SD_{md} = 1.22$; and $M_c = 1.56$, $SD_c = 1.34$), $F (2, 115) = .33, p = .72, \eta^2_p =.006$. Neither the first contrast $t(113) = .02, p= .49$. nor the second contrast $t(113) = .81, p= .21$. reached significance.

than the control) did not reach conventional levels of significance $t(113) = 1.32$, p = .10.

Including data from only participants in the refined sample, the omnibus ANOVA of masculine career interest[5] revealed a significant effect of condition $F(2, 89) = 3.10$, $p = .05$, $\eta^2_p = .065$. The first planned contrast did not reach significance $t(89) = -1.21$, $p = .89$. However, in this case, the second planned contrast did yield significant results $t(89) = 2.15$, $p = .02$. Tukey's post hoc tests revealed a moderate difference between the men-disparaging ($M = 2.03$, $SD = 1.03$) condition and both women-disparaging ($M = 1.55$, $SD = .67$) and control ($M = 1.56$, $SD = .84$) conditions. Overall, results suggest that jokes in the men-disparaging condition increased women's interest in masculine gendered careers relative to jokes in both the women-disparaging and control conditions.

Neither-gender career interest. Including data from all participants, the omnibus ANOVA for careers categorized as neither masculine nor feminine reached significance, $F(2, 115) = 3.37$, $p = .04$, $\eta^2_p = .056$. The first planned contrast (indicating lower career interest in the gender-disparaging conditions) did not reach

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[5]Due to the low reliability of masculine career interest items I performed omnibus ANOVAs for the probation parole officer and computer programmer careers separately with only participants in the refined sample. Like the composite of masculine career interest, the ANOVA for probation parole officer ($M_{wd} = 1.63$, $SD_{wd} = 1.13$; $M_{md} = 2.32$, $SD_{md} = 1.66$; $M_c = 1.72$, $SD_c = 1.05$) revealed a moderately significant effect of condition $F(2, 92) = 2.54$, $p = .08$, $\eta^2_p = .053$. The first planned contrast did not reach significance $t(90) = -.91$, $p = .82$. However the second planned contrast did reach significance $t(90) = 2.06$, $p = .02$. Although not significant, the computer programmer results revealed a similar pattern ($M_{wd} = 1.45$, $SD_{wd} = .99$; $M_{md} = 1.74$, $SD_{md} = 1.26$; and $M_c = 1.41$, $SD_c = 1.01$), $F(2, 91) = .87$, $p = .43$, $\eta^2_p = .019$. Neither the first contrast $t(89) = -.79$, $p = .78$. nor the second contrast $t(89) = 1.04$, $p = .15$. reached significance.

significance $t(113) = -1.93$, $p = .97$. The second planned contrast reached significance $t(113) = 1.65$, $p = .05$ indicating that participants in the men-disparaging condition showed more interest in non-gendered careers than participants in the women-disparaging condition. Tukey's post hoc tests revealed that participants in the men-disparaging condition ($M = 2.87$, $SD = .98$) indicated more interest in the non-gendered careers than participants in the control condition ($M = 2.33$, $SD = .92$). Participants in the women-disparaging condition ($M = 2.53$, $SD = .90$) did not differ from either the men-disparaging or control conditions.

Including only participants from the refined sample, the omnibus ANOVA of careers categorized as neither masculine or feminine revealed a marginal effect of condition $F(2, 89) = 2.81$, $p =.07$, $\eta^2_p = .059$. The first planned contrast did not reach significance $t(89)= -1.74$, $p = .96$. The second planned contrast approached significance $t(89)= 1.59$, $p = .06$. Tukey's post-hoc tests revealed that participants in the men-disparaging condition showed significantly more interest in the neither-gender careers than participants in the control condition, but did not differ from participants in the women-disparaging condition. Participants in the women-disparaging condition did not indicate significantly more interest in the neither-gender careers compared to participants in the control. These results indicate that gendered disparagement humor did not decrease interest in the neither-gendered careers relative to the control; however the men-disparaging jokes did increase women's interest relative to women-disparaging jokes.

In summary, results of these ANOVA suggest that the main effect of joke condition in the overall 3 x 3 analysis was mainly a function of ratings for male-gendered and neither-gendered careers. Specifically, participants in the men-disparaging condition expressed greater interest in masculine-gendered and neither-gendered careers, but did not express greater interest in feminine-gendered careers, than did participants in the women-disparaging and control conditions. Because the corresponding 3 x 3 interaction implied by this differential effect of the manipulation across career condition was not significant, one must interpret results of this analysis with appropriate caution. However, the overall pattern—especially the observation that men-disparaging jokes increase women's interest in pursuing careers that are considered masculine—is consistent with the local advantage hypothesis. Perhaps because the men-disparaging jokes increase women's positive distinctiveness relative to men, the masculine careers seem more interesting or less threatening.

Pre-test

Self-handicapping. Including data for all participants, the omnibus ANOVA for the self-handicapping composite did not differ by women-disparaging ($M = -10$, $SD = .67$), men-disparaging ($M = .06$, $SD = .76$), or control ($M = .06$, $SD = .66$) conditions $F(2, 116) = .70$, $p = .50$, $\eta^2{}_p = .012$. Neither the first planned contrast (indicating greater self-handicapping in the gender disparaging conditions), $t(114) = -.61$, $p = .73$ nor the second planned contrast (indicating greater self-handicapping in the women-

disparaging than in the men-disparaging condition), $t(114)= -1.04$, $p = .85$ reached significance.

Including data for only participants in the refined sample, the omnibus ANOVA for the self-handicapping composite did not differ by women-disparaging ($M = -10$, $SD = .69$), men-disparaging ($M = -.01$, $SD = .65$), or control ($M = .05$, $SD = .66$) conditions $F(2, 89) = .42$, $p = .66$, $\eta^2_p = .009$. Neither the first planned contrast $t(89)= -.75$, $p = .77$ nor the second planned contrast $t(89)= -.52$, $p = .70$ reached significance. The self-handicapping measure does not differ by condition.

Test unfairness. Including data for all participants, the omnibus ANOVA for the tricky/unfairness item differed significantly by condition $F(2, 116) = 4.22$, $p = .02$, $\eta^2_p = .069$. The first planned contrast reached significance $t(114)= 2.90$, $p = .002$. The second planned contrast did not reach significance $t(114)= .02$, $p = .51$. Tukey's post hoc tests likewise confirm that the participants in the women-disparaging condition ($M = 4.19$, $SD = 1.31$) and men-disparaging condition ($M = 4.18$, $SD = 1.48$) rated standardized tests as more unfair than did participants in the control condition ($M = 3.33$, $SD = 1.59$). The men-disparaging and women-disparaging conditions did not differ.

Including data for the refined sample, the omnibus ANOVA for the tricky/unfair item (Figure 3) revealed a significant effect of condition $F(2, 90) = 4.16$, $p = .019$, $\eta^2_p = .085$. Tukey's post hoc tests indicated that this effect was due to an increase in women's ratings of the trickiness of standardized tests in both women-disparaging and

men-disparaging conditions relative to the control condition. The men-disparaging

and women-disparaging conditions did not differ. Consistent with post hoc results,

the first planned contrast was significant $t(90)= 2.87, p < .01$ and the second planned

contrast was not significant $t(90)= .27, p = .39$. These results support the systemic

disadvantage hypothesis; that is, both types of gender derogating jokes increased

participants' perceptions of the tricky/unfairness of standardized tests relative to
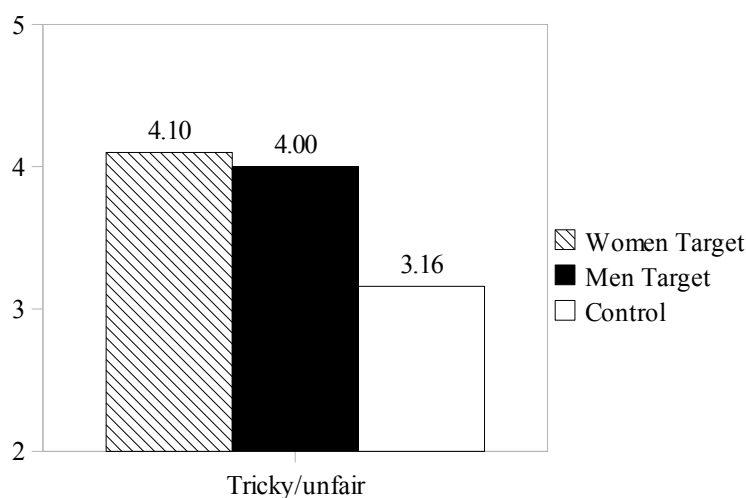
control jokes.

Figure 3: Data from refined sample. Mean response to the item "How tricky/unfair do you find standardized tests? "

Math test

To calculate math test scores I awarded 1 point for correct answers, -0.25 points

for incorrect answers, and 0 points for no answer, consistent with SAT scoring

practices.

Overall math test. Including data for all participants, the omnibus ANOVA for the overall math test was not significant $F(2, 116) = .55$, $p = .58$, $\eta^2_p = .010$. Participants in the women-disparaging ($M = 6.29$, $SD = 3.71$), men-disparaging ($M = 5.69$, $SD = 2.75$), and control ($M = 6.41$, $SD = 3.65$) conditions did not differ. Neither the first contrast $t(114) = .63$, $p = .26$ nor the second planned contrast $t(114) = -.80$, $p = .79$ reached significance.

Including data from only the participants in the refined sample, the omnibus ANOVA for the overall math test was not significant $F(2, 90) = .65$, $p = .52$, $\eta^2_p = .014$. Scores of participants in the women-disparaging ($M = 6.06$, $SD = 3.62$), men-disparaging ($M = 5.83$, $SD = 2.54$), and control ($M = 6.73$, $SD = 3.53$) conditions did not differ from each other. Similarly, neither the first planned contrast $t(90) = 1.11$, $p = .14$ nor the second planned contrast $t(90) = -.27$, $p = .61$. reached significance.

First half. Because participants scored 78% of their points on the first half of the problems, I conducted a second analysis of participants' scores on the first eleven questions.

Although the pattern of mean scores for data with all participants was consistent with the systemic disadvantage hypothesis, the omnibus for the first half of the math test was not significant $F(2, 116) = .54$, $p = .58$, $\eta^2_p = .009$. Participants in the women-disparaging ($M = 4.53$, $SD = 2.61$), men-disparaging ($M = 4.65$, $SD = 2.13$), and control ($M = 5.08$, $SD = 2.48$) conditions did not differ. Neither the first contrast

$t(114) = 1.02$, $p = .15$ nor the second planned contrast $t(114) = .24$, $p = .41$ reached significance.

Again, although the pattern of mean scores for participants in the refined sample was consistent with the systemic disadvantage hypothesis, the omnibus ANOVA of participants scores on the first half of the math test was not significant $F(2, 90) = .84$, $p = .44$, $\eta^2_p = .018$. Participants in the women-disparaging ($M = 4.59$, $SD = 2.48$), men-disparaging ($M = 4.63$, $SD = 2.11$), and control ($M = 5.27$, $SD = 2.44$) conditions did not significantly differ. The first planned contrast did not reach conventional levels of significance $t(90) = 1.29$, $p=.10$. The second planned contrast was not significant $t(90) = .06$, $p = .48$.

Difficult problems. Finally, because decreases in women's math performance as a function of stereotype or social identity threat tend to occur only on difficult problems under conditions of gender relevance (O'Brien & Crandall, 2003; Spencer, Steele & Quinn, 1999), I further limited the analysis of the first 11 questions to only those for which fewer than half of participants answered correctly (questions 6, 7, 9, and 11).

Including data for all participants, the omnibus ANOVA for the difficult problems on the first half of the math test was not significant $F(2, 116) = .68$, $p = .51$, $\eta^2_p = .012$. Participants in the women-disparaging ($M = .50$, $SD = 1.34$), men-disparaging ($M = .49$, $SD = 1.10$), and control ($M = .78$, $SD = 1.26$) conditions did not significantly differ. Neither the first contrast $t(114) = 1.17$, $p = .12$ nor the second planned contrast $t(114) = -.21$, $p = .51$ reached significance.

Including only participants in the refined sample, the omnibus ANOVA for the difficult problems on the first half of the math test (Figure 4) was not significant, $F(2, 90) = 1.40$, $p = .25$, $\eta^2_p = .030$. However, the first planned was significant, $t(90) = 1.67$, $p = .05$ indicating that women in the gender-disparaging joke conditions scored lower on the most difficult problems on the first half of the exam. The second planned contrast was not significant $t(90) = -.10$, $p = .54$.
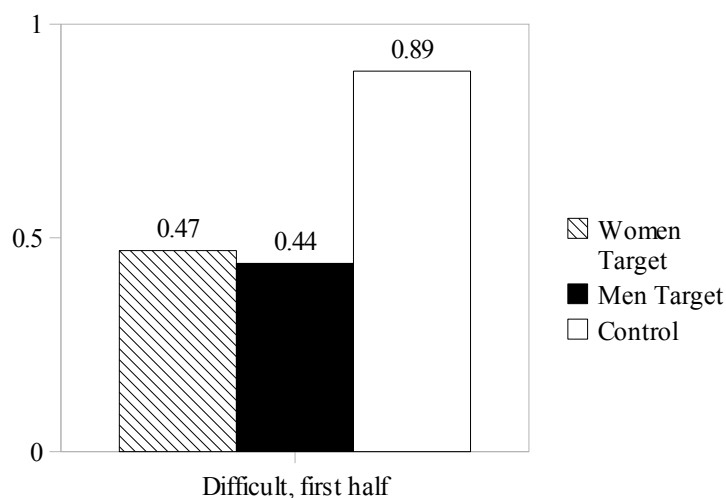
Figure 4: Scores on the difficult questions of SAT math exam, refined sample.

Overall, results for the math test provide no evidence for the local advantage hypothesis, which holds that only women-disparaging jokes, but not men-disparaging jokes, harm women's math test performance. In contrast, the pattern of mean scores on the math test is consistent with the systemic disadvantage hypothesis, which holds that gender disparagement humor is harmful for women's math test performance regardless of whether women or men are the target of that humor. However, because

the test of the corresponding contrast reaches conventional levels of statistical

significance only among participants in the refined sample for a subset of difficult

problems, evidence for the systemic disadvantage hypothesis remains weak.

Word Completion

Self-doubt. Including data for all participants, the omnibus ANOVA for number

of self-doubt words did not reach significance $F(2, 114) = 1.36, p = .26, \eta^2_p = .023$.

The first planned contrast (that participants in the women and men disparaging

conditions would have higher scores than the control) did not reach significance,

$t(114) = -1.64, p = .95$. The second planned contrast (that participants in the women-

disparaging condition would have higher scores than participants in the men-

disparaging condition) $t(114) = -.20, p = .58$ did not reach significance.

Including data from only participants in the refined sample, the omnibus ANOVA

showed no differences by condition for number of self-doubt words participants

completed out of a possible six $F(2, 90) = 1.16, p = .32, \eta^2_p = 025$. Neither the first

planned contrast $t(90) = -1.49, p = .93$. nor the second planned contrast $t(90) = -.32,$

$p = .62$. reached standard levels of significance (see Table 4 for means). Moreover, to

the extent that means in the gender-disparaging conditions differ from the control,

they do so in the opposite direction of the systemic threat hypothesis and in no way

support the local advantage hypothesis.

A speculative explanation for this unexpected pattern is the framing of the word

completion measure as a word completion test. This framing may have boosted

women's confidence in the gender-disparaging conditions, to the extent that gender was salient in the context of a verbal relevant test. This salience may be especially relevant for boosting women's confidence in comparison to the math test they previously completed. An investigation of this explanation awaits future research.

Table 4: Proportion of self-doubt and feminine words completed

	Women-disparaging	Men-disparaging	Control
All participants			
self-doubt	.76 (.89)	.80 (.70)	1.06 (.95)
feminine	1.86 (1.36)	1.77 (1.24)	1.58 (1.08)
Refined sample			
self-doubt	.73(.94)	.81(.75)	1.06(.98)
feminine	1.77(1.41)	1.81(1.28)	1.59(1.10)

Feminine. Including data from all participants, the omnibus ANOVA for number of feminine words did not reach significance $F(2, 114) = .50, p = .61, \eta^2_p = .009$. The first planned contrast (that participants in the women and men disparaging conditions would score higher than participants in the control) did not reach significance, $t(114) = .95, p = .17$. The second planned contrast (that participants in the women-disparaging condition would score higher than participants in the men-disparaging condition) $t(114) = .34, p = .37$ did not reach significance.

Including only participants in the refined sample, the omnibus ANOVA showed no differences by condition for the number of feminine words participants completed $F(2, 90) = .25, p = .78, \eta^2_p = .006$. Neither the first planned contrast $t(90) = .70, p = .$

24. nor the second planned contrast $t(90) = -.12$, $p = .55$. reached conventional levels of significance (see Table 4 for means). In general, participants completed very few feminine related words out of a possible twelve. *Post-test Questionnaire*

Self ratings. Means for participants' self ratings of performance, effort, and importance appear in Table 5. Including all participants, the omnibus ANOVA of self-reported performance on the math test revealed no differences $F(2, 113) = .47$, $p = .63$, $\eta^2_p = 008$. Neither the first planned contrast (that participants in the gender-disparaging conditions would report lower performance than the control) $t(113) = -.68$, $p = .75$ nor the second planned contrast (that participants in the women-disparaging condition would report lower performance than the control) reached significance $t(113) = .66$, $p = .25$.

Including only participants in the refined sample, women's ratings of their own performance on the math test revealed no differences $F(2, 89) = .94$, $p = .39$, $\eta^2 p = 021$. Neither the first planned contrast $t(89) = -.63$, $p = 73$ nor the second planned contrast reached significance $t(89) = 1.22$, $p = .11$.

Including data from all participants, an omnibus ANOVA of effort on the math test revealed no differences $F(2, 114) = .07$, $p = .93$, $\eta^2_p = .001$. Neither the first planned contrast $t(114) = .37$, $p = .36$ nor the second planned contrast $t(114) = .09$, $p = .46$ reached significance.

Including data from participants in the refined sample, an omnibus ANOVA of effort on the math test revealed no differences by condition $F(2, 90) = .06$, $p = .95$,

η^2p = .001. Neither the first planned contrast $t(90)$ =.29, p = .39 nor the second

planned contrast $t(90)$ = .17, p = .43 reached significance.

Including data from all participants, the omnibus ANOVA of participants ratings

of the importance of the math test did not reach significance $F(2, 114)$ = .32, p= .73,

η^2_p = .006. Neither the first planned contrast $t(114)$= -.48, p = .68 nor the second

planned contrast $t(114)$ = -.65, p = .74 reached significance.

Including participants in the refined sample, the omnibus ANOVA of women's

ratings of the importance of the math revealed no differences $F(2, 90)$ = .41, p= .67,

η^2p = .009. Neither the first planned contrast $t(90)$= -.90, p= .82 nor the second

planned contrast $t(90)$ = .01, p= .50 reached significance. Overall it appears that

participants' self-reports of performance and effort on the math test as well as their

ratings of the importance of the math test did not differ by condition.

Group comparison. To examine the questions regarding the gender which

participants rated as better at math and word completion tests, I subtracted the

midpoint (4, on a 1 to 7 scale) from each participant's ratings. Thus scores at 0

indicate participants rated men and women as performing equally well, scores below

0 indicate a rating that men do better than women, and scores above 0 indicate a

rating that women do better than men (Table 5).

Using these midpoint centered scores I performed one-sample t-tests that

compared participants ratings to 0. Including data from all participants, women

indicated that they thought men do better than women on the math test (*M*= -.48, *SD*

=1.22), $t(115) = -4.26$, $p <.01$. An omnibus ANOVA comparing conditions with the midpoint centered scores revealed no significant differences in participants' ratings of men's math performance relative to women's $F(2, 115) = .71$, $p = .50$, $\eta^2_p = .012$. Neither the first planned contrast (that participants reported lower ratings, indicating the belief that men do better on math tests, in gender-disparaging conditions relative to the control) $t(113) =.85$, $p = .20$ nor the second planned contrast (that participants reported lower ratings in the women-disparaging condition than in the control), $t(113) = -.80$, $p = .79$ revealed significant differences.

Including only data from participants in the refined sample, women indicated that men do better than women on the math test ($M= -.46$, $SD=1.18$), $t(92) = -3.6$, $p <.01$. An omnibus ANOVA comparing conditions with the midpoint centered scores revealed no significant differences in participants' ratings of men's math performance relative to women's $F(2, 90) = .39$, $p = .68$, $\eta^2_p = .009$. Neither the first planned contrast (that participants in the gender-disparaging condition would have lower scores, indicating men do better than women, than participants in the control condition) $t(90) =.88$, $p = .19$ nor the second planned contrast (that participants in the women-disparaging condition would indicate lower scores than participants in the men-disparaging condition), $t(90) = -.05$, $p = .52$ revealed significant differences. These results suggest that that neither of the gender-disparaging joke conditions affected participants' ratings of women's relative to men's performance on the math test.

I also analyzed participants midpoint centered scores for participants' comparisons of gender group performance on the word completion test. Including data from all participants, women indicated that they thought men do worse than women on the word completion test ($M = 1.02$, $SD = 1.02$), $t(115) = 10.72$, $p < .01$. An omnibus ANOVA comparing conditions with the midpoint centered scores revealed no significant differences in participants' ratings of men's word test performance relative to women's $F(2, 115) = .45$, $p = .64$, $\eta^2_p = .008$. Neither the first planned contrast $t(113) = .69$, $p = .25$ nor second planned contrast $t(113) = .67$, $p = .25$ revealed significant differences.

Including data from only participants in the refined sample, women indicated that men do worse than women on the word completion test ($M = 1.04$, $SD = 1.01$), $t(92) = 9.96$, $p < .01$. An omnibus ANOVA comparing conditions with the midpoint centered scores revealed no significant differences in participants' ratings of men's word test performance relative to women's $F(2, 90) = .96$, $p = .39$, $\eta^2_p = .021$. Neither the first planned contrast $t(90) = .79$, $p = .22$ nor second planned contrast $t(90) = 1.14$, $p = .13$ revealed significant differences. These results suggest that that neither of the gender-disparaging joke conditions affected participants' ratings of women's relative to men's performance on the word completion test.

Table 5: Mean post-test ratings by condition

	Women-disparaging	Men-disparaging	Control
Self-report:			
All participants			
Performance	3.14 (1.27)	3.33 (1.29)	3.06 (1.29)
Effort	4.11 (1.45)	4.14 (1.29)	4.22 (1.31)
Importance	4.84 (1.71)	4.57 (2.23)	4.53 (1.38)
Refined sample			
Performance	3.10 (1.24)	3.50 (1.28)	3.13 (1.29)
Effort	4.17 (1.46)	4.23 (1.31)	4.28 (1.28)
Importance	4.87 (1.78)	4.87 (2.31)	4.50 (1.44)
Group comparisons:			
All participants			
better on math tests	-.43 (1.46)	-.65 (.92)	-.33 (1.26)
better on word tests	.89 (1.20)	1.05 (.90)	1.11 (.98)
Refined sample			
better on math tests	-.53 (1.31)	-.55 (.96)	-.31 (1.28)
better on word tests	.83 (1.15)	1.13 (.88)	1.16(.99)

Joke funniness effects on performance

Correlations. Because previous research documents the moderating effects of coping sense of humor on stereotype threat (Ford, Ferguson, Brooks, & Hagadone, 2004), I examined the relationship between joke funniness ratings and performance (I report all correlations reported as one-tailed). Including data from all participants, the correlation between mean joke funniness ratings and overall SAT scores was

significant $r = .16$, $p = .04$. The correlation between funniness ratings and the first half of the test problems was also significant $r = .17$, $p = .04$, but the correlation between joke funniness ratings and the difficult, first half of problems was not significant $r = .10$, $p = .15$.

Including data with only participants in the refined sample, correlations between funniness ratings and math test performance were not significant. The relationship between joke funniness ratings and overall SAT score was not significant $r = .09$, $p = .21$. The relationship between joke funniness ratings and the first half of problems was also not significant $r = .12$, $p = 13$. The relationship between joke funniness ratings and the difficult, first half of problems was also not significant $r = .09$, $p = .21$.

Analysis of Covariance. In addition to examining correlations between joke funniness ratings and performance, I also performed analyses of covariance (ANCOVAs) with condition as the independent variable, SAT performance as the dependent variable, and joke funniness ratings as the covariate. Including data from all participants, the ANCOVA model for overall SAT score did not reach significance, $F(3, 116) = 1.42$, $p = .24$; the condition effect was not significant, $F(2, 116) = .58$, $p = .56$; and the covariate effect did not reach conventional levels of significance, $F(1, 116) = 3.13$, $p = .08$. Likewise, the ANCOVA model for the first half of the problems did not reach significance $F(3, 116) = 1.38$, $p = .25$; the condition effect was not significant, $F(2, 116) = .47$, $p = .63$; and the covariate effect

did not reach conventional levels of significance, $F(1, 116) = 3.03$, $p = .08$. Finally, the ANCOVA model for the difficult, first half of the problems did not reach significance $F(3, 116) = .79$, $p = .50$; the condition effect was not significant, $F(2, 116) = .96$, $p = .64$; and the covariate effect did not reach significance, $F(1, 116) = .64$, $p = .53$.

Including data from those participants in the refined sample, the ANCOVA model for overall SAT score did not reach significance $F(3, 92) = .67$, $p = .57$; the condition effect was not significant, $F(2, 92) = .68$, $p = .51$; and the covariate effect did not reach significance, $F(1, 92) = .72$, $p = .40$. Likewise, the ANCOVA model for the first half of the problems did not reach significance $F(3, 92) = .98$, $p = .41$; the condition effect was not significant, $F(2, 92) = .82$, $p = .44$; and the covariate effect did not reach significance, $F(1, 116) = 1.25$, $p = .27$. Finally, the ANCOVA model for the difficult, first half of the problems did not reach significance $F(3, 92) = 1.15$, $p = .33$; the condition effect was not significant, $F(2, 92) = 1.39$, $p = .25$; and the covariate effect did not reach significance, $F(1, 92) = .68$, $p = .41$.

Although funniness ratings correlate with performance with all participants included in analyses, it is unlikely that joke funniness ratings account for the pattern of differences in test performance as a function of joke condition. First, correlations between funniness ratings and performance are not significant among the subset of participants (i.e., the refined sample) for whom effects of joke condition are strongest. Second, joke funniness does not emerge as a significant covariate in ANCOVAs that

assess the effect of joke condition on test performance. Third, overall mean funniness ratings do not differ by joke condition so joke funniness cannot mediate any effect of the joke manipulation on math performance. Finally, although women in the women-disparaging condition did rate jokes as less funny than did women in the men-disparaging condition, women in these conditions both suffered equally strong (but only weakly significant) performance decrements relative to women in the control condition. Thus, the present research provides little evidence for the hypothesis that humor buffers women from the performance-harming effects of identity threat.

DISCUSSION

The purpose of this study was to investigate the harmful consequences of exposure to sexist humor for women's experience in a standardized testing situation. Common accounts of such consequences focus on the ingroup-disparaging nature of sexist humor—for participants in the present study, jokes that disparage women—and its threat to positive distinctiveness within the circumscribed local context. Implicit in this account is the suggestion that outgroup-disparaging humor—for participants in the present study, jokes that disparage men—would not have the same harmful consequences and might even have beneficial consequences. One source of evidence consistent with this account comes from joke ratings. Women found men-disparaging humor significantly less funny than women-disparaging humor. Another source of evidence comes from ratings of career interest. Participants in the men-disparaging condition indicated significantly more interest in a variety of careers, but especially

masculine gendered careers, than did participants in the women-disparaging and control conditions. This pattern suggests some evidence for the local advantage hypothesis because outgroup-disparaging, positive-distinctiveness-inducing humor increased women's interest in masculine careers. However, results for other outcomes provided no evidence for the local advantage hypothesis.

In contrast to common accounts, a sociocultural approach to systemic oppression suggests that the harmful effects of sexist humor may partly lie not in the dynamics of local positive distinctiveness, but instead in the broader meaning of sexist humor in male-dominated domains like math. From this perspective, detrimental effects of sexist humor arise to the extent that they are linked to broader systems of oppression that devalue women and privilege men. One implication of this perspective is that exposure to sexist jokes will have harmful consequences for women, even when the humor disparages the systemically advantaged outgroup (in the present study, men-disparaging jokes).

Evidence for this account comes from two sources. One source is perceptions of unfairness of standardized tests. Participants in the women-disparaging and participants in the men-disparaging conditions rated standardized tests significantly more unfair than participants in the control condition. A second, but relatively weak, source comes from scores on the mathematics test. Participants in the men-disparaging and women-disparaging conditions performed worse than participants in the control condition, although this contrast was significant only among participants

in the refined sample, only for difficult problems on the first half of the test, and only evaluating contrasts using one-tailed probabilities..

Limitations and Future Directions

To my knowledge, this is the first study to examine consequences of exposure to sexist humor on women's experience of a standardized test setting. Results of this initial study provided some evidence that exposure to sexist humor impacts perception of the unfairness of standardized tests and performance on difficult math problems. However, this evidence was limited, especially in the case of math test performance. A conclusive investigation of these ideas awaits additional research.

Besides relatively weak effects, the procedure of the present study had additional limitations that make replication especially desirable. First, analyses excluded numerous participants who failed to recall gender-disparaging jokes or to identify the joke treatment they received despite a prompt describing each condition. While it is not important that participants identify the jokes as negative or sexist it is important that they read and pay attention to the jokes. A future study might adjust the procedure by adding a more impactful manipulation of sexist humor, one that participants will read with greater attention.

Second, I evaluated planned contrasts with relatively liberal, one-tailed tests. While one-tailed tests are acceptable in terms of theory, publication outlets often demand more stringent two-tailed tests (see Furr & Rosenthal, 2003, footnote 1). In

light of publication traditions, one must regard results of the present study—

particularly for career choice and test performance—as especially tentative.

Third, the internal consistency of various composite measures, especially the

masculine career composite, was weak. A future study might expand the career

measure to include a larger number of careers that a consensus of students consider

masculine. Another measure, the feminine and self-doubt word completion measure

produced very little if any results. A more appropriate measure that would not fall

victim to ceiling and floor effects could highlight whether self-doubt and feminine

activation are related to the outcome measures.

Besides further investigation of exposure to sexist humor and its consequences for

women's experience, an important direction for future research is to investigate

consequences for men's experience. Because the present study was an initial attempt

to examine effects of simultaneous privilege and disadvantage on motivation and

performance I chose to include only women participants. However, past research

(Adams et al., 2006) revealed that exposure to a suggestion of a female instructor's

sexism did not harm men's performance on a standardized test, but may instead have

benefited men's performance, relative to men who were not exposed to a suggestion

of sexism. Past research on the rejection identification model also finds that unlike

women, mens psychological well-being is unrelated to perceived discrimination

because the relative meaning of discrimination has little total relevance (Schmitt et al,

2002). Based on these results (Adams et al., 2006; Schmitt et al., 2002) and the results

of the present study, one can hypothesize that men are likely to incur positive outcomes in the domain of performance, or at least be buffered from negative outcomes, as a result of men-disparaging or women-disparaging humor.

A third direction for future research on sexist humor is to measure both domain and gender identification (e.g. Collective Self Esteem, Luhtanen & Crocker, 1992). Previous research emphasizes that level of identification with the targeted group mediates the effects of identity threat (Branscombe et al., 1999; Schmader, 2002). For example, in the present study, one can hypothesize a moderating effect of gender identification such that the effects of gendered humor on career choice, test performance, and perceptions of fairness will be greater for highly identified participants than for less identified participants. Alternatively, one can hypothesize a mediating effect of gender identification. If disparagement humor (whether women-disparaging or in general) threatens women's identity in the math test situation, this effect on identification may mediate effects of the joke manipulation on career choice, test performance, and perceptions of fairness. Adding a measure of gender identification will permit a test of these hypothesis.

In addition to gender identification, future research could also incorporate domain identification. Previous research highlights that detrimental effects on performance outcomes, such as those resulting from stereotype threat, are most impactful for individuals highly identified with the stereotyped domain (Steele et al., 2002). For example, in the present study, one can hypothesize that the effects of gendered humor

on math test performance and perceptions of fairness will be greater for participants highly identified with mathematics. Adding a measure of mathematics identification and recruiting participants with varying levels of mathematics identification will permit a test of this hypothesis.

Theoretical Implications

Despite its preliminary nature and tentative results, the present study helps to illuminate important theoretical questions. I conclude with a consideration of these questions.

Local and Systemic Manifestations of Oppression

Common accounts often imply that expressions of oppression are direct acts of differential treatment or local dynamics of intergroup distinctiveness in bounded situations. In contrast, a sociocultural approach suggests that detrimental effects of oppression are not limited to direct acts of differential treatment or local dynamics of distinctiveness. Instead, broader awareness of systemic oppression can cause harm, even in situations which hostile discrimination is absent and that afford local positive distinctiveness. Results of the present study provide tentative evidence consistent with this account.

This pattern—that relatively distal implications of broader systemic forces might have more impact in determining the effects of sexist humor on perceptions of fairness and performance outcomes than the proximal impact of outgroup derogation or ingroup favoritism on positive distinctiveness—is noteworthy to the extent that it

contradicts conventional wisdom in social psychology and society at large. That is, conventional wisdom suggests that proximal forces should exert greater influence on outcomes than distal forces. Within social psychology, social impact theory (Latané, 1981) postulates that the impact of social forces on a target should be a function of the strength, immediacy, and number of those forces. In contrast, the present study follows the constructivist tradition of social psychology (Ross & Nisbett, 1991), which holds that the impact of social forces is not just about strength, immediacy, and number, but also their subjective meaning. What a sociocultural perspective adds to constructivist perspectives in social psychology is a focus on the broader meanings that people apply to make sense of events in the circumscribed, experimental setting.

Implications for Different Outcomes

One idea that emerges from the present study is that the relative impact of local and systemic forces may vary depending on the outcome in question. Specifically, motivation and interest may be sensitive to manipulations of local privilege and disadvantage, but intellectual performance may be sensitive to broader systemic manifestations of privilege and disadvantage.

Motivation and interest. The career measure served as a measure of women's interest in pursuing various careers. Results of the career measure indicated that the men-derogating jokes increased women's interest in masculine gendered careers relative to both neither-gender jokes and women-derogating jokes. This suggests that, in regards to motivation and interest within the circumscribed testing situation,

women's experience of local advantage (in the form of positive distinctiveness via outgroup derogation of men-disparaging jokes) can have a greater impact than the broader systemic devaluation implicit in the invocation of sexist humor. However, considering the impact of local forces, it is important that women-disparaging humor did not appear to decrease women's interest in careers relative to the control.

This pattern—relatively greater impact of local rather than systemic forces on experience of motivation and interest—is consistent with previous research comparing local and systemic manifestations of privilege and disadvantage (Adams et al., 2006). Men reported lower comfort in response to a local manifestation of disadvantage (exposure to the suggestion of a female instructor's sexism), just as women in the present study reported greater interest in masculine careers in response to a local manifestation of privilege.

Performance outcomes. In contrast to motivation and interest outcomes, performance related outcomes suggested a different pattern of results. Ratings of unfairness of standardized tests and the math test served as measures of women's performance related outcomes. Results of the unfairness ratings suggested that the men-derogating and women-derogating jokes increased women's perception of the trickiness of standardized tests relative to the control jokes. The pattern of results for the standardized math test suggested the men-derogating and women-derogating jokes decreased women's performance on the more difficult math problems relative to the control. Together this pattern of results suggests that, in regards to performance

related outcomes, women's experience of systemic disadvantage may have a greater impact than the local circumscribed context.

This pattern—greater impact of systemic forces rather than local forces on intellectual performance outcomes—is also consistent with previous research comparing local and systemic manifestations of privilege and disadvantage (Adams et al., 2006). Men exposed to the suggestion of a female instructor's sexism were apparently buffered from performance detriments as a result of the systemic context, just as women in the present study incurred negative performance outcomes as a result of the systemic context, namely increased ratings of unfairness of standardized tests and decreased performance.

What is the explanation for the differential effects of local and systemic forces. Perhaps the differential effects result from the relatively explicit nature of the outcomes. Specifically the more explicitly controlled motivational measures, such as ratings of career interest and comfort, may be more sensitive to the impact of the local context. However the less explicitly controlled performance measures, such as the math and logic test scores, may be more sensitive to the impact of the systemic context.

Whatever the explanation for the differential effect of the joke manipulation on different outcomes, it suggests an ironic conclusion. The same humor that increases women's interest and motivation to pursue masculine careers—that is, men-disparaging jokes—may also decrease performance on the math test. To the extent

that interest and motivation to pursue masculine gendered careers is related to identification in those career domains, this finding appears similar to research on stereotype threat. Stereotype threat research reveals that those individuals most identified with the testing domain are most affected by stereotype threat (Steele, 2002). However in this case of sexist humor, the motivation was a momentary situational increase in interest rather than long-term domain identification.

Broader Implications

An important implication of the present research is that even apparently positive treatment, such as men-disparaging humor, can have negative effects on performance because such treatment is understood in terms of the larger sociocultural climate beyond the local situation. This is an important implication since many conceptions of sexism locate oppression in relatively individualistic terms. Because such atomistic conceptions fail to locate the roots of oppression and fail to point out the full impact of oppression they are also inadequate for reducing oppression. Focusing solely on individualistic forms of oppression leads to omission of its systemic roots and the dangers of excluding a focus on oppression's systemic roots are at least twofold. First, an individualistic focus may lead people to underestimate the full impact of oppression because the impacts of systemic oppression are left out. Second, an individualistic focus may lead people to express less support for policies designed to reduce oppression (Adams et al., 2008; Adams, Edkins, Lacka, & Pickett, 2008). This reduced support for policies may result from underestimation of the effects of

systemic oppression, and therefore underestimation of the need for such policies. However, reduced policy support may also result from lack of systemic understanding of oppression which lead to misunderstanding of how policies designed to ameliorate effects of systemic oppression are to work.

Although positive treatment may have negative effects due to the larger sociocultural climate, privileging women in local contexts may be helpful in increasing motivation and interest in careers otherwise considered male-gendered. However the downside of this local privilege is that it may actually harm women's performance. A change in systemic forces, perhaps through an increase in social representations of women in male-gendered fields, is necessary to eliminate sexism and other forms of oppression.

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Appendix A: Joke Funniness rating measures for manipulation of joke disparagement target.

I. Women-disparaging condition

Instructions: We are examining what is considered "funny" to students at the University of Kansas. By circling a number on the scale provided please rate YOUR opinion of the following statements.

1.   A professor was administering a big test one day to the class. After handing out all of the tests the professor waited at the front desk. Once the test was over, the students all handed the tests back in. The professor noticed that one of the students had attached a $100 bill to their test with a note saying "A dollar per point." The next class the professor handed the tests back out. The student got back the test and $56 change.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

2.   Q: Why did the Martian lawyer go to court?
        A: To settle a space suit.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

3.   TIPS TO IMPROVE YOUR WRITING
        (1) Eliminate quotations. As Ralph Waldo Emerson said, "I hate quotations. Tell me what you know."
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (2) Don't be redundant; don't use more words than necessary; it's highly superfluous.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (3) One-word sentences? Eliminate.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (4) Don't overuse exclamation marks!!!
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (5) Last but not least, avoid cliches like the plague; They're old hat; seek viable alternatives.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

4.   A couple was arrested in the parking lot of a large mall in Lakeland, Fla., just before Christmas when, attempting to steal an automobile at random, they tried to break into a police van containing three officers on a stakeout.
Not at all funny 1   2   3   4   5   6   7 Extremely funny

5.   Q: How do you know when a woman is about to say something smart?
        A: When she starts her sentence with "A man once told me ...."
Not at all funny 1   2   3   4   5   6   7 Extremely funny

6.   Q: What do you call cheese that is not yours?
        A: Nacho (not yo) cheese.
Not at all funny 1   2   3   4   5   6   7 Extremely funny

7.   WHAT A WOMAN REALLY MEANS WHEN SHE SAYS…
        (1) 'It would take to long to explain.'
        Really means… 'I have no idea how it works.'
Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (2) 'Uh huh,' 'Sure, honey,' or 'Yes, dear. '
        Really means…Absolutely nothing. It's a conditioned response.
Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (3) 'I'm getting more exercise lately. '
        Really means… 'The batteries in the remote are dead. '
Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (4) 'Thanks'
        Really means… She is thanking you. Don't show your surprise just say you're welcome.
Not at all funny 1   2   3   4   5   6   7 Extremely funny

II. Men-disparaging condition

Instructions:We are examining what is considered "funny" to students at the University of Kansas. By circling a number on the scale provided please rate YOUR opinion of the following statements.

1.   A professor was administering a big test one day to the class. After handing out all of the tests the professor waited at the front desk. Once the test was over, the students all handed the tests back in. The professor noticed that one of the students had attached a $100 bill to their test with a note saying "A dollar per point." The next class the professor handed the tests back out. The student got back the test and $56 change.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

2.   Q: Why did the Martian lawyer go to court?
        A: To settle a space suit.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

3.   TIPS TO IMPROVE YOUR WRITING
        (1) Eliminate quotations. As Ralph Waldo Emerson said, "I hate quotations. Tell me what you know."
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (2) Don't be redundant; don't use more words than necessary; it's highly superfluous.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (3) One-word sentences? Eliminate.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (4) Don't overuse exclamation marks!!!
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

        (5) Last but not least, avoid cliches like the plague; They're old hat; seek viable alternatives.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

4.   A couple was arrested in the parking lot of a large mall in Lakeland, Fla., just before Christmas when, attempting to steal an automobile at random, they tried to break into a police van containing three officers on a stakeout.

Not at all funny 1   2   3   4   5   6   7 Extremely funny

5.   Q: How do you know when a man is about to say something smart?
A: When he starts his sentence with "A woman once told me ...."
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

6.   Q: What do you call cheese that is not yours?
          A: Nacho (not yo) cheese.
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

7.   WHAT A MAN REALLY MEANS WHEN HE SAYS…
          (1) 'It would take to long to explain. '
          Really means… 'I have no idea how it works. '
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

           (2) 'Uh huh, ' 'Sure, honey, ' or 'Yes, dear. '
          Really means…Absolutely nothing. It's a conditioned response.
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

          (3) 'I'm getting more exercise lately. '
          Really means… 'The batteries in the remote are dead. '
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

          (4) 'Thanks'
          Really means… He is thanking you. Don't show your surprise just say you're
welcome.
     Not at all funny 1   2   3   4   5   6   7 Extremely funny

III. Control condition

Instructions: We are examining what is considered "funny" to students at the University of Kansas. By circling a number on the scale provided please rate YOUR opinion of the following statements.

1. A professor was administering a big test one day to the class. After handing out all of the tests the professor waited at the front desk. Once the test was over, the students all handed the tests back in. The professor noticed that one of the students had attached a $100 bill to their test with a note saying "A dollar per point." The next class the professor handed the tests back out. The student got back the test and $56 change.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

2. Q: Why did the Martian lawyer go to court?
    A: To settle a space suit.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

3. TIPS TO IMPROVE YOUR WRITING
    (1) Eliminate quotations. As Ralph Waldo Emerson said, "I hate quotations. Tell me what you know."
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

    (2) Don't be redundant; don't use more words than necessary; it's highly superfluous.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

    (3) One-word sentences? Eliminate.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

    (4) Don't overuse exclamation marks!!!
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

    (5) Last but not least, avoid cliches like the plague; They're old hat; seek viable alternatives.
    Not at all funny 1   2   3   4   5   6   7 Extremely funny

4. A couple was arrested in the parking lot of a large mall in Lakeland, Fla., just before Christmas when, attempting to steal an automobile at random, they tried to break into a police van containing three officers on a stakeout.

Not at all funny 1   2   3   4   5   6   7 Extremely funny

5.   Q: What do you call a group of chess grandmasters bragging about their recent tournaments in the hotel lobby?
        A: Chess nuts boasting on an open foyer.
        Not at all funny 1   2   3   4   5   6   7 Extremely funny

6.   Q: What do you call cheese that is not yours?
        A: Nacho (not yo) cheese.
        Not at all funny 1   2   3   4   5   6   7 Extremely funny

Appendix B: Career interest measure
Please rate the following careers to the degree that you are likely to consider pursing them. (Note: this list is a subset of possible careers and so many are not included.)1= not at all likely; 7= very likely to pursue.

		not at all likely					*very likely*	
1.	Caseworker F	*1*	*2*	*3*	*4*	*5*	*6*	*7*
2.	Day care center director F	*1*	*2*	*3*	*4*	*5*	*6*	*7*
3.	Employment counselor	*1*	*2*	*3*	*4*	*5*	*6*	*7*
4.	Probation/parole officer M	*1*	*2*	*3*	*4*	*5*	*6*	*7*
5.	Youth counselor	*1*	*2*	*3*	*4*	*5*	*6*	*7*
6.	Psychiatric social worker	*1*	*2*	*3*	*4*	*5*	*6*	*7*
7.	Criminologist	*1*	*2*	*3*	*4*	*5*	*6*	*7*
8.	Child development specialist	*1*	*2*	*3*	*4*	*5*	*6*	*7*
9.	Neuropsychologist	*1*	*2*	*3*	*4*	*5*	*6*	*7*
10.	Stockbroker	*1*	*2*	*3*	*4*	*5*	*6*	*7*
11.	Training specialist N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
12.	Market research analyst	*1*	*2*	*3*	*4*	*5*	*6*	*7*
13.	Systems analyst	*1*	*2*	*3*	*4*	*5*	*6*	*7*
14.	Consumer psychologist N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
15.	Computer programmer M	*1*	*2*	*3*	*4*	*5*	*6*	*7*
16.	Community organizer/ planning specialist	*1*	*2*	*3*	*4*	*5*	*6*	*7*
17.	Relocation worker	*1*	*2*	*3*	*4*	*5*	*6*	*7*
18.	Field health officer	*1*	*2*	*3*	*4*	*5*	*6*	*7*
19.	Health policy planner N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
20.	Teacher (K-12) F	*1*	*2*	*3*	*4*	*5*	*6*	*7*
21.	School psychologist (K-12) F	*1*	*2*	*3*	*4*	*5*	*6*	*7*
22.	School counselor (K-12) F	*1*	*2*	*3*	*4*	*5*	*6*	*7*
23.	Consumer researcher N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
24.	Statistical report writer	*1*	*2*	*3*	*4*	*5*	*6*	*7*
25.	Technical writer	*1*	*2*	*3*	*4*	*5*	*6*	*7*
26.	Media director N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
27.	Public opinion survey worker N	*1*	*2*	*3*	*4*	*5*	*6*	*7*
28.	Attorney	*1*	*2*	*3*	*4*	*5*	*6*	*7*

Appendix C: Pre-test measure of self-handicapping and unfairness of tests

As you know student life is sometimes stressful, and we may not always get enough sleep, etc. Such things can affect cognitive functioning, so it is necessary to ask how prepared you feel.

1. How many hours did you sleep last night?   _____ hours

2. How able to focus do you feel?

1	*2*	*3*	*4*	*5*	*6*	*7*
unable to						very able
focus at all						to focus

3. How much stress have you been under lately?

1	*2*	*3*	*4*	*5*	*6*	*7*
no stress						very much
at all						stress

4. How tricky/unfair do you typically find standardized tests?

| *1* | *2* | *3* | *4* | *5* | *6* | *7* |
| not at all | | | | | | very |
| tricky / unfair | | | | | | tricky / unfair |

Appendix D: SAT math test

Math Test

Directions: Solve each problem and decide which is the best of the given choices. Circle the letter of the correct answer. You have 25 minutes to complete this test.

1. If $2x + y = 19$ and $x - y = 5$, what is y?
   a. 3
   b. 5
   c. 8
   d. 13
   e. 19
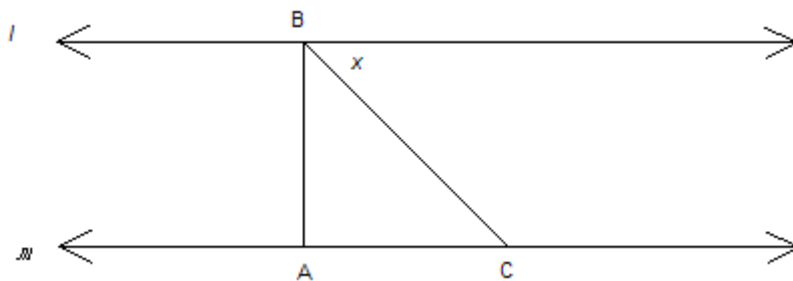
2. In the figure above, $l \| m$ and $\triangle ABC$ is an isosceles right triangle. What is $<x$?
   a. 15°
   b. 30°
   c. 45°
   d. 60°
   e. 90°

3. Point P is at (-5, 17) and point Q is at ($4\sqrt{3}$, 6). How many lines can you draw that pass through both point P and point Q?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
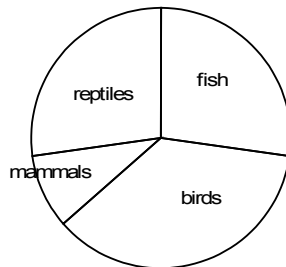
4. The figure above shows the overall holdings of a zoo. The zoo has the same number of reptiles and fish, 20 mammals, and four times as many birds as mammals. If the number of reptiles is ¾ the number of birds, how many fish are in the zoo?

    a. 20
    b. 40
    c. 60
    d. 80
    e. 100

5. The sum of four consecutive prime numbers is 72. What is the smallest of these numbers?

    a. 2
    b. 11
    c. 13
    d. 19
    e. 23
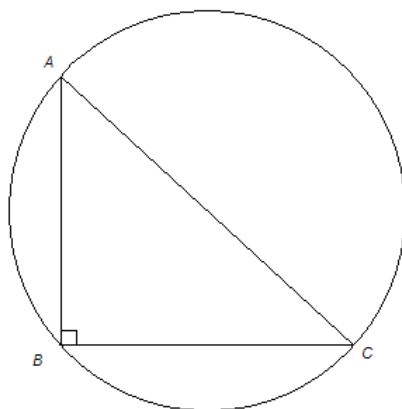
6. In the figure above, AB = 4 and BC = 3. The center of the circle lies on line AC. What is the circumference of the circle?
   a. 3π
   b. $3\pi^2$
   c. 4π
   d. 5π
   e. $5\pi^2$

7. The mean of a set of 10 numbers is 18. When you remove the smallest 3 of these numbers, the mean of the remaining numbers is 22. What is the sum of the smallest 3 numbers?
   a. 9
   b. 10
   c. 18
   d. 22
   e. 26

8. Define $f(x, y) = x^2 - xy$. For which of the below values of x and y is $f(x, y)$ the largest?
   a. $x = 3, y = -3$
   b. $x = 3, y = 3$
   c. $x = -3, y = 0$
   d. $x = -3, y = -3$
   e. $x = 0, y = 3$
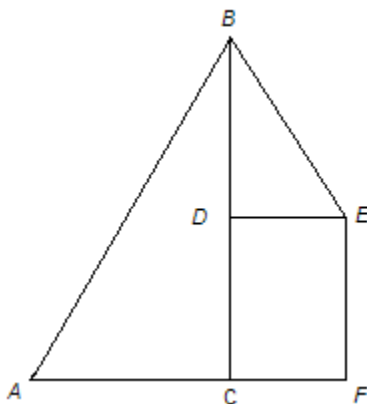
Note: Figure not drawn to scale.

9. In the figure above, ΔABC and ΔEBD are similar triangles. BD = CD = 1 and
   AC = 1.5. What is the area of rectangle CDEF?
   - a. .5
   - b. .75
   - c. 1
   - d. 1.5
   - e. 2.25

10. A jar contains a mix of black beans and white beans. There are 16 white beans
    in the jar. When you reach into the jar and draw out a bean at random, the
    probability of drawing a black bean is 75%. How many total beans are in the
    jar?
    - a. 8
    - b. 12
    - c. 16
    - d. 32
    - e. 64

11. Define ♪ as follows: x ♪ y = | x − y |. If 3 ♪ z = 5 and z ♪ w = 2, which of these
    is a possible value for w?
    - a. -5

    b. -4
    c. -2
    d. 5
    e. 8

12. Let $f(x) = x^2 + ax + b$. If the zeroes of this polynomial are at -4 and -2, what is $f(9)$?
    a. 35
    b. 81
    c. 90
    d. 143
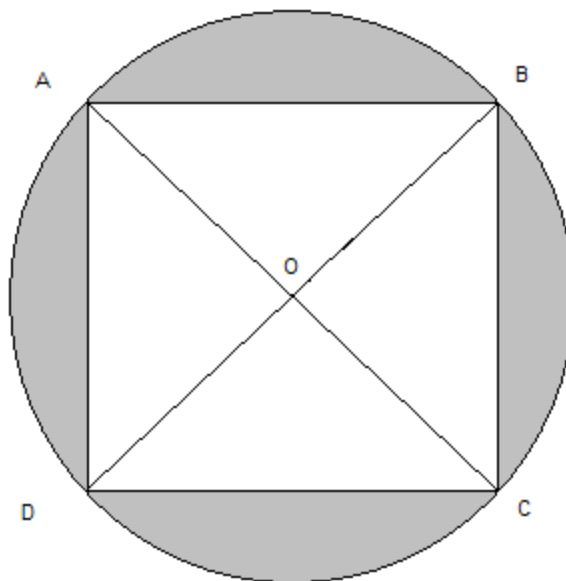   e. 181

13. A fair coin is tossed eight times. What is the probability that only one of the tosses will come up heads?
   a. 1/256
    b. 1/64
    c. 1/32
    d. 1/16
    e. 1/8

14. *m* is 250% of *n*, and 15% of *n* is 45. What is 12% of *m*?
    a. 12
    b. 30
    c. 90
    d. 120
    e. 450

15. The greatest common factor of the integers *a* and *b* is 7, and the least common multiple of *a* and *b* is 210. The value of *a* is 14. What is the value of *b*?
   a. 7
    b. 14
    c. 35
    d. 105
    e. 210

16. The figure above shows a circle with its center at O with four identical isosceles triangles inscribed in the circle. The distance AB is $2\sqrt{2}$ units. What is the area of the shaded region?
    a. 8
    b. $4/\pi$
    c. $4\sqrt{2}$
    d. $16\pi - 8$
    e. $4\pi - 8$
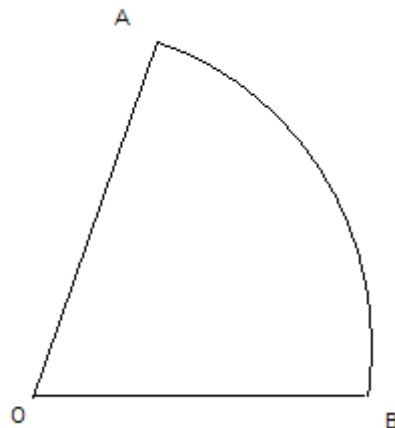
Note: Figure not drawn to scale.

17. In the figure above, OA = 5 and the area of the sector OAB is 5π. What is the length of the arc AB?
    a. 2
    b. 2π
    c. 4
    d. 4π
    e. 5π

18. The summer reading shelf at the library contains 30 books. A student must select three books to read over the summer. How many different sets of three books could the student select?
    a. 6
    b. 812
    c. 4,060
    d. 8,120
    e. 24,360

19. A circle has a diameter that is a positive integer, and an area that is less than 10 units. How many different circles fulfill this condition?
    a. one
    b. two
    c. three
    d. four
    e. five

1983   1984   1985   1986   1987
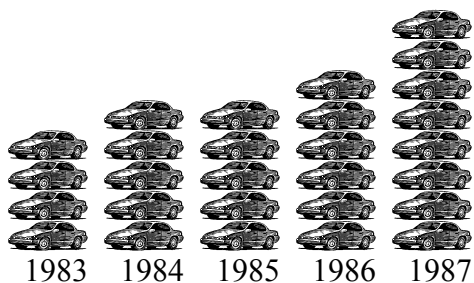
 = 50,000 autos

20. Referring to the figure above, what was the average annual sales growth between 1985 and 1987?
    a.   75,000
    b.   50,000
    c.   40,000
    d.   25,000
    e.   10,000

21. The union of sets A and B is {1, 3, 7, 11, 14, 17, 22}. The intersection of sets *A* and *B* is {7, 11, 22}. Set *A* is {1, 3, 11, 22}. What is set *B*?
    a.   {7, 11, 22}
    b.   {7, 11, 14, 17, 22}
    c.   {14, 17, 22}
    d.   {14, 17}
    e.   {1, 3, 7, 22}

22. Lines *l* and *m* are parallel and intersect the y axis two units apart from each other. The equation of line *l* is $y = -2x + 4$. Which of these could be the equation of line *m*?
    a. $y = -\frac{1}{2}x + 4$
    b. $y = \frac{1}{2}x + 4$
    c. $y = 2x + 2$
    d. $y = 2x - 2$
    e. $y = x + 4$

Appendix E: Word completion measure

<div align="center">Word Generation Test</div>

Directions: Write letters in the provided blanks to form complete words. Use all of the blanks when forming each word. Only complete one word per problem. It should take about 5 seconds per word.

1.   _ _ _ A N
2.   S _ _ T E _
3.   _ _ _ S I V E
4.   _ I N K
5.   S H A _ _
6.   G _ _ L
7.   _ I F E
8.   F A _ _
9.   D _ L _
10.   F _ _ _ L E
11.   L O _ _ _ _
12.   S _ F _
13.   D U _ _
14.   _ _ _ _ C A T E
15.   _ A R D
16.   _ _ _ R T
17.   _ _ I D E
18.   *W* _ _ *K*

Appendix F: Post test questionnaire of self ratings and group comparisons

POST TEST QUESTIONAIRE

Now that you have completed the tests, please answer the following questions using the provided scales.

MATH TEST QUESTIONS:

1. Compared to other KU students, how would you rate your performance on the math test?

1	*2*	*3*	*4*	*5*	*6*	*7*
extremely poor						*extremely excellent*

2. How much effort did you apply to the math test?

1	*2*	*3*	*4*	*5*	*6*	*7*
very little						*very much*

3. How important is it to you that you perform well on tests like the math test?

1	*2*	*3*	*4*	*5*	*6*	*7*
not at all important						*extremely important*

WORD COMPLETION TEST QUESTIONS:

4. Compared to other KU students, how would you rate your performance on the word completion test?

1	*2*	*3*	*4*	*5*	*6*	*7*
extremely poor						*extremely excellent*

5. How much effort did you apply to the word completion test?

1	*2*	*3*	*4*	*5*	*6*	*7*
very little						*very much*

6. How important is it to you that you perform well on tests like the word completion test?

1	*2*	*3*	*4*	*5*	*6*	*7*
not at all important						*extremely important*

7. Who do you think generally performs better on <u>MATH</u> tests like the one you completed?

a)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

English majors   *Psychology majors*

b)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

KU students   *K-State Students*

c)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

High school math teachers   *Engineers*

d)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Men   *Women*

e)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

18 year-olds   *58 year-olds*

8. Who do you think generally performs better on <u>WORD COMPLETION </u>tests like the one you completed?

a)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

English majors   *Psychology majors*

b)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

KU students   *K-State Students*

c)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

High school math teachers   *Engineers*

d)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Men   *Women*

e)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

18 year-olds   *58 year-olds*