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ATTRIBUTIONAL ERRORS AND GENDER STEREOTYPES: PERCEPTIONS OF MALE AND FEMALE EXPERTS ON SEX-TYPED MATERIAL

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ABSTRACT

Observers frequently commit the fundamental attribution error by failing to make adequate allowance for contextual influences in favour of dispositional explanations. The present experiment tested whether people would attribute a quizmaster's knowledge of the quiz topic to personal factors (personally knowing the answers) or to situational factors (reading the answers), and whether this varied by the gender of the topic. Participants listened to a staged quiz show that varied the sex of the quizmaster (male or female) and the stereotypical gender of the quiz topic (masculine or feminine). When the topic was masculine, female quizmasters were rated as having less knowledge and expertise. Male participants rated female quizmasters as less knowledgeable than male quizmasters, regardless of the topic.

INTRODUCTION

While waiting for a car to exit a parking space, the driver will feel frustrated when a third car rushes in to intercept the vacancy, prompting the formation of attributions or explanations for the other driver's behaviour (Ross, 1977); we typically settle for the quick dispositional conclusion (e.g., rudeness) vs. the more intricate situational elements (e.g., a late interview). Our inclination to overemphasize dispositional factors and underestimate situational factors when explaining an actor's behaviour is called the *fundamental attribution error* because of its prevalence (e.g., Hilton, Smith, & Kim, 1995; Miller, Ashton, & Mishal, 1990; Ross, Amabile, & Steinmetz, 1977; Sumpton & Gregson, 1981). The present study examined the contexts in which these attributional conclusions are reached when estimating the confidence we have in a male or female's expertise in traditionally masculine or feminine topics.

Observers' inadequate allowance for the effects of situational and contextual variables on behaviour when drawing inferences about actors may have several possible causes (Gilbert &

Malone, 1995). To begin, the observer may lack an awareness of the situational constraints placed on people. For example, if an observer is unaware that an individual has been given the answers to a quiz prior to testing, the observer cannot take this situational factor into account when formulating attributions for the actor's performance. Moreover, observers may hold unrealistic expectations of how that situation should influence the actor's behaviour, often underestimating the power of situational constraints. This is true for an actor's latent personal knowledge on a particular topic, which remains unknown to the observer. Furthermore, observers may lack the motivation or capacity to adequately correct the initial dispositional inference they impulsively made about the actor. Lastly, the behaviour itself may be so salient that it makes the situation and its influence near invisible.

The perseverance of the fundamental attribution error in spite of explicit emphasis on contextual causes gives evidence to its strength (Jones, 1979); that is, behaviour becomes more salient than situational antecedents (Gilbert & Malone, 1995)

The present study utilizes the same quiz format of Ross, Amabile, and Steinmetz's (1977) research that examined the fundamental attribution error and its perseverance in spite of obvious situational constraints. Their participants were randomly assigned to either the role of questioner or contestant. Questioners created difficult questions that displayed their own expertise, which guaranteed the questioners' knowledge of the answers. Questioners then asked their questions to contestants who (with little surprise) performed quite poorly. Results showed that despite explicit knowledge of the questioners' role-conferred knowledge advantage, they were still perceived as significantly more knowledgeable than contestants by each of three raters: contestants, questioners, and general observers. Therefore, even social roles may be regarded as situational factors that influence both performance and the presumptions made based on that performance (see also Sumpton & Gregson, 1981).

However, a recent study by Gawronski (2003), demonstrated that when participants were required to consider the difficulty of the questions, contestants of a quiz show were perceived as being more knowledgeable when they incorrectly answered difficult questions vs. easy questions; this also affected inferences made for the quizmaster. This finding supports the assumption that when perceivers have the appropriate motivation and cognitive capacity, they may consciously consider situational factors when attributing personal traits to an actor.

Availability Heuristic and Gender Stereotypes

Closely linked to the fundamental attribution error is the availability heuristic, involving (Blair, 2002; Tversky & Kahneman, 1973) judgments as to the likelihood of an event based on the ease with which related events come to mind. With respect to the fundamental attribution error, one's own thoughts, feelings, and motives are more readily available compared to those of others'. Consequently, people are prone to make errors when attributing the behaviours of others. Furthermore, when making such evaluations of complex events, only the simplest and most available scenarios are likely to be considered. Thus, a simple dispositional attribution is more readily available than a complex consideration of the numerous situational constraints involved.

In addition, the availability heuristic can be applied to the existence and perpetuation of stereotypes (Tversky & Kahneman, 1973). Specifically, members of a particular group are used to draw conclusions as to the relative likelihood they will engage in a given behaviour or assume a given role. This likelihood is evaluated by the degree to which those members are representative of the stereotypical behaviour, making them increasingly relevant and available. For example, the perceived likelihood that a woman will occupy a homemaker role is evaluated by the degree to which a homemaker is stereotypically female (Helgeson, 2005).

Gender stereotypes impact both how people perceive roles and those individuals who occupy those roles (Garnham, Oakhill, & Reynolds, 2002). Indeed, a mismatch between (a) the stereotypical gender associated with a role name (e.g., male plumbers and female housekeepers) and (b) subsequent gender-biased information (e.g., a female wearing a tie or a man wearing a bikini) is judged less favourably than when a match occurs.

Males and females too tend to differ in the attributions they make regarding individuals of either gender. People are likely to maintain more favourable attributions with regard to actors of the same sex than of the opposite sex. In one study, male participants attributed occupational attainment more to ability of a male actor than a female actor; however, female participants did not view males as any more capable than females (Feldman-Summers & Kiesler, 1974). By virtue of an in-group bias, people generally harbour positive implicit stereotypes toward the group to which they belong, linking the self and in-group to common desirable attributes (Rudman et al., 2001). Consequently, men and women have been found to hold traditional gender stereotypes about their own gender, but in a favourable self-enhancing form. However, there is some evidence that women suffer in our society from such gender attributional processes. Feldman-Summers and Kiesler (1974) found not only that participants expected men to significantly outperform women on an intellectual task; but that with respect to various occupational roles (i.e., pediatrician, surgeon, child psychologist, diagnostician, writer, etc.), there was not one occupation in which women were expected to be more successful than men.

Status Characteristics Theory and Gender

Expectations of competence are also heavily influenced by a person's status, according to status characteristics theory (e.g., Berger, Rosenholtz, & Zelditch, 1980; Kalkhoff & Barnum, 2000). This theory focuses on the influence of status on a person's expected ability at a task and is often examined in collectively-oriented situations in which a decision must be made. Although the experimental conditions for this theory are different from that of the present study, its implications are important.

A status characteristic can be defined as any characteristic that allows a person to form an evaluation regarding another person's competence (Berger, Rosenholtz, & Zelditch, 1980). Status characteristics are classified into two categories: specific and diffuse. Specific status characteristics refer to a person's competence or ability at a specific task (e.g., mathematical ability), whereas diffuse status characteristics (e.g., gender and race) refer to a person's competence through cultural expectations or stereotypes. For example, men are assumed to be better mechanics and women are expected to be better at nurturing (Kalkhoff & Barnum, 2000).

The more relevant a characteristic is to a specific task, the more it will impose influence on an observer (Oldmeadow, Platow, Foddy, & Anderson, 2003).

In relation to gender, this theory posits that if the sex of a person matches the gender of a task, this person would be expected to have a higher level of competence at that task (Wagner & Berger, 1997). This person would, therefore, be perceived as having higher status among the group and consequently, would exert a stronger influence over lower-status observers (Kalkhoff & Barnum, 2000). In relation to the present study, a quizmaster would be judged as having a higher status, therefore, being more competent, if the topic gender and quizmaster sex match.

Present Study and Hypotheses

The present study was based on the quiz show format used previously (Ross et al., 1977; Sumpton & Gregson, 1981), however, we assessed the perceptions of observers (so that the quizmaster and three contestants were all confederates). To test the possible effect of gender stereotypes on the attribution process, the quizmaster sex (male or female) and quiz topic gender (masculine or feminine) were varied. Based on previous findings, it was hypothesized that a three-way interaction would emerge, wherein the quizmaster would be perceived as significantly higher in topic knowledge and expertise (i.e., an internal attribution) when each of participant sex, quizmaster sex, and quiz topic gender were comparable (viz. a male participant rating a male quizmaster's knowledge in a traditionally masculine domain such as sports; cf. Bond & Deming, 1982; Feldman-Summers & Kiesler, 1974; Ross et. al., 1977).

METHOD

Participants and Design

There were 52 male and 76 female undergraduate psychology students between the ages of 17 and 41 years ($M = 21.33$, $SD = 2.79$) who volunteered to participate by signing a form located in the psychology department at the University of Windsor in Southwestern Ontario, Canada. Participants were awarded one bonus point in their psychology course as compensation for their involvement.

Male and female participants were assigned to a 2 x 2 x 2 factorial design that included three factors: participant sex (subject variable), quizmaster sex (male or female), and quiz topic gender (male: football; or female: footwear fashion); the latter two variables were randomized.

Materials

Specific questions within the two quiz show dialogues were chosen from a football quiz website (e.g., "Which legendary NFL running back was the first rusher in NFL history to gain 2,000 yards in one season?"); footwear fashion trivia was chosen from material on a shoe website (e.g., "By how many inches do shoe sizes differ in Britain?"). Six questions were asked in each dialogue to which none of the contestants correctly answered, and the quizmaster supplied the correct response. An audio recording was made of the two dialogues by four confederates (either

a male or female quizmaster, and three contestants) on a standard cassette player. In total, four audio tapes were constructed, one for each of the four experimental conditions.

Photographs of people (between 20 and 25 years) were chosen from talent websites to represent the five voices heard on the audio recordings. The 12.5 cm. x 15.5 cm. photographs were centered and laminated on a white 21.5 cm. x 28 cm. page. Four of these photographs (one quizmaster and three contestants) were mounted on the wall to serve as a visual aid for participants as they listened to the audio recording.

A survey was created by the authors to measure participants' attitudes toward the quizmaster, as well as the attributions they had made regarding the quizmaster's performance. Participants rated the quizmaster's level of (a) knowledge, (b) expertise, and (c) intelligence using a five-point Likert scale (where higher scores signified greater endorsement). Finally, a manipulation check was included to ensure that both the sex of the quizmaster and the quiz topic were correctly noted by participants.

Procedure

Same-sex groups consisting of five to twenty individuals participated at a given time. The experimental room included a cassette player and four photographs mounted on the wall, appropriately labeled "Quizmaster," "Contestant #1," "Contestant #2," and "Contestant #3." The photograph of the quizmaster was either male or female whereas the photographs of the three contestants (one male and two females) were consistent across all conditions.

Following informed consent, participants were told they would be listening to an audio recording of a quiz show involving the people pictured on the wall, following which they would complete a survey assessing their perceptions of the individuals in the quiz show. The experimenter then played one of the four audiotapes, which corresponded to the sex of the quizmaster photograph mounted on the wall for that particular condition. Surveys were then administered to participants, containing questions assessing quizmaster knowledge, expertise, and intelligence. Participants were then verbally debriefed about the hypothesis.

RESULTS

Based on a correlational analysis of the dependent measures (with a significance level of 0.05 for all analyses), results showed that perceived knowledge was moderately correlated with perceived expertise, $r(126) = 0.63$, $p < 0.001$; and significantly but modestly correlated with perceived intelligence, $r(126) = 0.21$, $p = 0.018$. Furthermore, perceived expertise was significantly but modestly correlated with perceived intelligence, $r(126) = 0.33$, $p < 0.001$. Because all dependent measures were at least modestly intercorrelated, it permitted a multivariate analysis of variance (MANOVA) with perceived knowledge, expertise, and intelligence as the dependent variables; and quizmaster sex, participant sex, and topic gender as the independent variables. Results showed that the MANOVA was not significant with respect to the hypothesized three-way interaction among the independent variables ($p > 0.05$). However, there was a significant multivariate main effect for quizmaster sex: Wilks' Lambda = 0.921, $F(3, 118) = 3.36$, $p = 0.021$. In addition, there was (a) a significant multivariate interaction between quizmaster sex

and topic gender, Wilks' Lambda = 0.911, $F(3, 118) = 3.83$, $p = 0.012$; and (b) a significant multivariate interaction between quizmaster sex and participant sex, Wilks' Lambda = 0.927, $F(3, 118) = 3.11$, $p = 0.029$.

Follow-up univariate analyses of variance (ANOVAs) showed comparable main effects and interactions for both perceived knowledge and expertise but not perceived intelligence ($p > 0.05$). As a result, no further testing of perceived intelligence was pursued. For the quizmaster sex main effect, ANOVAs were significant for perceived knowledge, $F(1, 120) = 7.84$, $p = 0.006$; and expertise, $F(1, 120) = 4.51$, $p = 0.036$. Mean inspections showed that male quizmasters were perceived to have more knowledge and expertise ($M_s = 3.35$ and 2.68 , $SD_s = 1.02$ and 1.21 , respectively) than female quizmasters ($M_s = 2.81$ and 2.28 , $SD_s = 1.16$ and 1.00 , respectively).

For the quizmaster sex by topic gender interaction, ANOVAs were significant for perceived knowledge, $F(1, 120) = 4.52$, $p = 0.036$; and perceived expertise, $F(1, 120) = 6.875$, $p = 0.010$. To tease apart these interactions, follow-up simple effects tests were conducted, assessing mean differences in one independent variable at each level of the other independent variable. When the quizmaster was male, there was no significant difference in ratings of perceived knowledge based on whether the topic gender was masculine (football) or feminine (footwear fashion); $M_s = 3.41$ and 3.29 , $SD_s = 0.95$ and 1.10 , respectively ($p > 0.05$). However, when the quizmaster was female, ratings of perceived knowledge were significantly higher when the topic was feminine (footwear fashion) versus masculine (football): $M_s = 3.23$ and 2.56 , $SD_s = 1.15$ and 1.19 , respectively; $F(1, 63) = 5.30$, $p = 0.025$. In addition, when the quizmaster was male, there was no significant difference in perceived expertise based on whether the topic gender was masculine (football) or feminine (footwear fashion); $M_s = 2.91$ and 2.52 , $SD_s = 1.12$ and 1.18 , respectively ($p > 0.05$). However, when the quizmaster was female, ratings of perceived expertise were significantly higher when the topic was feminine (footwear fashion) versus masculine (football): $M_s = 2.61$ and 2.00 , $SD_s = 1.09$ and 0.82 , respectively; $F(1, 63) = 6.69$, $p = 0.012$.

For the quizmaster sex by participant sex interaction, ANOVAs were significant for perceived knowledge only, $F(1, 120) = 5.44$, $p = 0.032$. Simple effects tests showed that when quizmaster sex was male, there was no significant difference ($p > 0.05$) in ratings of perceived knowledge from either male or female participants: $M_s = 3.38$ and 3.32 , $SD_s = 0.98$ and 1.06 , respectively. However, when the quizmaster was female, ratings of perceived knowledge were significantly higher from female versus male participants: $M_s = 3.18$ and 2.42 , $SD_s = 1.14$ and 1.17 , respectively, $F(1, 63) = 6.69$, $p = 0.012$.

DISCUSSION

The present study failed to find support for the original hypothesis that a match among each of quizmaster sex, participant sex, and quiz topic gender would produce higher levels of perceived knowledge, expertise, and intelligence. This means that, as of yet, participants' inclination to grant attributions of knowledge and expertise was not as complex as hypothesized. However, there were several interesting alternative findings (Miller et al., 1990; Ross et al., 1977; Sumpton & Gregson, 1981).

The significant interaction between quizmaster sex and topic gender remains curious. For perceived level of quizmaster knowledge and expertise, there was no difference in participants' perceptions of male quizmasters for either masculine or feminine topics; however, for female quizmasters, participants granted lower attributions of knowledge and expertise when the topic was masculine vs. feminine. In other words, female quizmasters fared much worse, rated by both male and female participants as having less knowledge and expertise of a masculine topic than a feminine topic.

Even more damaging to females is the finding that male participants rated the female quizmaster as significantly less knowledgeable than the male quizmaster, regardless of topic. However, female participants did not show this bias, and rated the male and female quizmasters relatively evenly on perceived knowledge. This implies that males are more skeptical of a female's credibility in general, regardless of whether she is discussing something that is traditionally feminine or traditionally masculine in topic. This suggests that instead of processing the event superficially, when a female discusses a nontraditional feminine topic, it invites more careful scrutiny because it does not fit the usual gender stereotype.

Status characteristics theory can partially explain these findings. Male quizmasters were rated highly on perceived knowledge and expertise when the topic gender was masculine, indicating that they were perceived as having a high status in that topic. This is also the case for female quizmasters when the topic gender was feminine (although only when judged by women participants). This theory does not explain, however, why male quizmasters were rated by men to have high knowledge and expertise when the topic was feminine, nor does it explain why female quizmasters were rated by men as less knowledgeable in general. Future research might consider examining participants' judgments of the quizmaster's status; perhaps men perceive women as having lower status in general (affecting their perceived knowledge) while women might not have this bias. This is in line with findings mentioned above by Fieldman-Summers and Kiesler (1974). This would also contribute to a deeper understanding of status characteristics theory, demonstrating how status processes might operate in different situations.

Since it has been found that participants' gender role orientation (Bem, 1974) may influence their perceptions of gender stereotypical and non-stereotypical displays, future research may wish to include gender role orientation as a relevant variable (Morrison & Shaffer, 2003). Participants with more traditional gender role orientations favoured displays that were congruent with gender stereotypes over those that were atypical, whereas non-traditional individuals somewhat favoured non-stereotypical displays over those that conformed to conventions. Perhaps gender role orientation serves as a mediating factor in the inferences and attributions participants make regarding the quizmaster providing information that either conforms to stereotypical expectations or defies them.

In sum, these results help to outline the differences in the use of the fundamental attribution error based on gender-stereotyped information, as well as the potentially harmful outcomes that inferences can cause women in particular.

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NOTE:

They suggested including a correlation table for each measure in the study; would you have access to the data in order to provide this? Also, they mentioned speaking to the implications of

status characteristics theory to the hypothesis. I was not sure if they meant to modify the hypothesis (it seems a little strange to do so) or if my insertions would be enough.