CURRENT RESEARCH IN SOCIAL PSYCHOLOGY
http://www.uiowa.edu/~grpproc/crisp/crisp.html

Submitted: June 13, 2018
Revision: March 6, 2019
Accepted: April 1, 2019

"PRIVILEGE IS INVISIBLE TO THOSE WHO HAVE IT": SOME EVIDENCE THAT MEN UNDERESTIMATE THE MAGNITUDE OF GENDER DIFFERENCES IN INCOME

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ABSTRACT

This research investigated gender differences in misperceptions of gender differences in income. We hypothesized that men misperceive and underestimate the magnitude of gender income differences to a greater extent than women. Data was collected by means of a questionnaire, and respondents' (N = 314) perceptions of income differences were compared with official statistics. Results indicated that men misperceive and underestimate the magnitude of gender differences in income more than women, which supports and extends previous research implying a self-reference effect in relation to misperceptions of economic inequality and gender issues.

INTRODUCTION

To what extent do peoples' perceptions of the magnitude of economic inequality correspond to reality? A recent poll survey in 40 countries revealed that most people are wrong in their estimations of the distribution of wealth in society (Ipsos MORI, 2016), and that they tend to overestimate how equally wealth is distributed in their country. Other studies provide the same overall picture (e.g. Chambers, Swan & Heesecker, 2014; Norton & Ariely, 2011). In the current study, we take a closer look at whether perceptions of gender differences in income differ between men and women.

It has been widely supported within social cognition research that information specifically relevant to an individual is retrieved quicker and more accurately, which is referred to as the self-reference effect (e.g. Klein & Loftus, 1988; Rogers, Kuiper & Kirker, 1977). Furthermore, studies have indicated that the consequences of economic inequality are direr for people belonging to the economically disadvantaged group than for people belonging to the economically advantaged group (e.g., Oishi, Kushlev & Schimmack, 2018; Pickett & Wilkinson, 2010). Since information concerning economic inequality may be more relevant to those belonging to the economically disadvantaged group, an important question to ask is whether the magnitude of income differences is perceived more accurately among them compared to those

belonging to the advantaged group. Only a few studies have approached this question, specifically by comparing how misperceptions of economic inequality differs between those with higher vs. lower income (Xu & Garand, 2010) and between Whites and Blacks in America (Kaplowitz, Fisher & Broman, 2003). What these studies have in common is that they show that those belonging to the economically advantaged group (i.e., high income earners and Whites) are less accurate in their estimations of the magnitude of differences between themselves and the economically disadvantaged group (i.e., low income earners and Blacks). As regards the self-reference effect, Xu and Garand's (2010) results indicated that in states with higher degree of income inequality, people with lower income are more accurate in their estimations because they are more exposed to contexts reflecting economic inequality in their daily lives, which in turn make them more susceptible to information about economic inequality. Similarly, Kaplowitz et al.'s (2003) results revealed that Whites underestimate the magnitude of economic differences between Blacks and Whites to a greater extent than Blacks. This suggests that salience of income inequality and personal experience of belonging to an economically discriminated group is associated with greater accuracy and lower levels of underestimation of the magnitude of the kind of economic discrimination one is being subject to.

Based on the findings of Kaplowitz et al. (2003) and Xu and Garand (2010) it is reasonable to assume that people who belong to an economically advantaged group misperceive and underestimate the magnitude of income differences between themselves and the economically disadvantaged counterpart to a greater extent than the economically disadvantaged group. However, besides differences between high- and low income earners (Xu & Garand, 2010) and Blacks and Whites (Kaplowitz et al., 2003), no studies have yet examined how misperceptions of income inequality differs between other kinds of economically differentiated groups, such as men and women. Considering that income differences between men and women persist all over the world (OECD, 2017), we aim to investigate whether the relationship between belonging to the economically advantaged group and misperceptions of economic inequality that is implied in previous studies can be applied to the relationship between gender and misperceptions of gender differences in income. Thus, by examining gender differences in the magnitude of misperceptions of income differences, this study aims to contribute to the somewhat scant research that has been conducted in the area so far. Specifically, we propose that men misperceive and underestimate income inequality between men and women to a greater extent than women.

METHOD

Participants

A total of 314 individuals participated in the study. Six participants were omitted from the sample for the following reasons; one participant was omitted from the data analysis because he was under the age of 18 and three participants were omitted because they did not report their estimations of income differences between men and women. Because we operationalized gender as a dichotomous variable in the current study, the two participants who did not identify as either female or male were also omitted from the data analysis. The remaining sample consisted of 51% (n = 156) women and 49% (n = 152) men. The age of the participants varied from 18 to 80 years (M = 31, SD = 12).

Materials

Using a cross-sectional design approach, variables were measured by having participants indicate their responses in a questionnaire. Gender was measured using an open-ended question asking participants to indicate their gender. Those who did not identify as either male or female were omitted from subsequent data analyses, as being male or female was the main predictor in the present study. Identifying oneself as male was coded as *0* and identifying oneself as female was coded as *1*.

The dependent variable used to test the first hypothesis was the degree of absolute deviance in estimation of income differences between men and women. The dependent variable used to test the second hypothesis was the degree of underestimation of income differences between men and women. Both dependent variables were based on a special computation of a deviance variable, which was based on a measurement constructed specifically for the present study.

The Deviance Variable. The deviance score was calculated by subtracting participants' estimations of the magnitude of income differences between the genders with the objective magnitude of these gender differences. The objective data that estimation scores were compared to in order to create the deviance score were retrieved from Statistics Sweden's (SCB, 2017) report on income differences. The item measuring estimation of gender differences in income was "What do you think the average monthly income was for the following groups in Sweden in 2015?" and the participants could indicate their estimations for the groups "men" and "women" in the response. The definition of income was explained to the participants as "the sum of all taxable and non-taxable income, including capital gain/loss, minus tax", which was the same definition of income as in Statistics Sweden's (SCB, 2017) report on income differences. The magnitude of income differences between men and women was operationalized as the natural logarithm of the income ratio between men and women. The income ratio, in turn, was calculated by dividing the average monthly income of men by the average monthly income of women. Thus, the deviance score was computed by subtracting the natural logarithm of the estimated income ratio with the natural logarithm of the actual income ratio. Hence, a deviance score of *0* implied a correct estimation of income differences, whereas a deviance score of *>0* implied an overestimation of income differences and a deviance score of *<0* implied an underestimation of income differences.

The natural logarithms of the ratios were used instead of raw ratio estimation scores because it has been found to be an appropriate method when measuring income differences (Becker, 1975; Jasso, 1980; Jasso & Wegener, 1997; Kelley & Evans, 1993; Verwiebe & Wegener, 2000; Willis et al., 2015). The reason for this is that it takes into account that the differences in income among rich people have a lower weight than differences among poor people. Further, income ratios were used as a measurement of estimation of income differences instead of absolute income estimations because it shifts focus from currency units to the relative income hierarchy (Castillo, 2011; Kelley & Zagorski, 2004).

Absolute Deviance in Estimation of Income Differences. The degree to which participants' estimations of the magnitude of income differences between men and women deviated from the actual magnitude of income differences between men and women constituted their absolute deviance score. The absolute deviance score was computed by transforming the positive deviance score into a rank variable. This means that for those who overestimated the magnitude of income differences, the absolute deviance score was the same as their deviance score, which was then transformed into a rank variable. For those who underestimated income differences (i.e. had a negative deviance score), the absolute deviance score was computed by converting their deviance score into a positive value and then transforming it into a rank variable.

Underestimation of Income Differences. The degree to which participants underestimated the magnitude of income differences between men and women was measured by converting their negative deviance score into a positive score and then transforming it into a rank variable. Those who were correct in their estimations or overestimated income differences (i.e. having a deviance score >= *0*) had an underestimation score of *0*.

Procedure and Ethics

Participants were recruited via online forums and on various campus sites of Lund University and Malmö University in Sweden. Those recruited via online forums filled out a web based questionnaire and those recruited at campus sites filled out a paper-and-pencil questionnaire. The contents of the web based and paper-and-pencil questionnaires were identical.
The study was conducted in accordance with the rules and regulations concerning ethical conduct within psychological research put forth by the American Psychological Association. Prior to their participation in the study, all respondents provided informed consent. All participants were guaranteed anonymity, confidentiality and the possibility to withdraw at any time.

RESULTS

The aim of the present study was to examine the association between gender and misperceptions of the magnitude of income differences between men and women. Specifically, our hypotheses were that a) compared to women, men are less accurate in their estimations of the magnitude of income differences between men and women, and b) compared to women, men underestimate the magnitude of income differences between men and women to a greater extent. Two independent samples t-tests were conducted to test the hypotheses. In the analysis testing the first hypothesis, the dependent variable was absolute deviance in estimation of the magnitude of income differences between men and women. In the analysis testing the second hypothesis the dependent variable was underestimation of the magnitude of income differences between men and women.

Deviance in Estimation of Income Differences Between Men and Women

The results of the first independent-samples t-test indicated that compared to women (M = 132.56, SD = 90.72), men (M = 177.02, SD = 81.61) reported significantly higher absolute deviance in estimation of income differences between men and women, $t(306) = 4.52$, $p < .001$.

Thus, the hypothesis that men are less accurate in their estimations of the magnitude of income differences was supported.

Underestimation of Income Differences Between Men and Women

In support of our second hypothesis, the results of the second independent samples t-test revealed that compared to women (M = 116.45, SD = 95.12), men (M =181.52, SD = 88.64) underestimated income differences significantly more, $t(306) = 6.21$, $p < .001$. Women's and men's estimations as well as the actual magnitudes can be seen in Table 1.

Table 1.
Means of women's and men's estimations of women's and men's income, compared with actual figures.

	Women's income	Men's income	Ratio
Women's estimations	25,460	31,829	1.25
Men's estimations	24,467	28,252	1.15
Actual	19,217	24,741	1.29

Note. Income is indicated as SEK/month.

DISCUSSION

The present study investigated whether men misperceive and underestimate the magnitude of income differences between men and women to a greater extent than women do. The results revealed that men were less accurate in estimating the magnitude of income differences, and that they underestimated the magnitude of income differences to a greater extent too. This lends support to previous studies indicating that belonging to an economically disadvantaged group is associated with higher accuracy in estimations of the magnitude of differences between themselves and the advantaged group (i.e., Kaplowitz et al., 2003), especially when income inequality is salient (Xu & Garand, 2010), and that belonging to the advantaged group is related to underestimation of differences between themselves and the disadvantaged group (i.e., Kaplowitz et al., 2003). The results extend previous research as they provide new knowledge about the relationship between gender and misperceptions of income differences, specifically.

Previous research on differences in misperceptions of economic inequality implies that belonging to the advantaged group is associated with underestimating the magnitude of income differences, perhaps due to a lack of experience of being economically disadvantaged. The present results too may be interpreted in terms of women being more accurate due to a self-reference effect (Klein & Loftus, 1988; Rogers, Kuiper & Kirker, 1977). Personal experiences of being disadvantaged may have provided women with more self-referent information to rely on when estimating income differences, and thus to retrieve such information more accurately.

On a more speculative account, considering income differences as an expression of sexism, the finding that men are less accurate in their estimations of economic inequality is also in line with Goh et al. (2017), who showed that men are less accurate in their perceptions of sexist behavior against women. They attributed these findings to the larger adaptive function that accurate

perceptions of sexism may have for women, since it is more important for them to be able to defend themselves against it. Considering that men generally have more power and status than women, they have less to gain from having accurate perceptions of sexism against women.

Regarding our results on gender differences in underestimation of income differences, it is conceivable that men rely more on cognitive heuristics when making their estimations, in lieu of self-referent information, and therefore underestimate the differences more than women. Relatedly, a study by Eriksson and Simpson (2012) showed that peoples' general tendency to underestimate the magnitude of economic differences can be explained by an anchoring bias; that is, people tend to anchor their estimations on an equal distribution, which may be particularly likely when there is no self-referent information to rely on.

Limitations and directions for future studies

The main limitation of the current study is that we did not test whether the relationship between gender and misperceptions of income differences is mediated by a self-reference effect. We encourage that this potentially influencing factor is included in future studies, which could be done in a number of ways. Firstly, whether women are more accurate in their estimations of income differences because they belong to the relatively disadvantaged group and therefore have more self-referent information about economic inequality, could be investigated by testing the mediating effect of gender identification on the relationship between gender and estimations of income differences between men and women.

Secondly, future studies may test the proposed mediating effect of relying on self-referent information by including measures of susceptibility to information about income differences. For instance, participants could indicate the extent to which they receive information about income differences between men and women in the contexts of their daily life by means of items such as "how often are you reminded of income differences between men and women?" and "how often do you talk to others about income differences between men and women?". Based on Xu and Garand (2010) it can be assumed that women would have higher scores on this measure and that it would have a mediating effect on the relationship between gender and misperceptions of income differences.

Regarding cognitive biases as potentially mediating the association between gender and estimations of income differences, future studies could test whether men are more influenced by cognitive biases when making their estimations by including items such as "How much effort did you put into making accurate estimations?". The effect of cognitive biases could also be tested experimentally by forcing participants to report their estimations as accurately as possible in an experimental condition (e.g. by letting them know that if they are too inaccurate they will have to perform the task once again) and compare them with estimations in a control condition where participants are not forced to make as accurate estimations as possible.

Another limitation of the current study regards the possibilities to generalize our finding that men misperceive and underestimate the magnitude of gender differences in income more than women; the study should be replicated in other cultural settings. Notably, as suggested by Xu & Garand (2010) researchers should be aware of potential cultural differences in misperceptions of

the magnitude of economic inequality depending on the salience of economic inequality in those cultures. Crucially, in order to make the more general claim that economically advantaged people misperceive and underestimate income differences between themselves and the economically disadvantaged to a greater extent, the results would need to be replicated in other populations than the one investigated here (men vs. women). We therefore encourage other researchers to replicate our study in other cultures and social groups, such that we eventually get a better general picture of how invisible privilege is to those who have it.

Conclusion

It appears that men are more detached from the reality of income differences between men and women and tend to underestimate their magnitude to a greater extent than women. Rising economic disparity has been rated as the single most important trend in determining global developments over the next 10 years (World Economic Forum, 2017) and research has shown that it is *perceived* economic inequality, rather than *actual* economic inequality, that predicts interclass conflicts, support for economic redistribution, electoral outcomes, voting behavior and public policy outputs (Gimpelson & Treisman, 2018; Jacoby, 2010). An incorrect picture of the magnitude of differences in income between men and women may potentially lead to the support of policies that one would not endorse otherwise. More knowledge of how and why people misperceive the magnitude of income differences is therefore not only of great scientific value, but also practical, and we encourage future research endeavors on how to decrease the mismatch between perception and reality.

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