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Abstract

Within categories where 'people' are implicitly assumed to be male, people explain gender differences as being 'about women' rather than being 'about men.' In two experiments (N = 102) this bias was reversed within the category 'voters.' Participants generalized data about women or men to men or women and explained the resulting gender differences. Participants always took 'the effect to be predicted' as 'the effect to be explained' whether their predictions were unconstrained (Experiment 1) or constrained by forced-choice items (Experiment 2). People can reason about gender differences by taking women as the default gender, even within categories that are traditionally normed on men. Implications for the communication of gender differences and the bases of androcentric thinking are discussed.

Keywords

Explanation, category norm, androcentrism, prediction, gender differences.

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Both within and beyond psychology, the best means of communicating gender differences and similarities have been a matter of some debate (Baumeister, 1988; Kitinger, 1994; McHugh, Koeske, & Frieze, 1986; Mednick, 1989; Scarr, 1988). Depending on the way that gender differences are reported, they can produce stereotype threat effects (Spencer, Steele, & Quinn, 1999), render workplace discrimination invisible (Rutte et al., 1994), lead to the selective blaming of individual women workers for failures (McGill, 1993), and reinforce gender stereotypes (Brescoll & LaFrance, 2004). Thus, it is crucial for feminist psychology to understand how people make sense of the gender difference findings that the social sciences routinely produce.

The present research examines how *androcentrism* affects the interpretation of gender differences. Androcentrism consists of both the tendency to take men as the norm for social categories, and the consequent tendency to attribute gender differences to women (Bem, 1993). Below, I explain why taking one group as the norm leads the other to become 'the effect to be explained,' report two experiments that show how explanations of gender differences can be manipulated to become less androcentric, and discuss implications for the construction and communication of gender difference findings.

Androcentrism and the Explanation of Difference

Bem (1993) describes *androcentrism* as a pervasive cultural bias that affects interpretations of both gender similarities and gender differences. Thus, where gender

differences are not mentioned, men are assumed to be the norm for the species, but where gender differences are evident, such differences are assumed to inhere in women (see also Hare-Mustin & Marecek, 1990). Evidence of androcentric thinking abounds in psychology. Maleness is the 'default' value for many social categories (Stroessner, 1996; Zárate & Smith, 1990), male pronouns are used to represent females and males (Hamilton, 1988, 1991; Hyde, 1984; Martyna, 1980), and the categories of 'people' and 'men' are confused more quickly than are the categories of 'people' and 'women' (e.g., Broverman et al., 1970; Eagly & Kite, 1986).

The second component of androcentric thought has also been evidenced. Miller, Taylor, and Buck (1991) found that participants overwhelmingly called to mind male exemplars when asked to think of a typical voter, yet explained gender differences in voting behaviour in terms of women's attributes. Participants also considered men's voting behaviour to be relatively fixed and women's to be relatively mutable. Miller et al. (1991) argued that people form working mental representations of social categories called *category norms* to generate explanations (c.f., Kahneman & Miller, 1986). Category norms are formed from accessible exemplars of the category, whose attributes become implicit defaults against which other category members are compared. In other words, because people mentally instantiate 'voters' with exemplars that are male, males' distinctive attributes become normative, and gender differences are attributed to women.

To counter gender-based discrimination it is necessary to undo such androcentric thinking about group differences. Biological explanations of gender stereotypes can strengthen gender stereotypes (Brescoll & LaFrance, 2004), but androcentric explanations explicitly link women's attributes to gender status more than they do for men, such that women will bear the brunt of such stereotyping. Indeed, essentialist ideas are selectively used to explain stereotype-consistent sexual orientation differences, but such explanations focus on lesbians and gay men, and not on heterosexual women and men (Hegarty & Pratto, 2001, 2004). Category norms can also license discrimination by confusing the particular attributes of one group with general standards for all (Wenzel, Mummendey, Weber, & Walzdus, 2004). Thus, women are disadvantaged by courts which presume men's perspective on issues such as sexual harassment to be a valid standard for all (Perry, Kulik, & Bourhis, 2004). In contrast, male advantage might be characterized by freedom from stereotyping and by legal privilege that follows from conflation of one's particular subjectivity with the norm.

If explanations are determined by category norms, then there are at least three ways that androcentric explanations might be undone. First, where women are the more typical members of a category, androcentrism should be reduced. Miller et al. (1991) found this to be so when participants explained gender differences among elementary school teachers. Hegarty and Pratto (2001) similarly found participants' explanations of differences between gay and straight men to typically focus on gay men, except differences among 'men living with HIV/AIDS.' Second, the difference being explained may affect the relative focus on women or men. Hegarty and Pratto (2001) observed that explanations of differences between straight and gay men focused on whichever group was described as doing *more*, rather than *less*, of a given behaviour. Indeed, there is a general preference for 'more than' over 'less than' constructions of many kinds of differences (see Clark, 1969). Thus, where men do more of a behaviour than women, the tendency to focus explanations on women will be reduced.

Third, Kahneman and Miller (1986) insisted that category norms are fleeting mental representations constructed ‘on the fly,’ and that different category norms can be called to mind for the *same* social category. Hegarty and Chryssochoou (2005) similarly argued that when people generalize a finding from one group to another that they form a temporary norm around the first group (i.e., the *premise*) that makes salient the distinctive attributes of the group to which they are generalizing (the *conclusion*, see also Sloman, 1993). Their participants generalized findings between EU countries and then explained resulting differences. Participants’ explanations focused overwhelmingly on the country to which they generalized, and two other findings were consistent with Hegarty and Chryssochoou’s (2005) hypotheses; distinctive attributes of participants’ in-group blocked generalization and reduced the perceived similarity between countries more when it was a conclusion than when it was a premise. These findings show that people can instantiate quite different norms for ‘EU countries’ that weigh heavily whichever exemplar of that category is positioned as the premise. As such they suggest that androcentrism might be undone when people generalize from women to men prior to explaining gender differences.

The present research addressed this question. I predicted that explanations of gender differences would focus on men more than women when women were rendered the premise group, even within Miller et al.’s (1991) classic androcentric category of ‘voters.’ Hegarty and Chryssochoou (2005) found participants to focus explanations on whichever of two highly typical EU countries was positioned as the premise. However, the present studies additionally tested whether manipulating the premise group’s identity would be sufficient to undo long-standing effects of androcentrism in a social category.

Although explanation content was the primary dependent measure in these studies, they also allowed a further examination of the relationship between explanation contents and judgments about the mutability of women’s and men’s behaviour. Miller et al. (1991) argued that explanation content and mutability judgments were causally linked, but produced no evidence to support their claim. Hegarty and Pratto (2001) found explanation content and perceived mutability to be uncorrelated. The present studies allowed a further examination of this issue.

Experiment 1

Method

Participants. Forty-seven female and thirteen male university students participated (age = 18-47 years, $M = 21.1$ years). They identified their nationalities as British ($n = 55$), Italian ($n = 2$), Cypriot ($n = 1$), Greek ($n = 1$) and Irish ($n = 1$).

Materials. The principal stimuli were four versions of a questionnaire describing women’s and men’s voting intentions. There were two *two-premises* versions, and two *one-premise* version. In the *female larger effect two-premise* conditions, participants were presented with materials that read as follows:

A recent MORI poll has shown that British men and women have different levels of interest in political participation. In a recent survey 1,000 men and 1,000 women were polled. 58% of women and 43% of men said that they would be certain to vote if a general election were held in the UK this year.

In the *male larger effect* condition these percentages were reversed.

Data about one gender only was presented in each one-premise condition. The *male voter premise* materials read as follows;

A recent MORI poll has shown that British men and women have different levels of interest in political participation. In a recent survey 1,000 men and 1,000 women were polled. 51% of men said that they would be certain to vote if a general election were held in the UK this year. The overall percentage of women was different from this. What percentage of women do you think said that they would be certain to vote? ____%

In the *female voter premise* condition, identical information about women was presented, and men were positioned as ‘the effect to be predicted.’

In all conditions participants were instructed to explain in their own words why a gender difference had been observed. Next, the following mutability item was presented in all conditions;

Imagine that a second poll were conducted and no gender differences were found. What overall percentage of people do you think would say they were certain to vote in a general election? ____%

Finally, participants completed open-ended demographic measures.

Procedure. In both experiments, undergraduate volunteer participants were randomly assigned to condition and completed the materials during class. Afterwards participants were debriefed about the falsity of the results presented and the hypotheses. Study results were presented two weeks later. The experiments were conducted in Britain early in 2005, prior to the government’s announcement that a general election would be held later that year.

Calculation of Dependent Variables. Participants’ written explanations were coded for the presence of references to women’s and men’s attributes. References to traits (e.g., ‘women are more pro-active’), to actions (e.g., ‘men pay more attention to politics’), to mental states (e.g., ‘women feel that men are ahead of them’) and to roles (‘men are still the main breadwinner’) were all counted as references to the relevant gender group. Explanatory statements were coded as additional references (e.g., ‘men are more aggressive and so want to change the society they live in’ = two references to men). Adjectives were coded as additional references (e.g., ‘men are *lazy alcoholics*’ = two references to men). One judge coded all explanations for both experiments. A second judge independently coded 25% of the references across the experiments. High agreement between judges was observed regarding references to both women and men $r(20) = .92, .89$ respectively. The first judge’s code was used.

For each participant mutability scores were calculated for each gender as the difference between the percentage of that gender group who were estimated to vote according to the first and the second poll. In the two-premises conditions, both estimates for the first poll were provided by the stimuli. In the one-premise condition, participants constructed one of these estimates themselves. Responses to the mutability item always provided the estimate for the second poll.

Results

Results were analyzed separately for the one- and two-premise conditions.

Two-Premise Conditions. The explanation data was analyzed using a 2 (larger effect) x 2 (gender group referenced) ANOVA. Women were referenced more than men overall ($M_s = 2.00, 1.03$ respectively), $F(1, 28) = 7.55, p = .01, \eta^2 = .21$, demonstrating androcentrism. An interaction between group referenced and condition was also observed, $F(1, 28) = 11.60, p < .01, \eta^2 = .29$. Post hoc tests showed that participants explained men less than women when women were the larger effect, and both groups equally when men were the larger effect (see Table 1).¹

An equivalent 2x2 ANOVA was conducted on the mutability judgments in the two-premises condition with larger effect group as a between-subjects factor and target gender group as a within subject factor. Neither main effect nor the interaction was significant, all $F < 1$.

Table 1: References in Explanations and Mutability by Condition, Experiment 1 (Standard Deviations in Parentheses).

Target Group	Women	Men	Women	Men
	Explanations		Mutability	
<i>Two-Premises Conditions</i>				
Female Majority	2.69 (1.08)	0.68 (1.25)	10.56 (8.28)	9.06 (4.25)
Male Majority	1.21 (1.21)	1.43 (1.28)	13.00 (9.99)	11.43 (10.76)
<i>One Premise Conditions</i>				
Female Premise	0.50 (1.50)	1.86 (1.03)	8.00 (10.13)	9.20 (8.84)
Male Premise	2.43 (1.20)	0.56 (1.14)	11.00 (10.32)	10.40 (10.37)

One-Premise Conditions. As above, explanations were analyzed first. A 2 (premise group) x 2 (group referenced) ANOVA revealed no main effects, both $F < 1$, but did reveal a significant interaction, $F(1, 28) = 20.42, p < .001, \eta^2 = .42$. Confirming predictions, post hoc tests showed that participants focused their explanations on men more in the female-premise condition, and on women more in the male-premise condition. A 2x2 ANOVA was conducted on the mutability scores as above. Neither the main effects nor the interaction were significant (see Table 1).

Discussion

This experiment replicated two past findings; explanations of gender differences focused on women more than men (Miller et al., 1991), and on whichever gender constituted the larger effect (Hegarty & Pratto, 2001). More importantly, the principal hypothesis was supported in the one-premise conditions. Participants consistently explained the gender about whom they made a prediction, regardless of whether that group was women or men. In the one-premise conditions the effects of male's greater typicality within the category 'voter' were not evident. One previous study has found that conclusions are explained more than premises (Hegarty & Chrysoschoou, 2005) but Experiment 1 shows that this manipulation is sufficient to overcome the effects of typicality within a social category. Finally, mutability judgments did not vary by target gender or condition, suggesting that they are unrelated to explanation content (Hegarty & Pratto, 2001).

Experiment 2

In the one-premise conditions of Experiment 1, androcentric bias was undone, but participants speculated freely about the direction and size of the gender differences that they would explain. Experiment 2 examined whether androcentrism could be undone even when such estimates were much more constrained. Participants in the two-premises condition were given data about women and men as before. In the one-premise conditions, participants were given the relevant data about one gender group and chose one of three options to predict the behaviour of the other gender group. Two of these options were extreme values, which I predicted would be chosen by few participants. The third option was identical to the results presented in the two-premises condition. It was predicted that most participants would then end up explaining the same gender difference across the experiment's conditions.

Method

Participants. Thirty-six female and six male university students participated (age = 20-29 years, $M = 21.2$ years). They identified their nationalities as British ($n = 35$), American ($n = 2$), Finnish ($n = 1$), Irish ($n = 1$), Singaporean ($n = 1$) and Swedish ($n = 1$). One participant identified no nationality.

Method. Three questionnaires were constructed, akin to those used in Experiment 1. In the *two-premises* condition the vignette reported that 62% of men and 51% of women had expressed an intention to vote. In the *female-premise* condition, participants were told that 51% of women had expressed an intention to vote and were asked to guess which of the following was the corresponding percentage for men; 2%, 62% or 99%. In the *male-premise* condition, participants were told that 62% of men had expressed an intention to vote and were asked to guess which of the following was the corresponding percentage for women; 2%, 51% or 99%. In all conditions, a prompt to explain the gender differences was presented, followed by five blank lines. Finally, a mutability item was presented, identical to that used in Experiment 1.

Procedure. The procedure and coding were identical to Experiment 1.

Results

Predictions. In the female-premise condition, all thirteen participants guessed that 62% of men intended to vote. In the male-premise condition, participants guessed that 51% ($n = 10$), or 99% ($n = 5$), of women intended to vote. Thus, 82% of participants' judgments in the one-premise conditions were effectively manipulated.

Explanations. Explanations were coded as in Experiment 1. A 3x2 ANOVA was conducted with the premise group (both genders vs. women vs. men) as a between-subjects factor and gender group referenced (women vs. men) as a within-subjects factor. Neither main effect was significant, both $F < 1$, but a significant interaction was observed, $F(1, 39) = 13.69$, $p < .001$, $\eta^2 = .41$ (see Table 2). Post hoc tests revealed that the trend to explain women more than men in the two-premises condition was not significant. However, as in Experiment 1, explanations focused on women in the male-premise condition, and on men in the female-premise condition.

Mutability. Mutability scores were calculated as in Experiment 1. A 3x2 ANOVA revealed main effects of target gender, $F(1, 39) = 10.82, p < .01, \eta^2 = .22$, and experimental condition, $F(2, 39) = 6.03, p < .01, \eta^2 = .24$, and an interaction between them, $F(1, 39) = 3.09, p < .06, \eta^2 = .14$. In the two-premises conditions, women's and men's voting intentions were considered equally mutable, $t < 1$. In both one-premise conditions, women's voting intentions were mutated more than men's, but not in the two-premise condition (see Table 2).

Table 2: References in Explanations and Mutability by Condition, Experiment 2 (Standard Deviations in Parentheses).

Target Group	Women	Men	Women	Men
	Explanations		Mutability	
<i>Premise Group</i>				
Two-Premises	2.21 (1.63)	1.42 (1.34)	5.50 (3.16)	5.79 (3.64)
Female Premise	0.31 (0.63)	2.31 (1.32)	13.54 (6.47)	5.30 (4.29)
Male Premise	2.60 (1.92)	0.80 (1.08)	19.80 (19.16)	9.87 (6.13)

Discussion

Experiment 2 shows that 'the effect to be predicted' becomes 'the effect to be explained,' even when predictions are constrained by forced choice items. The manipulation constrained participants' responses more when the premise group was female rather than male. Consequently, the most interesting contrast is the one between the explanations in the two-premises condition and the female-premise condition. All participants in both conditions explained why 11% more men than women might intend to vote. Yet the contents of these explanations were strikingly different. Explanations in the two-premises condition focused slightly more on women. This finding was consistent with the results of Experiment 1 and was not surprising; men were more typical of 'voters,' but they also constituted the 'larger effect'. Both these facts were true in the female-premise condition also, but here explanations focused overwhelmingly on men. In contrast to the results of Experiment 1, males were judged to be less mutable in the one-premise conditions.

General Discussion

These two experiments showed that gender differences can be implicitly positioned as being 'about men' rather than 'about women', even within an androcentric social category. Participants presented with data about both genders spontaneously focus on women more than men and on the gender who constitutes 'the larger effect.' Yet, if asked to make a prediction about one gender, participants took 'the effect to be predicted' as 'the effect to be explained' regardless of whether that group was men or women, or their predictions were unconstrained (Experiment 1) or constrained by forced choice items (Experiments 2). These results are consistent with past descriptions of category norms as flexible mental structures constructed 'on the fly' (Hegarty and Chryssochoou, 2005; Kahneman and Miller, 1986).

These results build on Hegarty and Chryssochoou's (2005) findings that people explain conclusion groups rather than premise groups in three ways. First, they extend those findings from national groups to gender groups. Second, they show

that the manipulation is sufficient to undo the effect of one group's greater typicality on explanation content. Third, they show that the effect persists even if participants predictions about the conclusion group are radically constrained. Manipulating the typicality of the overarching category has been shown to *undo* the tendency to explain the less normative group (Hegarty & Pratto, 2001, Experiment 2; Miller et al., 1991; Experiment 3). However, manipulating the premise group's identity completely *reversed* the focus of explanation onto the more normative group (see also Hegarty and Chryssochoou, 2005, Experiment 4).

In both experiments presented here, few participants were men, and gender differences could not be sensibly examined within each experiment. Comparing data from the 22 men and 80 women in both experiments it was observed that male participants made a slightly greater number of references to male voters than did female participants ($M_s = 1.55, 1.22$ respectively) while females made slightly greater number of references to female voters ($M_s = 1.79, 1.32$). However, neither difference was reliable, both $t(100) < 1.3$, both $p > .20$. Men and women explained gender differences similarly here as in previous research (see Miller et al., 1991).

There was little evidence to support Miller et al.'s (1991) claims that mutability judgments were related to explanation content. To recap, participants only mutated men's behavioural intentions more than women's in the one-premise conditions of Experiment 2. While these effects were in the expected direction of greater perceived female mutability, the manipulations of the premise group's identity did not appear to affect mutability judgments systematically. As in Hegarty and Pratto's (2001) experiments, mutability judgments were unrelated to the contents of inter-group explanations.

In conclusion, these experiments not only illuminate cognitive processes which underlie the explanation of gender differences, they also have implications for the communication of psychological gender differences in non-androcentric ways. Hegarty and Pratto (2001) observed that the harmful effects of category norms could be undone by focusing attention on the particularities of high status groups such as Whites, heterosexuals, and men. The present studies show one way of doing this. If lead to ponder whether men are similar or different to women, a person must hold in mind those characteristics that make men particular, rather than allowing them to become background defaults for people of all genders. The technique of making men 'the effect to be predicted' may be more feasible for oral than for written accounts of gender differences, and could be used to present gender differences differently in classrooms, diversity trainings, and other settings. Here, people who are lead to call to mind why men are particular might think about gender differences in more even-handed ways. They might also spontaneously alight on explanations that androcentric thinking would occlude.

Notes

1. All post-hoc tests in the paper are Tukey's HSD ($\alpha = .05$).

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