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Seeking Social Connectedness: Interdependent Self-Construal and Impression Formation Using Photographic Cues of Social Connectedness

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ABSTRACT. Impression formation research has traditionally focused on either the characteristics of the target or of the participant, failing to examine their interplay. In the present study, we explored the role of interdependent self-construal on ratings of others who are portrayed as alone or connected. We hypothesized that participants with an interdependent view of the self would prefer others who are portrayed as socially connected, while the opposite would be true for participants low on interdependence. Results showed that college students high on interdependence rated a university professor photographed with another person relatively more positively than a professor photographed alone. This pattern was reversed for participants low on interdependence.

Keywords: impression formation, self-concept, social perception

WHETHER IT IS A POLITICIAN TRYING to win votes, a professor trying to recruit students, or someone looking for love on the Internet, people are often judged by others based on minimal information. Although there is an abundance of research studies examining how impressions are formed (e.g. Asch, 1946; Brewer, 1988; Fiske & Neuberg, 1990; Kopetz & Kruglanski, 2008), most of these studies examine individual characteristics of the target person, such as attractiveness or warmth, without taking into account how social surroundings can affect

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the impression these targets convey. Furthermore, impression formation studies usually focus on either the characteristics of the target (e.g. Surawski & Ossoff, 2006) or of the participant (e.g. Flynn, 2005), failing to examine their interplay. Yet social cognition research has shown that how one views the self affects one's perception of the social world and others in it (e.g. Green & Sedikides, 2001), and should thereby play a role in impression formation. A central aspect of the self-concept is one's self-construal—whether one sees oneself as independent or interdependent (Markus & Kitayama, 1991). While an independent image of the self emphasizes the self separate from others, with a focus on one's internal traits, skills, and attributes, an interdependent view of the self stresses connectedness, social context, and relationships and has been shown to play a role in a number of cognitive and affective processes (e.g. Cross, Morris, & Gore, 2002; Gabriel, Renaud, & Tippin, 2007). The current research focused on the interplay between the perceivers' interdependent self-construal and the portrayal of a target as alone versus socially connected in predicting the resulting impression that the target will elicit.

Social Connectedness and Interdependent Self-Construal

One of the central human motives is the internal drive to form lasting, positive attachments with other human beings (Baumeister & Leary, 1995; Deci & Ryan, 2000). Establishing relationships is a natural human response that has been shown to arise spontaneously in many naturalistic and experimental settings, and these bonds are often difficult to break. Additionally, research has shown that people stigmatize others who are viewed as socially disconnected (Lau & Gruen, 1992; Rotenberg, 1998). In one such study, participants who read vignettes describing a target person as lonely or non-lonely rated the lonely person much more negatively than the non-lonely one (Lau & Gruen, 1992). However, these studies have focused on overt descriptions of others portrayed as lonely, and research has yet to be conducted using more subtle cues of social connectedness. While it is known that people are extremely sensitive to subtle cues about personal connectedness or rejection (Leary & Baumeister, 2000; Pickett, Gardner, & Knowles, 2004), little is known about the effects of such cues regarding others' connectedness.

Although close relationships appear to be important for all human beings, there are differences in the influence that these relationships have on an individual's sense of self. Perhaps the best example of this is provided by the research examining the difference in self-concept between collectivistic and individualistic cultures (Markus & Kitayama, 1991). Individualistic cultures such as the United States focus on the self as unique, and behavior is determined through referencing one's own internal thoughts and feelings. On the other hand, collectivistic cultures such as Japan are defined by interdependence, where people feel fundamentally connected to other human beings, and behavior is determined by the expectations of the group one belongs to. This difference in whether one views the

self as independent or interdependent has been referred to as one's self-construal (Markus & Kitayama, 1991).

While cultural differences in the prominence of independent and interdependent self-construal are well documented (e.g. Markus & Kitayama, 1991), there is also evidence that even within a single culture, individuals vary greatly in their level of independent and interdependent self-construal (Singelis, 1994). Moreover, it has been suggested that there is a dual self within all individuals that contain a private self (independence) and a collective self (interdependent) (Singelis, 1994). While culture plays a role in fostering one self more than the other, both selves exist in all individuals, and it is possible to simultaneously possess both a well-developed interdependent and independent self-construal (e.g. Cross & Markus, 1991).

A number of studies have examined the consequences of possessing an interdependent self-construal for cognition, emotions, motivations, and behavior. For example, individuals who are highly interdependent have been found to rate relational words more positively (Cross, Morris, & Gore, 2002), report higher self-confidence when thinking of a close friend (Gabriel, Reaud, & Tippin, 2007), and sit closer to a new acquaintance (Holland, Roeder, van Baaren, Brandt, & Hannover, 2003) than those who are relatively less interdependent. Overall, those with a highly interdependent self-construal put more effort into being close to others and get more personal satisfaction from their close relationships than individuals who perceive themselves as less interdependent (Markus & Kitayama, 1991). However, studies have yet to examine the relation, if any, between a person's interdependent self-construal and the first impressions they form of others.

Impression Formation

Studies examining how people form impressions of others have been commonplace in social psychology since Asch's first impression formation experiment in 1946. Since then, certain traits (e.g. warmth; Asch 1946) and physical attributes of a target person (e.g. attractiveness, body position, facial maturity etc; Schwarz and Kurz, 1989; Surawski & Ossoff, 2006) have been shown to influence observers' ratings of the target's competence, trustworthiness, and sincerity. In addition, other research has shown that respondents' characteristics also play a role in how they perceived others. Most notably, Byrne (1971) has shown that people rate others more positively when they share similar attitudes and traits. Similarly, motivational influences of the perceiver, such as the expectation of future interactions with the target (Neuberg & Fiske, 1987), also play a role in impression formation. In a series of studies, participants who were told they would be working with the target person in the future formed a more positive impression of the target than those who did not expect a future interaction (Neuberg & Fiske, 1987).

The present study can usefully be considered from the perspective of David Funder's (1995) Realistic Accuracy Model of social perception. This model outlines target and perceiver effects as two fundamental factors that will influence judgments about traits such as competence and sociability. Funder argues that the realistic accuracy model is a common process model that can be used to understand the effects of diverse target and perceiver variables on social perception. The model emphasizes the importance of gauging how variables will affect the relevance, availability, detection, and utilization of target cues. The theory notes the possibility of important perceiver by information interactions that may make certain perceivers sensitive to particular kinds of target information. That is, certain judges may prefer to use or be able to perceive certain kinds of information but not other kinds. For example, one study showed that when honesty was an important part of one's self concept, one tended to be particularly attentive to information about the honesty of others (Sedikides & Skowronski, 1993). We suggest that individuals with an interdependent self construal will be particularly attentive to information that reflects on the level of interconnectedness of others and that this information will be used in how they make judgements about the target's sociability and competence. Informational sensitivity of this sort can perhaps be explained in terms of chronic accessibility of relatedness cues in the minds of interdependent individuals (Bargh & Pratto, 1986).

Present Study

In the present investigation, we sought to examine the interplay of perceiver and target characteristics in impression formation. Participants in our study examined a portfolio of a potential graduate research supervisor. The portfolio included information typically seen on a university professor's webpage, as well as a photograph of the supervisor, which was manipulated to portray the supervisor alone or with another person (a spouse or a child). We hypothesized that participants with an interdependent self-construal would form more positive impressions and report greater interpersonal attraction towards targets who were portrayed with another person than participants who did not rate themselves as interdependent. We also expected that participants would not attribute their ratings of the target to the photograph.

Method

Participants & Procedure

One hundred and sixty three college students (56% female) ages 17 to 35 ($M = 20.15$) were recruited through a subject pool and classified ads for a study on impression formation. Participants arrived in the lab and completed a

questionnaire that included a measure of self-construal. They were then presented with a portfolio of a professor and given 7 minutes to view and familiarize themselves with the portfolio. The contents of each portfolio were the same except for the photograph of the professor, who was pictured either alone, with a spouse, or with a child. In addition, the professor was either pictured as male or female, and the first name was changed accordingly (Daniel vs. Danielle). The portfolios were randomly distributed in a closed folder, so that the experimenter was unaware of the experimental condition. Twenty-five males and 27 females received the portfolio with the target pictured alone, 23 males and 31 females saw the photograph of the target with a spouse, and 24 males and 33 females saw the target with a child. After seven minutes had elapsed, the experimenter brought the participant a final questionnaire which asked participants to evaluate the professor on a number of dimensions and to rate the impact of each component of the portfolio on their evaluations.

Materials

Self-construal questionnaire. Participants completed the 24-item self-construal scale (Singelis, 1994) that assessed independent and interdependent self-construal. Two separate subscales were computed, one for independent self-construal (e.g. “my personal identity independent of others is very important to me”) and another for interdependent self-construal (e.g. “My happiness depends on the happiness of those around me.”). Responses were made on a scale of 1 (strongly agree) to 7 (strongly disagree). The reliability for the interdependent subscale was acceptable, $\alpha = .70$ (Nunnally, 1978). The independent self-construal subscale was not used in any analyses.

Professor portfolio. A portfolio of a fictional associate professor was composed, which included aspects typically found on a professor’s webpage. The portfolio included the professor’s contact information, education history, a paragraph describing research interests, books and selected articles, current and recent graduate students, recent visiting fellows, recent courses taught, grants received, recent honours and distinctions, and recent invited and keynote addresses. This information remained constant across all portfolios. In addition, the portfolios included a picture of the professor that was manipulated to create the experimental conditions. There were three picture conditions for the male and female professor—professor alone, professor with spouse, and professor with child (see appendix). We included two different conditions where the professor was portrayed as socially connected to ensure that we were effectively tapping into the construct of social connectedness rather than into a specific characteristic of a particular type of relationship (e.g. nurturance).

Post-questionnaire. To assess the impression elicited by the target, participants were asked to rate the professor on 9 items by indicating their agreement with the statements (i.e. he/she is social) on a scale of 1 ('not true at all') to 10 ('very true'), and on the two items indicating the extent to which they would like to work with the professor, on a scale of 1 ('not at all') to 9 ('very much'). These two items were transformed from a 9-point to a 10-point scale, and then combined with the other 9 items to create the dependent variable of the positive impression the participant had of the target ($\alpha = 0.85$). Additionally, the items could also be separated into three different subscales: sociability (4 items: "He/She is very warm", "He/She is friendly", "He/She is social", and "He/She is easygoing", $\alpha = 0.85$), competence (5 items: "He/She is informative", "He/She has many contacts in academia", "He/She is well respected", "He/she is very competent", and "He/She is knowledgeable in their field", $\alpha = 0.80$) and interpersonal attraction towards the professor (2 items: "How much do you think that you would like working with this professor?" and "How much would you want him/her as your supervisor?", $\alpha = 0.86$).

Impact of photograph. As a manipulation check, participants were asked as part of the post-questionnaire to rank the extent to which their ratings of interpersonal attraction were influenced by each of the components of the portfolio. These components were educational background, publications, current research interests, photograph, honors and distinctions, grants, recent courses taught, and keynote addresses.

Results

Preliminary Analyses

Relative importance of the photograph was assessed in order to determine whether the participants were aware of the manipulation. Participants were asked to rank the eight components of the portfolio in order of importance (1- highest, 8- lowest). The photograph was ranked as the second lowest of the categories in terms of importance ($M = 5.72$, $SD = 2.49$). This serves as a manipulation check to ensure that participants were unaware that their impressions were influenced by the photograph.

The mean and standard deviations for the main variables used in the study are presented in Table 1. It can be seen that participants' global ratings of the portfolios were relatively high and that ratings of competence were particularly high. It can also be seen that ratings of sociability, competence, and interpersonal attraction were moderately positively correlated with one another (mean $r = .40$), supporting the creation of a global index.

TABLE 1. Means, Standard Deviations and Correlations of Study Variables

	Mean	SD	1	2	3	4	5	6	7
1. Participant Gender	1.56	.50	–						
2. Target Gender	1.51	.50	–.01	–					
3. Interdependence	4.97	.70	–.01	.07	–				
4. Global rating of target	7.76	.93	.09	.01	.21*	–			
5. Sociability of target	6.64	1.39	.01	–.02	.13	.85**	–		
6. Competence of target	8.70	.88	.05	.05	.15	.77**	.42**	–	
7. Interpersonal attraction	7.64	1.56	.19*	.00	.25**	.69**	.40**	.37**	–

Note. *Correlation is significant at the .05 level.

**Correlation is significant at the .001 level.

Central Analyses

A hierarchical multiple regression was performed to examine the relation of interdependence and photo condition with global ratings of the prospective supervisor. Gender of the participant and of the professor were included in this regression as non-theoretically relevant covariates. Specifically, gender of the participant, gender in the photograph, level of interdependence, and two contrast codes for treatment condition were entered together as a first block. Contrast 1 compared the two relatedness conditions with the alone photo condition (child condition = +1, spouse condition = +1, alone condition = –2), whereas contrast 2 compared the two relatedness conditions with each other (child condition = –1, spouse condition = +1, alone condition = 0). All variables were standardized for the regression. Two interaction terms between interdependence and each of the two contrasts were computed and entered as a second block in the regression (see Table 2).

Table 2 shows the standardized regression coefficients and t-tests for each of the predictors. In the first step, interdependent self-construal was significantly related to higher ratings of the professor ($\beta = .20$, $p < .05$), $R^2 = .06$, $F(5,157) = 2.06$, $p = .07$. The second step of the regression accounted for a significant multiple ΔR^2 of .06, $F(2, 155) = 5.08$, $p < .01$. It can also be seen that the predicted interaction between interdependence and contrast 1 was obtained ($\beta = .19$, $p < .05$), reflecting that participants who were high in interdependence were especially likely to rate the professor more positively in the photo with spouse and photo with child conditions relative to the alone condition. Figure 1 depicts this relationship. A marginally significant interaction effect between interdependence and contrast 2 ($\beta = -.14$, $p = .06$) indicated that interdependent participants were particularly likely to rate the professor highly when he or she appeared in a photo with a child. No other main effects approached significance (p 's $> .20$).

TABLE 2. Standardized Regression Coefficients of Global Rating of Target

Predictors	β	t	p
Set 1			
Participant Gender	.08	1.08	.28
Target Gender	−.00	−.02	.98
Interdependence	.20	2.93	.01
Contrast 1 (photograph of target alone vs. with another person)	.08	1.00	.32
Contrast 2 (photograph of target with spouse vs. with child)	−.06	−.79	.43
Set 2			
Interdependence * Contrast 1	.19	2.46	.02
Interdependence * Contrast 2	−.14	−1.87	.06

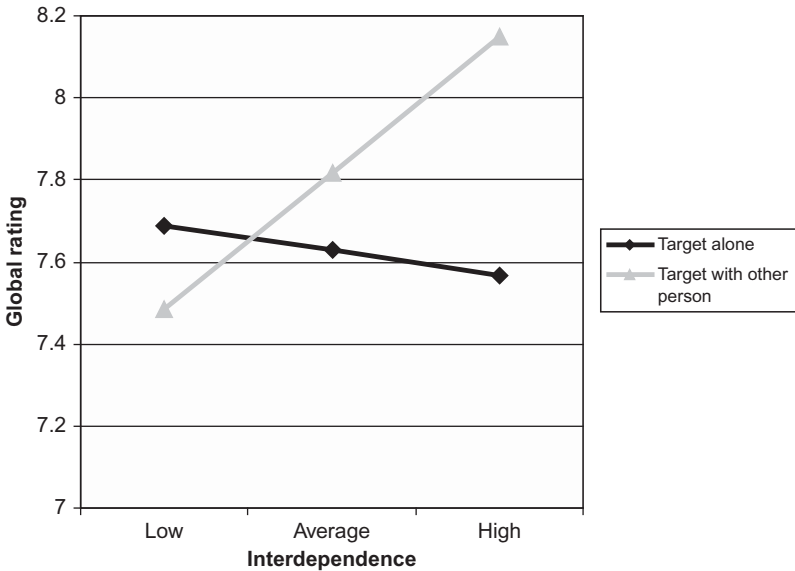


FIGURE 1. Mean global rating of target by contrast 1 (target alone versus with another person) across levels of interdependence.

Supplemental Analyses

To more closely examine how interdependence and relatedness cues were associated with the ratings of the professors, we repeated the regression analysis above for each of the three components of the global rating: sociability, competence and interpersonal attraction. As neither the participant gender, target gender, nor any interactions with those variables were significant in the overall regression, these variables were not included for the separate analyses. The regression for ratings of sociability revealed a significant interaction between interdependence and contrast 1 ($\beta = .18, p = .03$). The regression for ratings of competence revealed a marginally significant interaction between interdependence and contrast 1 ($\beta = .15, p = .06$), as well as a marginally significant main effect for interdependence ($\beta = .15, p = .06$). The regression for ratings of interpersonal attraction towards the professor revealed a significant main effect for level of interdependence ($\beta = .26, p = .001$). This regression revealed no other effects approaching significance (p 's $> .10$). However, it should be noted that the interaction between interdependence and contrast 1 showed a trend in the expected direction ($\beta = .12, p = .12$). Together, these specific regressions suggest that interdependence combined with relatedness cues primarily to influence judgments of sociability and competence rather than judgments of interpersonal attraction.

Discussion

Given the importance of social connectedness in our lives, we sought to examine whether a person portrayed as socially connected would convey a different impression than a person represented alone. Moreover, we were interested in whether the perceiver's self-construal would moderate this relationship. We found that individuals high on interdependence rated the professor photographed with another person relatively more positively than the professor photographed alone, while this pattern was reversed for participants low on interdependence. Furthermore, we found a marginally significant effect for the interaction of interdependence and type of relationship portrayed in the two relatedness conditions, suggesting that interdependent individuals somewhat preferred a professor pictured with a child to one portrayed with a spouse. Future research should address the potential reasons for such a preference.

Research in social cognition has examined the processes through which impressions are formed, proposing a variety of models using both serial (Brewer, 1988; Fiske & Neuberg, 1990) and parallel (Kunda & Thagard, 1996) activation of interconnected nodes in a spreading activation network. While these models sometimes take into account the motivations of the perceiver, such as a goal to form an accurate impression, or a motivation to like the target due to an impending opportunity to collaborate with them on a subsequent task, non-situational characteristics of the perceiver are usually ignored. However, other research in

social cognition has shown that personal characteristics, and especially a person's self-concept, can affect perception of the social world and of others in it (e.g. Green & Sedikides, 2001). Our research provides support for this notion in an impression formation context, suggesting that the social cognition models of impression formation need to account for the role of perceivers' characteristics.

Funder's (1995) Realistic Accuracy Model suggests that both target and perceiver variables play an important role in social perception, noting the necessity of examining their interaction to better understand how social judgments are formed. Our findings provide a concrete example of such an interaction, suggesting that perceivers are particularly attentive to cues that are relevant to their own self-concept. While previous research within the Realistic Accuracy Model has focused on behavioral cues, we have examined how a visual cue can also affect the perception and judgment of a target.

Previous research has shown that numerous visual cues, such as the target's posture, facial hair, or the presence of eyeglasses, can affect impression formation (Hellstrom & Tekle, 1994; Schwarz & Kurz, 1989). Indeed, a great deal of research has focused on the importance of physical attractiveness in impression formation, showing that attractive others are not only more liked but are also perceived as smarter and more competent (Jackson, Hunter, & Hodge, 1995; Miller, 1970). Our research points to another important characteristic that can be conveyed via a photograph and that influences perceptions of the target: whether the target is portrayed alone or in a relationship with another person.

In addition to shedding light on processes of impression formation, our findings also have practical implications for self-presentation. Numerous studies have examined how individuals present themselves, both in real-life interactions and in online situations (e.g. Ellison, Heino, & Gibbs, 2006; Nezelek & Leary, 2002). Our research points to an important aspect of presented material in forming impressions. Namely, a photograph of the person alone or with others can have an impact on the impression conveyed by the material. However, this impression can depend in part on the characteristics of the perceiver. With the proliferation of the Internet in numerous contexts, from personal web pages to dating sites and online social networks, many individuals are trying to convey a specific impression of themselves to those who are viewing their sites or profiles (Gosling, Gaddis, & Vazire, 2007). Our research suggests that the way people present themselves should, in part, depend on the kind of people they are trying to attract.

An important limitation in our study was its focus on only one type of target person (a potential research supervisor) and on three dimensions of first impressions, limiting the generalizability of our findings. Further research should examine whether our results could be replicated with target persons representing other relationships, such as potential romantic partners, roommates, or employees, as well as with other dimensions of first impressions such as personality traits or intelligence. Additionally, it would be important to examine whether subtle cues of social connectedness can operate in various contexts, activated through such

mechanisms as verbal descriptions of behavior or personality characteristics of the target person, and in naturalistic settings, such as bedrooms or offices (see Gosling, Ko, Mannarelli, & Morris, 2002). Finally, as differences in self-construal have previously been linked to cultural differences (Markus & Kitayama, 1991), future research should explore whether culture can moderate the effects found in our study.

Overall, our study has yielded new information for understanding how a perceiver's characteristics interact with target information. Recognizing what impression is being conveyed and who will respond to it may be helpful in an era where an increasing number of decisions are made based on minimal information.

AUTHOR NOTES

Marina Milyavskaya is a doctoral student in the Clinical Psychology Program at McGill University. **Jennifer Reoch** received a B.Sc in Psychology from McGill University. **Richard F. Koestner** is a Professor in the Department of Psychology at McGill University. He conducts research on goal-setting, self-regulation and internalization processes. **Gaëtan F. Losier** is a Professor of Psychology at Université de Moncton. His research interests include adult clinical psychology, humanistic and cognitive behavioural psychotherapies, human motivation and the self.

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APPENDIX

Experimental Manipulation: Photographs of Professor

The experimental conditions were created using the following photographs (figures A1 and A2) to portray the professor as either alone or as socially connected.



FIGURE A1. Photographs of male professor alone, with spouse, and with child.



FIGURE A2. Photographs of female professor alone, with spouse, and with child.