Journal of Research in Personality 45 (2011) 117–120

Contents lists available at ScienceDirect

Journal of Research in Personality

journal homepage: www.elsevier.com/locate/jrp

Brief Report

Forming first impressions: The role of gender and normative accuracy in personality perception

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ARTICLE INFO

Article history:
Available online 5 November 2010

Keywords:
Person perception
Accuracy
Gender
Impression formation

ABSTRACT

Gender is associated with interpersonal sensitivity across different domains, with females, on average, demonstrating higher levels of interpersonal sensitivity than males. What underlies these gender differences in the accuracy of first impressions of personality remains unclear. Across two large video studies and a large round-robin design, perceivers' gender was related to the accuracy of general personality trait impressions. Specifically, female perceivers achieved higher levels of accuracy, but only with respect to normative accuracy or perceiving what others are like in general. There were no significant gender differences in terms of distinctive accuracy or perceiving how others are different from the average person. Discussion considers how these findings relate to previously established gender differences in other domains of interpersonal sensitivity.

1. Introduction

It has often been assumed that females are more interpersonally perceptive than men. Indeed, Graham and Ickes (1997) proposed that a female advantage in the realm of interpersonal accuracy is so entrenched in cultural lore that it has become incorporated into the female gender-role. In turn, gender differences in interpersonal sensitivity have been found for a variety of tasks, ranging from perceptions of more temporary states to more stable, broad traits (e.g., Carney, Colvin, & Hall, 2007; Murphy, Hall, & Colvin, 2003; Vogt & Colvin, 2003). However, it is unclear what underlies this apparent female advantage, particularly in personality impressions that involve several components of accuracy, including more general knowledge about what people are like and specific knowledge about the target person. The aim of the present manuscript is to clarify the role of gender in the formation of accurate first impressions by examining the relation of gender to different components of accuracy.

Gender differences have been well-established in more circumscribed accuracy tasks, such as nonverbal decoding and empathic accuracy. Nonverbal decoding refers to the inference of other individual's emotional states from nonverbal cues, such as facial expressions, posture, and tone of voice. Females reliably outperform males in judging nonverbal behavior, especially in judgments of emotion (Hall, 1984). This female advantage has been replicated using a variety of measures including the Profile of Nonverbal Sensitivity (PONS; Rosenthal & Depaulo, 1979), the Interpersonal Perception Task (IPT; Costanzo & Archer, 1989), and the Test of Nonverbal Cue Knowledge (TONCK; Rosip & Hall, 2004). Empathic accuracy is the ability to accurately understand specific, moment-to-moment thoughts and feelings reported by a target person. Females achieve higher scores on tasks of empathic accuracy when made aware that the task involves judgments of empathic accuracy or when the female gender-role stereotype is made highly salient (Graham & Ickes, 1997; Klein & Hodges, 2001) suggesting that motivation is a critical element under the right circumstances (e.g., see Thomas & Maio, 2008).

The present research examines gender differences in accurate personality perception. What does it mean to view an overall person accurately? Accurate impression formation requires a perceiver to understand the stable traits and dispositions that are present across diverse situations. Assessments of impressions can be separated into different components of interpersonal perception (Biesanz, 2010; Furr, 2008). We focus on two components of interpersonal perception – distinctive and normative accuracy. Distinctive accuracy refers to understanding targets' unique, differentiating profiles of traits – how targets differs from the average person and from each other on specific traits such as "*Is helpful and unselfish with others*" as well as "*Is outgoing, sociable.*"

Normative accuracy refers to understanding how trait levels, on average, vary across targets. Normative accuracy is assessed by how one's impressions of others, on average across different targets, relate to the average person's standing on traits such as, "*Is helpful and unselfish with others*" and "*Is outgoing, sociable.*" High levels of normative accuracy reflect a strong relationship between one's impressions of others, *on average*, and the average person. To

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doi:10.1016/j.jrp.2010.11.001

the extent that one's impressions of others map onto what the average person is like, one is considered to have normatively accurate impressions. *In the present context, normative accuracy levels, for example for females, indexes how the average impression profile for females on average across both all female perceivers and across targets, corresponds with the average person's actual standing on the trait profile*. Both of these forms of perceptive accuracy, distinctive and normative, require perceivers to have knowledge about others, either regarding a specific individual or people in general. Generally, people are capable of forming accurate impressions of others and achieve considerable levels of both distinctive and normative accuracy (Biesanz, 2010). Mathematically these two components of accuracy can be independent.

To understand how perceiver gender may be related to distinctive and normative accuracy, consider nonverbal decoding and empathic accuracy through the componential lens of distinctive and normative accuracy. Standardized nonverbal tasks such as the PONS, IPT, and TONCK are explicitly tests of normative knowledge. These tasks require participants, for instance, to indicate the emotion associated with a given facial expression. What is required of participants is not knowledge of the specific person in the photograph, but generalized knowledge of how facial expressions correspond to emotions *on average for people*. This skill is conceptually equivalent to normative accuracy.

Conversely, high empathic accuracy scores can be achieved through either distinctive or normative accuracy. For instance, consider an empathic accuracy paradigm where couples are videotaped in an interaction and then are later asked what their partner was thinking or feeling at specific points in the interaction. High levels of distinctive accuracy – knowing what your partner was feeling in a way that differs from what the average person would feel like in that situation – would lead to high levels of empathic accuracy. Similarly, high levels of normative accuracy – knowledge of what people on average would feel in that situation – would lead to high levels of empathic accuracy. Both of these forms of accuracy are confounded within standard empathic accuracy designs. However, Lewis, Locher, and Hodges (2010) recently demonstrated that when a target's thoughts in a given situation are consistent with what people would generally think in that situation, perceivers achieve higher levels of empathic accuracy (relative to when a target's thoughts are not normative). Perceivers are better able to infer these thoughts and emotions when they correspond to those of the average person suggesting that normative accuracy may be a large component of empathic accuracy in certain situations.

The distinctive and normative components of impressions are much easier to disentangle in personality perceptions. Thus, the present studies examine whether a perceiver's gender influences his or her capacity to perceive target individuals' personalities either distinctively or normatively. Previous research on nonverbal decoding and empathic accuracy demonstrating a female advantage seems likely to be a result of greater normative accuracy, although past research has not directly and simultaneously examined these components. Thus we expect that, consistent with past research, females will form more accurate impressions of others' personalities, but that this will be a function of normative rather than distinctive accuracy. We examined perceivers' normative and distinctive accuracy across several different broad interpersonal perception designs utilizing the social accuracy model (Biesanz, 2010). The present studies index accuracy through self-other agreement as a target's self-report is argued to be a realistic, knowledgeable indicator of what a person is like (Funder & Colvin, 1997). The current studies investigated whether female perceivers, compared with male perceivers, more accurately understood others' personalities, based on brief videos of target individuals (Samples 1 and 2) and in a more naturalistic setting, where participants interacted with others in dyads in a round-robin design (Sample 3).

2. Study

2.1. Method

2.1.1. Participants

Undergraduates (Sample 1: $N = 293$, 208 females and 85 males; mean age = 18.75 years, $SD = 1.08$; Sample 2: 332 undergraduates, 209 females, 121 males, and 2 unknown; mean age = 18.91 years, $SD = 1.87$; Sample 3: 273 undergraduates, 199 females and 74 males, mean age = 20.90, $SD = 4.16$) participated in exchange for course credit (Samples 1 and 2) or for extra course credit or $20 (Sample 3).

2.1.2. Procedures and measures

2.1.2.1. Samples 1 and 2. Participants watched videotapes of a common set of seven undergraduate females (with different sets of targets in each sample), answering basic "getting-to-know-you" questions posed by a common undergraduate female interviewer for approximately five minutes. After each video perceivers rated the target using the 44-item Big Five Inventory (BFI) on a scale from 1 (*disagree strongly*) to 9 (*agree strongly*). Target self-reports on the BFI were used in both samples to validate perceivers' impressions.

2.1.2.2. Sample 3. Participants engaged in a round-robin "getting-acquainted" design in 45 groups, ranging in size from 3 to 12 (Median = 7).[1] Participants first provided self-assessments and then met with another group member for 3 min in an unstructured interaction before separating and rating the other participant's personality. This process was repeated until all participants in the group had met and provided impressions. All ratings used a 21-item abbreviated version of the BFI with the inclusion of three additional items to assess intelligence, "Is intelligent", "Is bright", and "Receives good grades" on a 1 (disagree strongly) to 7 (agree strongly) rating scale (for the specific BFI items see Human & Biesanz, in press).

2.1.3. Analytical method

The analysis of perceiver impressions followed the social accuracy model (see Biesanz, 2010, for a more detailed description). Modeling self-other agreement across the assessed personality items (44-items in Samples 1 and 2, 24 items in Sample 3) after accounting for perceiver, target, and dyadic random effects, entails a crossed-random effects analysis that requires multilevel modeling. The specific equations for this model are:

$$Y_{ijk} = \beta_{0ij} + \beta_{1ij} TSelf_{jk} + \beta_{2ij} Mean_{jk} + \varepsilon_{ijk} \tag{1.1}$$

$$\begin{aligned} \beta_{0ij} &= \beta_{00} + \beta_{01} Gender_i + u_{0i} + u_{0j} + u_{0(ij)} \\ \beta_{1ij} &= \beta_{10} + \beta_{11} Gender_i + u_{1i} + u_{1j} + u_{1(ij)} \\ \beta_{2ij} &= \beta_{20} + \beta_{21} Gender_i + u_{2i} + u_{2j} + u_{2(ij)}. \end{aligned} \tag{1.2}$$

Here Y_{ijk} is perceiver i's rating of target j on item k, $TSelf_{jk}$ is target j's self-report on item k after subtracting $Mean_{jk}$. $Mean_{jk}$ is the average self-report on item k for individuals of target j's gender. This average self-report was based on a larger set of self-reports ($n = 1157$) from similar participants in other studies. In other words, $Mean_{jk}$ is the normative self-reported personality profile for target j's gender. Perceiver gender ($Gender_i$) is a dummy coded variable with 0 = Male and 1 = Female. We focus on and interpret the four estimated unstandardized regression coefficients of interest in examining gender effects in distinctive and normative accuracy.

[1] This specific dataset was analyzed in Biesanz (2010, Study 2) as an illustrative example for the social accuracy model. Gender effects have not been previously reported for any of the presented data.

Table 1
Social accuracy model of the relationship between perceiver gender and components of accurate interpersonal perception of broad personality traits.

Fixed effect	Sample 1	Sample 2	Sample 3
	Estimate (SE)	Estimate (SE)	Estimate (SE)
Fixed effect estimates			
Intercept ($\hat{\beta}_{00}$)	2.68 (0.61)***	2.29 (0.64)***	0.54 (0.21)*
Target self-report ($\hat{\beta}_{10}$)	0.15 (.05)**	0.25 (0.07)***	0.07 (0.02)***
Normative profile ($\hat{\beta}_{20}$)	0.30 (.07)***	0.27 (0.16)	0.75 (0.05)***
Gender ($\hat{\beta}_{01}$)	−0.60 (.21)**	−0.51 (.18)**	−0.62 (0.24)*
Target self-report × gender ($\hat{\beta}_{11}$)	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)
Normative profile × gender ($\hat{\beta}_{21}$)	0.11 (0.04)**	0.08 (.03)**	0.13 (0.05)*
Residual standard error	1.61	1.67	1.17
Sample size (N)	291	332	273
Dyadic impressions	2037	2324	1626

Note: Gender is dummy coded with 0 = Male and 1 = Female. Samples 1 and 2 used 9-point likert-type scales for the full 44-item BFI whereas Sample 3 used 7-point likert-type scales on an abbreviated modified version of the BFI. Sample size (N) refers to the number of perceivers. Fixed effects estimates are unstandardized regression coefficients.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

First, $\hat{\beta}_{10}$ is the level of distinctive self-other agreement for male perceivers. This indexes the level of agreement between perceiver ratings and target self-reports after adjusting for the normative self-reported personality profile. The coefficient $\hat{\beta}_{11}$ is the difference between female and male perceivers in their average level of distinctive self-other agreement and indexes the extent to which perceiver gender moderates distinctive self-other agreement. Second, $\hat{\beta}_{20}$ is the estimated level of normative agreement for male perceivers – the correspondence between male perceiver ratings and the average person's self-reported profile. The coefficient $\hat{\beta}_{21}$ is the difference between female and male perceivers in their average level of normative self-other agreement and indexes the extent to which perceiver gender moderates normative self-other agreement. In interpreting all four of these coefficients it is important to remember that these represent main effect estimates – average levels of distinctive and normative self-other agreement across a large number of targets. Dyads where the perceiver was acquainted with the target (~1% of dyads across samples) were removed from analysis.

2.2. Results

Table 1 presents the full set of results for all three samples. In sum, across all three samples both male and female perceivers achieved substantial and significant levels of self-other agreement across a broad and diverse array of personality domains. Gender differences in distinctive self-other agreement were neither significant nor substantial. In contrast, female perceivers consistently evidenced significantly greater levels of normative agreement. West, Popp, and Kenny (2008) note that gender effects may be dyadic in nature such that the specific nature of the effect depends on the gender of both perceiver and target. Our findings were consistent with a main effect of perceiver gender.[2]

2.3. Discussion

The present study examined and aimed to clarify the relation of perceiver gender to two different components of accuracy in broad first impressions of others' personalities – distinctive and normative accuracy – using large samples to more precisely estimate effects. Several clear and important findings emerged. First, consistent with previous research on interpersonal accuracy, participants across our two study designs were able to reach substantial levels of distinctive accuracy when forming first impressions of others' personalities, even when limited to watching a short video clip of the target person or after a brief interaction with strangers.

Second, female perceivers did not differ significantly from male perceivers in their ability to discern the distinctive and unique self-reported characteristics of others. The sample sizes in the present manuscript afforded substantial statistical power to detect a small to moderate effect size and consequently a small to moderate difference between males and females in distinctive accuracy can be manifestly excluded.[3] *If* there is a perceiver gender effect for distinctive accuracy in broad personality first impressions, the present data are consistent only with a very small effect size.

Third, female perceivers displayed heightened normative accuracy relative to male perceivers. Normative accuracy can be understood as the extent to which a perceiver's ratings of targets' personality traits correspond to the mean ratings for those traits, across targets. Under the social accuracy model, a perceiver's level of normative accuracy reflects main effects of perception averaged across impressions of different targets. In Sample 3 this effect is estimated across 273 targets as participants served as both perceivers and targets. Higher levels of normative accuracy reflect a strong relationship between one's impression of others and the average person, and thus indicate greater accurate generalization of impressions across targets. In other words, perceivers with heightened normative accuracy form accurately generalized impressions of different targets in a manner that maps onto the average person's standing on traits in the present study (relative to perceivers with lower levels of normative accuracy). Hence, females form more accurately generalized impressions of others across different targets that have a broad and diverse set of personality characteristics than males.

Why might female perceivers evidence higher levels of normative accuracy? Tasks involving interpersonal sensitivity and the decoding of others' behaviors require knowledge of what people are like in general. The female advantage in nonverbal decoding tasks, the PONS, the IPT, and TONCK, and tasks requiring empathic accuracy, may reflect female perceivers' more accurate normative

[2] The round-robin design in Sample 3 allowed us to examine potential dyadic effects. Labeled in terms of (perceiver–target), female–female, female–male, male–female, and male–male dyads accounted for 55.2, 19.0, 18.9, and 6.9% of the 1626 dyadic interactions, respectively. Normative accuracy for female perceivers was $b = .89$ and $b = .88$ for female and male targets, respectively. Normative accuracy for male perceivers was $b = .74$ and $b = .78$ for male and female targets, respectively, all z's > 10, p's < .00001. These results are consistent with a general main effect of perceiver gender.

[3] For instance, a sample size of $N = 300$ has power of .94 to detect a small to medium effect size (i.e., $\rho = .20$) with $\alpha = .05$, two-tailed.

knowledge in these domains. Females on average may be more attuned to what people are generally like because they tend to be more interpersonally oriented than males (Moskowitz, Suh, & Desaulniers, 1994). Indeed this general hypothesis, in the context of nonverbal decoding, was the impetus underlying the generation of the Test of Nonverbal Cue Knowledge (TONCK; Rosip & Hall, 2004). This greater and more accurate knowledge may result in an enhanced ability to understand the generalities underlying others' actions and behaviors that is then reflected in greater normative accuracy in broad personality impressions.

An alternative explanation merits consideration. Females also tend to be more positive in their evaluations of others (e.g., Winquist, Mohr, & Kenny, 1998) and normative accuracy is also related to the positivity of impressions. Since people tend to engage in more socially desirable behaviors than socially undesirable ones, average self-reports of behaviors are closely tied to the positivity of those behaviors (e.g. Edwards, 1957). An accurate understanding of the generalized other is therefore tied to the positivity of characteristics. The present studies cannot expressly rule out gender differences in the positivity of evaluations as an alternative explanation. Yet previous research that ostensibly demonstrate the female positivity effect (e.g., Winquist et al., 1998) may instead reflect a female normative accuracy effect. Importantly, gender differences in the positivity of evaluations cannot account for the observed female advantage in other domains of interpersonal perception such as nonverbal decoding, performance on the PONS, IPT, and TONCK, and empathic accuracy. Only gender differences in normative accuracy, or an accurate understanding of the generalized other, can account for the observed gender differences across the present results *and* previous observed results in other parallel interpersonal perception tasks. A female normative accuracy advantage provides a more parsimonious account of the extant research findings. Future research examining gender differences on normative knowledge across broad personality domains as well as the positivity of impressions is needed to further clarify this account.

3. Summary

Gender is associated with performance on interpersonal perception tasks across different domains but has not been systematically examined with respect to first impressions of others' personalities. Consistent with other interpersonal perception tasks, female perceivers' first impressions were indeed more accurate than male perceivers. Although there were no gender differences in the ability to discern the distinct and unique personality characteristics of others, females, on average, perceived others' personalities with greater normative accuracy and formed first impressions of others' personality traits and characteristics that corresponded more strongly with that of the average person than did males.

Acknowledgments

Meanne Chan, Katherine H. Rogers, Kate L. Parisotto, and Jeremy C. Biesanz, Department of Psychology, University of British Columbia. This research was partially supported by Social Sciences and Humanities Research Council of Canada Grants SSHRC 410-2005-2287 and 410-2008-2643 to Jeremy C. Biesanz.

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