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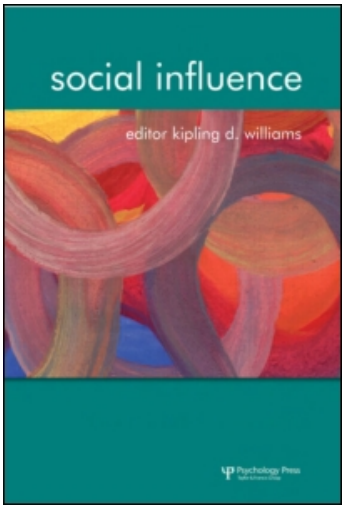

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The influence of handshakes on first impression accuracy

Frank J. Bernieri[a]; Kristen N. Petty[a]
[a] Department of Psychology, Oregon State University, Corvallis, OR, USA

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The influence of handshakes on first impression accuracy

Frank J. Bernieri, and Kristen N. Petty
Department of Psychology, Oregon State University, Corvallis, OR, USA

We examined whether handshakes improved the accuracy with which participants judged a set of targets. Handshakes are interpersonally coordinated behaviors that require motivation and practice to perform well. Therefore conscientiousness may predict how well handshakes are executed. If so, a person's conscientiousness may be more accurately perceived at zero-acquaintance through a handshake. Individual female and male participants rated the personality of five, same-gender targets after each had introduced herself or himself. Half of the targets offered and shook hands with the participant as part of the introduction, half did not. Extraversion was judged most accurately, regardless of handshake condition. Handshaking moderated impression accuracy of conscientiousness, especially between men, which may explain the importance business professionals place on face-to-face interviews.

Keywords: First impression accuracy; Zero-acquaintance; Handshakes.

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The handshake is a near universal behavior in western societies that initiates and sometimes constitutes social interaction (Hall & Hall, 1983). It attracts particular interest in one setting above all—the job interview. A recent search of the Internet revealed nearly a million listings that detailed the importance of a handshake in job interviews (Stewart, Dustin, Barrick, & Darnold, 2008). We find this remarkable given that the total number of empirical studies on handshakes can be counted on one hand.

Overall, the findings from the known studies are consistent: (a) personality appears to be encoded in handshakes (Chaplin, Phillips,

Address correspondence to: Frank J. Bernieri, Department of Psychology, Moreland Hall, Oregon State University, Corvallis, OR 97331, USA. E-mail: Frank.Bernieri@Oregonstate.edu

Thanks go to our 10 targets who tirelessly spent weeks shaking hands (or not) to further science. Portions of these data were presented at the annual meeting of the Midwestern Psychological Association May 6, 2005.

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Brown, Clanton, & Stein, 2000); (b) handshakes impact first impressions (Stewart et al., 2008); and (c) handshakes can influence interaction outcomes like job interview evaluations (Prickett, Bernieri, & Gada-Jain, 2000; Stewart et al., 2008). What we don't know yet is whether handshakes convey trait information *validly*. In other words, does shaking a person's hand increase the accuracy of the first impression formed of them?

Several studies have reported a significant relationship between participants' extraversion and their handshake performance (Astrom, 1994; Astrom & Thorell, 1996; Astrom, Thorell, Holmlund, & d'Elia, 1993; Chaplin et al., 2000; Stewart et al., 2008). When gender was considered, women had less-firm direct handshakes than did men (Chaplin et al., 2000; Stewart et al., 2008). In addition, Chaplin et al. (2000) found a negative relationship to neuroticism and a positive relationship to openness within women but not within men. Chaplin et al. (2000) suggested that these gender differences might be the result of culturally induced differences in handshaking experience, as the practice has historically been more common between men than it has been between women, or between women and men.

In one study that investigated how the attributes of a handshake influences job interviews, Stewart et al. (2008) found that interviewees' handshakes were significantly related to: (a) their own extraversion, (b) the appropriateness of their dress at the time of the interview, and (c) the interviewers' overall evaluation of them. In discussing the known findings regarding handshakes and their impact on the impression formation process, Stewart et al. (2008) suggested that future investigations should determine whether the handshake merely biases impression formation or whether it truly mediates important information about job candidates. In other words, we need to find out whether the handshake serves as a medium through which one can be *known* via a handshake.

In order to test the hypothesis that handshakes make first impressions more accurate, an appropriate methodology needed to be devised that would be intuitively compelling, conceptually precise, and ecologically valid. The idea was to model the common situation where an interviewer might arrange to see all of the finalists after they've been screened from the rest of a much larger applicant pool on the basis of their resumés (e.g., credentials, intelligence, accomplishments, etc.). In this context the presumed task of the interviewer might be to determine which of the highly qualified candidates has the motivation and personality of the prototypical ideal employee, whatever that may be.

In this study five targets of the same sex entered a room roughly 10 seconds apart, one after the other, and approached a same-sex participant who was seated behind a large desk. The targets each briefly introduced themselves to the participant by stating their name, shaking

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hands or not, and then walking across the room to take a seat at a conference table. Within 60 seconds all five targets had introduced themselves to the participant and had sat down. Once the targets were seated, the participant then rated each one, employing 10 items that assessed the five dimensions of the *Big Five*: neuroticism, extraversion, openness, agreeableness, and conscientiousness (Costa & McCrae, 1992). No further communication was allowed, but all five targets were in full view of the participant during the rating procedure.

In this manner the participant was asked to differentiate the five targets on the basis of a 5-second introduction, and possibly a handshake. The judgment task as presented does not require the participant to judge accurately whether a target is high or low on a trait. Instead the task requires the accurate *comparison* of targets with respect to a given trait (e.g., "How high is this applicant on conscientiousness compared to the others?"). This is the kind of judgment that takes place whenever an individual must be selected from a group (e.g., hiring or downsizing.)

The method chosen here was derived from the theoretical work of Heider (1958) and the empirical work of Brunswik (1956). The analysis employed is well suited to examine individual differences and moderator effects because each participant generates an interpretable judgment performance score. Several studies have used this methodology to examine interpersonal judgment performance in many different domains (Bernieri & Brown, 2011; Gifford, 1994; Gillis & Bernieri, 2001; Hogge, 2001; Naumann, Vazire, Rentfrow, & Gosling, 2009; Scherer, 1978).

METHOD

Participants

A total of 141 undergraduate students (35 men, 106 women) ranging in age from 18 to 46 years ($M = 20.2$ years) received course credit for their participation and were treated in accordance with the *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association, 1992).

Target selection

Over 300 introductory psychology students were pre-screened; from these we selected 5 males and 5 females to serve as targets. All received extra credit for the 25–30 minutes they spent completing the NEO PI-R (Costa & McCrae, 1992) and the Ten-Item Personality Inventory (*TIPI*; Gosling, Rentfrow, & Swann, 2003). The reported Cronbach alphas for the TIPI range from .40 to .73 across the five traits and the convergent correlations with the NEO PI-R ranged from .56 to .68 (Gosling et al., 2003).

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TABLE 1
Targets' personality trait *t*-scores ordered from highest trait score in the set to lowest

	Five male targets					*Five female targets*				
Rank	*N*	*E*	*O*	*A*	*C*	*N*	*E*	*O*	*A*	*C*
1	67	72	72	59	71	77	72	80	74	80
2	51	62	71	52	66	65	67	63	53	52
3	48	59	67	52	59	60	41	62	53	47
4	45	43	53	46	30	59	40	61	43	36
5	31	33	38	20	23	34	37	49	20	29
Mean	48.4	53.8	60.2	45.8	49.8	59.0	51.4	63.0	48.6	48.8
SD	12.9	15.6	14.5	15.1	21.8	15.7	16.7	11.1	19.6	19.6

t-scores derived from adult norms reported in Costa and McCrae (1992). A score of 50 represents the population mean.

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The five male and five female targets were selected on the basis of whether they were willing to serve as targets in this experiment and whether their NEO PI-R trait profiles complemented the other targets. We needed to have targets high and low for each trait otherwise participants would be attempting to discriminate between targets who did not actually differ on that trait. Only their NEO PI-R trait domain scores were employed as judgment accuracy criteria. Table 1 displays the *t*-scores of all targets ranked in order for each trait. As can be seen, each set of targets included members that were above and below average for every trait.

Procedure

Each session included one participant and either five female targets or five male targets. We held target sex constant for each participant to reduce the impact of gender differences in NEO PI-R measured traits (Costa & McCrae, 1992) and gender-based stereotype effects known to impact trait judgments (e.g., Biernat, Manis, & Nelson, 1991). When the participants arrived, the experimenter explained to each participant that he or she would meet five individuals, one after the other, in a context similar to how one might meet them as they approached a receptionist desk at a Fortune 500 company. The participant was placed behind a desk in a large office between the door and a conference table at the far end of the room.

Targets entered through a closed door one at a time, roughly 10 seconds apart, and approached the desk where the participant was seated. The ordering of the five targets within each condition was determined by a Latin square such that every target entered the room in every position across participants. Targets made eye contact with the participant and introduced

themselves using a stage name and a standard introduction that remained constant throughout the study, "Hi, I'm *stage name*." They then proceeded to the conference table about 15 feet away taking a seat that allowed them to face the participant. Participants rated each target after they all had entered the room and sat down. The rating form employed the same 10 items that constitute the Ten Item Personality Inventory validated by Gosling and colleagues (2003). No communication took place between participant and targets other than the greeting. Targets were told to keep their clothing and grooming relatively constant throughout the course of the study. Two participants were excluded because they were acquainted with one or more of the targets.

The handshake manipulation was determined randomly. In roughly half of the sessions all five targets initiated a handshake with the participant when introducing themselves. All targets were right-handed. We did not record the handedness of participants. Targets were never instructed *how* they should shake the participants' hands because any such training would likely have interfered with the natural impressions of targets' personalities normally conveyed through their unschooled handshakes. We assumed that targets' handshakes would be relatively constant, both within and between the sessions involving handshakes. Participants were not informed about the manipulation of handshakes. Debriefings confirmed that no participant was aware that the handshake manipulation was a feature of the study.

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RESULTS

An accuracy coefficient was calculated for each individual for each trait by correlating a participant's judgments of the five targets with the targets' NEO PI-R trait scores. This procedure yielded a correlation coefficient based on 3 *df* that indicated the agreement between the targets' relative standing on this trait compared to each other, and the participant's ratings of them. A high positive correlation meant that the participant effectively identified the targets who were high and low on that particular trait relative to the other targets. An accuracy correlation of .00 would reflect random judgments or chance levels of accuracy. Negative correlations could result if a participant perceived the inverse of reality (i.e., thought the targets who were high on a trait were low, or vice versa).

Trait accuracy coefficients were transformed into Fisher *Z*s for analysis and transformed back into Pearson *r*s for display. The null hypothesis of chance level of accuracy is reflected in coefficients that are distributed around zero. Accuracy is indicated to the extent that the accuracy coefficients are significantly above zero. Therefore *t*-tests against zero were performed for each trait judged. Employing this test, extraversion

TABLE 2
Mean accuracy coefficients[a] for judging conscientiousness

Target sex	*Male*	*Female*	*Male*	*Female*	
Perceiver sex	Male	Female	Female	Male	*M*
No Handshake	−.27	−.15	−.19	−.17	−.21*[b]
Handshake	+.60*[b]	−.06	+.09	−.21	+.07

[a]The Fisher's *z*-transformed correlation between a perceiver's TIPI (Gosling et al., 2003) trait judgments of five targets and the targets' trait domain scores on the NEO PI-R (Costa & McCrae, 1992). [b]Significance from a *t*-test against zero testing the null hypothesis that the population of accuracy coefficients is distributed around zero. *$p < .05$.

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($M = .45$) was the only trait judged accurately collapsing across handshake conditions, $t_{(138)} = 7.73$, $p < .0001$.

The data were analyzed with a target sex by participant sex by handshake condition ($2 \times 2 \times 2$) ANOVA. The main effect of Handshake was significant for the judgment of only one trait, conscientiousness, $F(1, 131) = 7.03$, $p < .01$, $r = .23$. Conscientiousness was judged more accurately when participants shook hands with the targets than when they did not ($M = .07$ versus $M = -.21$). In fact without handshakes, conscientiousness accuracy was significantly negative, meaning it was the inverse of reality. This handshake effect was moderated by a significant three-way interaction, $F(1, 131) = 4.75$, $p < .05$, $r = .19$, and a near significant target sex by handshake interaction, $F(1, 131) = 3.72$, $p < .06$, $r = .17$. These three effects were driven by the results within the male–male dyads where handshakes increased the accuracy of judging conscientiousness from an accuracy coefficient of $M = -.27$ to $M = +.60$. Table 2 displays the mean accuracy coefficients achieved for conscientiousness broken down by handshake condition and sex.

Two other effects were observed. Participant sex significantly impacted the accuracy for judging extraversion, $F(1, 131) = 4.23$, $p < .05$, $r = .18$, such that women ($M = .46$) were more accurate judging extraversion than were men ($M = .25$). Finally, a significant target sex effect emerged for openness, $F(1, 131) = 16.04$, $p < .00001$, $r = .33$, such that the openness of the men ($M = .29$) was more accurately judged than was the openness of women ($M = -.26$).

DISCUSSION

In the present investigation extraversion was the only trait accurately detected across both handshake conditions. This result is consistent with

those reported in other studies investigating the accuracy of impressions at zero acquaintance (Ambady, Hallahan, & Rosenthal, 1995; Borkenau & Liebler, 1992; Kenny, 1994; Kenny & West, 2008). What was notable about this study, however, was the manipulation of the simple handshake.

Our primary objective was to determine whether the act of shaking someone's hand—a near universal behavior in western societies that can occur whenever two people introduce themselves to one another for the very first time—would increase the accuracy of a first impression. For the most part, it did not. However, we consider the one exception of conscientiousness within male–male introductions to be intriguing. This result was not hypothesized or predicted, despite the fact that this is entirely consistent with the conventional wisdom extolling the significance of face-to-face interviews and the all important handshake. If one assumes that conscientiousness is a fundamental determinant of job performance, and conscientiousness is exposed through handshaking, then it would justify the value placed on it as part of the evaluation process. But this begs the question, *why is conscientiousness in a handshake?*

We believe an important clue to this question lies in the results of the male–male dyads. Conscientiousness is the trait that most generally determines how well individuals complete any complex skill behavior when afforded opportunities to learn and practice them (e.g., playing a musical instrument, writing, work-related tasks, physical appearance, etc.). Thus conscientiousness should be revealed in virtually any task or behavior that can be performed *better* with practice and effort (e.g., Gosling, Gaddis, & Vazire, 2008; Naumann et al., 2009).

The ubiquitous handshake may not be as ritualized or as precise as the Japanese tea ceremony, but it certainly requires some knowledge of the prevailing social norms and some interpersonal coordination (Schriffin, 1974). According to Emily Post (1940), "the proper handshake is made briefly: but there should be a feeling of strength and warmth to the clasp, and as in bowing, one should at the same time look into the countenance of the person whose hand one takes" (p. 23). Undoubtedly, people vary to the extent that shaking hands comes naturally to them, but we are arguing that anyone can become *better* at shaking hands through effort and plenty of practice.

More than women, men become accustomed to this greeting at an early age and this type of greeting pervades their interpersonal lives (Chaplin et al., 2000). In addition, subtle social sanctions within the western culture exist for poor handshakes as indicated in the names given to poorly executed handshakes (e.g., the "push off", the "dead fish") in the popular media (Demarais & White, 2004) that clearly poke fun at those with inadequate handshakes. By the time he is in college, a conscientious male has had all the experience needed to master this interpersonal ritual and has adequately

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sampled enough handshakes to evaluate the performance of others. Conscientiousness among young women, however, is not likely to predict their handshake skill, either in its performance or its evaluation, because they may not have as much opportunity to practice as their male counterparts.

More generally, we argue that conscientiousness should be more accurately perceived through handshakes only to the extent that a handshake is a commonly experienced, well-rehearsed, important activity for both individuals. Therefore we predict that, among professional women who shake hands regularly as part their professional culture, conscientiousness would be revealed in their handshake as strongly as it is in men. Future research should be able to test this hypothesis directly.

It should be noted that the handshake manipulated in the present study was probably a more elaborate and complicated behavior than the handshakes examined in previous studies (Astrom, 1994; Astrom & Thorell, 1996; Astrom et al., 1993; Chaplin et al., 2000; Stewart et al., 2008). If our theorizing is correct about conscientiousness being accurately readable to the extent one can observe a complicated task being performed, then the results we found here might be more extreme than if we had used a simpler handshake manipulation. Another point worth making is that previous studies did not isolate the data of male–male dyads from the other dyad compositions despite reporting target sex effects and/or coder sex effects (Chaplin et al., 2000; Stewart et al., 2008). It is therefore conceivable that the effects found here for conscientiousness were overlooked.

So, are handshakes a window into one's soul? They certainly play a part in generating a first impression, but the data reported here suggest that, with the possible exception of conscientiousness, handshakes should not be considered a necessary diagnostic tool in the evaluation of others. They may, however, predict whether someone will show up for their next appointment with you on time.

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