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The Role of Need for Affect and Need for Cognition in Self-Evaluation

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Abstract

The primary aim of this study was to investigate whether individual differences in affective and cognitive orientation predict the relative importance of warmth-related and competence-related traits in self-evaluation. 99 participants (85 females) completed the Need for Affect and Need for Cognition scales. Later, participants rated the extent to which warmth- and competence-related traits described their own personality. In line with our hypotheses, affective people expressed more positive evaluations of warmth traits and more negative evaluations of cold traits relative to cognitive people, who expressed more positive evaluations of competence traits and more negative evaluations of incompetence traits. This differentiation has implications for self-evaluation processes and individual differences in affective and cognitive orientation.

Keywords: Need for affect; need for cognition; self-evaluation; warmth; competence.

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Introduction

Prominent models of social perception state that information about others can be categorized along two global dimensions, labelled as warmth and competence or communion and agency (for reviews, see Abele & Wojciszke, 2007; Cuddy, Fiske, & Glick, 2008; Fiske, Cuddy, & Glick, 2007). According to a functional interpretation of these classes of information (Abele & Wojciszke, 2007; Fiske et al., 2007), when individuals meet a new person they want to know the other's intentions – that is, whether the target represents an opportunity or a threat (*warmth* dimension) – and whether they possess the ability to carry out those aims (*competence* dimension). Research has demonstrated that the relative importance of the warmth and competence dimensions differs across contexts (e.g., Cuddy, Glick, & Beninger, 2011; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005; Kervyn, Yzerbyt, & Judd, 2010; Wojciszke & Abele, 2008). For instance, warmth judgments have been found to be elaborated upon more quickly than competence judgments and have been observed to have a greater impact on evaluations of others (Wojciszke & Abele, 2008). In some circumstances, however, perceptions of competence can be more important than perceptions of warmth (Cuddy et al., 2011). For example, competence can have a stronger effect when people evaluate themselves and closely related others compared with when they evaluate strangers (Abele & Wojciszke, 2007). The relative use of warmth and competence depends also on cultural orientation: a collectivist orientation emphasizes the warmth dimension, whereas an individualist orientation emphasizes the competence dimension (Wojciszke, 1997).

Building upon these studies, Aquino, Haddock, Maio, Wolf, and Alparone (2016) demonstrated that when evaluating other people, the degree to which individuals rely upon warmth-relevant and competence-relevant information is associated with individual differences in the Need for Affect (NFA) and the Need for Cognition (NFC). NFA considers individual differences in the degree to which people approach or avoid situations that induce emotions (Maio & Esses, 2001). People high in NFA are motivated to understand both their own and others' emotions, and they tend to rely upon emotional information in attitude formation (Huskinson & Haddock, 2004). In contrast, NFC considers individual differences in the tendency to engage in, and enjoy, complex activities requiring cognitive effort (Cacioppo & Petty, 1982). People high in NFC are more likely to rely upon information about an object's attributes when evaluating it (Haugtvedt, Petty, & Cacioppo, 1992). In their work, Aquino et al., (2016) showed that the difference in valence ratings between warm and cold traits mediated the effect of NFA on warmth-related attitudes, whereas the difference in valence ratings between competent and incompetent traits mediated the effect of NFC on competence-related attitudes. Put differently, when affective people (i.e., those high in NFA) are asked to select someone to be friend or lover, they will probably select someone they consider to be warm, whereas cognitive people (i.e., those high in NFC) will probably select someone they consider to be competent. These effects have been replicated in a number of studies (see Haddock & Maio, 2019, for a review).

One question that has not been addressed is the extent to which NFA and NFC are linked with individuals' perceptions of their own central traits, which we refer to as the self-evaluation effect. Previous studies have found that people tend to judge others on dimensions that are personally important to themselves (Fong & Markus, 1982, Lewicki, 1984; Markus & Wurf, 1987). As applied to the current context, we reasoned that if affective people rely upon warmth-relevant traits when evaluating others, they should evaluate themselves very highly on warm traits relative to cold traits – accentuating differences on this dimension. Correspondingly, we reasoned that if cognitive people rely upon competence-relevant traits when evaluating others, they should evaluate themselves very highly on competence traits relative to incompetence traits – accentuating differences on this dimension.

The Present Research

In the present study, we investigate whether individual differences in affective and cognitive orientation predict the relative importance of warmth-related and competence-related traits in self-evaluation. In other words, we explored the degree to which NFA and NFC orientation impact the evaluation of warmth- and competence-related traits when people describe themselves. This is important in extending our knowledge about the role of motivational perspectives in evaluative judgements, as well as demonstrating whether the importance of warmth and competence in self-evaluation can vary as a function of individual differences.

We expected NFA to be positively correlated with evaluations of warmth-relevant traits and negatively correlated with evaluations of cold-relevant traits. We further expected a greater divergence in the relative magnitude of these associations for affective individuals relative to cognitive individuals. Similarly, we expected NFC to be positively correlated with evaluations of competence-relevant traits and negatively correlated with evaluations of incompetence-related traits. We further expected a greater divergence in the relative magnitude of these associations for cognitive individuals relative to affective individuals.

Method

The data set (along with a guideline for readers and separate correlations for approach and avoidance dimension of NFA) is available in the Open Science Framework (https://osf.io/mkedef/?view_only=c855d8f414774ef89bfda1ac1062603d).

Power estimation, participants, and design

For our hypotheses regarding the association of affective-cognitive individual orientation (i.e., NFA and NFC) with warmth-related and competence related traits, we expected a medium effect size ($r = .30$, Cohen, 1988). We hypothesized a medium effect size given the results of previous studies

investigating the role of affective and cognitive individual differences in attitude-relevant domains (see Haddock & Maio, 2019). Regarding our hypotheses about greater differentiation in *matching* traits, we expected a larger effect ($r > .40$, Cohen, 1988).

An a priori power analysis was conducted for sample size estimation (using Sample Size Calculator for Multiple Regression, Soper, 2020). We ran the power analyses for the more conservative analysis in the present research (i.e., multiple regressions). With an $\alpha = .025$ and power = .90, the sample size necessary to detect a medium effect size is approximately $n = 103$.

99 students of Chieti-Pescara University (85 females; $M_{age} = 21.15$ years, $SD = 2.50$) completed an online questionnaire. Participants were recruited on a voluntary basis. Before participating in the surveys, all participants provided informed consent. No compensation was provided for participating in the study.

Overview

The study was conducted using Qualtrics. Participants were informed that the study involved expressing their views about personality traits. In the first part of the study, participants were informed that participation was voluntary, and that data were collected anonymously and used for research purposes only. The first section of the questionnaire aimed to assess demographic characteristics (i.e., age and gender). Then, participants completed the NFA and NFC scales. Later, the participants rated the extent to which warmth- and competence-related traits described their own personality. The order of NFA and NFC was counterbalanced. Finally, participants were debriefed.

NFA and NFC.

NFA was assessed with the short version of the NFA Scale (Appel, Gnambs, & Maio, 2012). This measure comprises 10 items, five assessing the approach dimension (e.g., “I think that it is important to explore my feelings”), the others assessing the avoidance dimension (e.g., “I would prefer not to experience either the lows or highs of emotion”). Participants responded using a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). We selected the 10 items from the Italian version of the NFA Scale (Leone & Presaghi, 2007). Given the positive correlation between the approach and avoidance dimensions, $r(99) = .34$, $p < .001$, we computed the total score of NFA by reverse scoring the avoidance dimension items ($\alpha = .73$; see also Aquino et al., 2020).

NFC was assessed using the Italian version of Cacioppo, Petty and Kao’s (1984) 18-item measure (Aquino, Picconi, & Alparone, 2018). Participants rated the extent to which they agreed with items such as “I really enjoy a task that involves coming up with new solutions to problem and “Thinking is not my idea of fun” (reverse scored). Participants responded to these statements on a seven-point scale from 1 (extremely uncharacteristic of me) to 7 (extremely characteristic of me). The measure showed high reliability ($\alpha = .86$).

Personal trait evaluations

The assessment of participants’ perceptions of the valence of interpersonal traits was done in two ways. In one task, participants rated the extent to which each of 40 traits was negative or positive in describing themselves (“*In this task, please evaluate how positive or negative each of the following attributes is in the description of yourself*”). Participants used a seven-point scale from 1 (very negative) to 7 (very positive). There were 10 warmth-related traits (e.g., sociable, $\alpha = .70$), 10 cold-related traits (e.g., cold, $\alpha = .69$), 10 competence-related traits (e.g., intelligent, $\alpha = .80$), and 10 incompetence-related traits (e.g., unintelligent, $\alpha = .69$). We used the same traits already used by Aquino et al. (2016, Study 1 and Study 3).¹

Results

Preliminary analyses

Preliminary analyses were performed to assess the distribution of variables. Inspection of skewness and kurtosis indicated that departures from normality were not severe (the indices were between $-.94$ and 1.90). Descriptive statistics are reported in the upper section of Table 1. Tests to examine whether the data met the assumption of collinearity indicated that multicollinearity was not a concern (NFA, Tolerance = .99, VIF = 1.01; NFC, Tolerance = .99, VIF = 1.01).

Correlations

As expected, NFA and NFC were not significantly correlated, $r(99) = -.03$, $p = .78$, 95% CI: = $[-.25, .22]$, confirming their mutual independence (see Haddock & Maio, 2019). As hypothesized, participants who rated the warm traits more positively also rated the cold traits more negatively, $r(60) = -.56$, $p < .001$, 95% CI: = $[-.71, -.38]$. Similarly, participants who rated the competent traits more positively also rated the incompetent traits more negatively, $r(60) = -.39$, $p < .001$, 95% CI: = $[-.55, -.19]$.

Table 1 shows correlations among NFA, NFC, the average valence ratings of the warm, cold, competent, and incompetent attributes, the difference in evaluations of warmth versus cold ratings and the difference in evaluations of competence minus incompetence ratings. NFA scores were positively correlated with ratings of warm traits, $r(99) = .26$, $p = .008$, 95% CI: = $[.10, .41]$, and negatively correlated with ratings of cold traits, $r(99) = -.35$, $p < .001$, 95% CI $[-.51, -.16]$. Furthermore, NFA

¹ For exploratory purposes, we also asked participants to rank twenty traits on the basis of the extent to which they were effective in the description of themselves. The traits included five warmth-related traits, five cold-related traits, five competence-related traits, and five incompetence-related traits. The traits used in this task were selected to be representative of those used in the rating task, while the smaller number enabled participants to rank the traits with greater ease. The subset of traits was selected in random way from the set of total traits. This measure revealed nonsignificant trends in the same direction as for the ratings task.

was positively correlated with the difference in evaluation of warm and cold traits, $r(99) = .35, p < .001, 95\% \text{ CI } [.18, .51]$, supporting the hypothesis that affective people accentuated the difference in the evaluation of warm versus cold traits. These results are consistent with our hypotheses. NFA scores were not related to the valence ratings of competent traits, $r(99) = .17, p = .09, 95\% \text{ CI } [-.03, .37]$. However, there was an unexpected negative correlation between NFA and valence ratings of the incompetent traits, $r(99) = -.32, p = .001, 95\% \text{ CI } [-.53, -.07]$, as well as a correlation between NFA and the difference in evaluations of competent and incompetent traits, $r(99) = .28, p = .004, 95\% \text{ CI } [.03, .51]$.

Next, we directly compared the NFA-warm correlation coefficient and the NFA-cold correlation coefficient, through Steiger's Z test (Steiger, 1980; Weaver & Wuensch, 2013). As expected, these correlations were significantly different, Steiger's $Z = 4.28, p < .001$. We also conducted comparisons between the dissociated links (i.e., NFA-warm versus NFC-warm, NFA-cold versus NFC-cold). In line with our hypotheses, the NFA-warm and NFC-warm correlations were significantly different, Steiger's $Z = 2.99, p < .001$; as were the NFA-cold and NFC-cold correlations, Steiger's $Z = -3.51, p < .001$.

A complementary pattern of effects was found regarding the correlations between NFC scores and attribute evaluations. As predicted, NFC scores were positively correlated with ratings of competent traits, $r(99) = .32, p = .001, 95\% \text{ CI } [.08, .51]$. NFC was not associated with the ratings of incompetent traits, $r(99) = -.17, p = .09, 95\% \text{ CI } [-.35, .00]$, although the trend was in the predicted direction. As expected, NFC scores were not significantly related to the ratings of warm, $r(99) = -.17, p = .09, 95\% \text{ CI } [-.36, .02]$, or cold traits, $r(99) = .15, p =$

$.14, 95\% \text{ CI } [-.02, .33]$, and the difference in ratings of warm versus cold traits, $r(99) = -.18, p = .08, 95\% \text{ CI } [-.37, .01]$.

Next, we directly compared the NFC-competence correlation coefficient and the NFC-incompetence correlation coefficient. As expected, these correlations were significantly different, Steiger's $Z = 3.43; p < .001$. We also conducted comparisons of between the dissociated links (i.e., NFC-competence versus NFA-competence, NFC-incompetence versus NFA-incompetence), these differences were not significant, Steiger's Z (competent) = $-1.10; p > 1$; Steiger's Z (incompetent) = $1.10, p > 1$. These results were not surprising, given that previous studies showed that the magnitude of differences are typically accentuated for warmth compared with competence (see Haddock & Maio, 2019).

Regression analyses

Next, we conducted regression analyses with NFA and NFC scores as predictors and the average ratings of the warm, cold, competent, and incompetent attributes. Furthermore, we also regressed NFA and NFC scores on the difference in evaluations of warm versus cold traits and the difference in evaluations of competence versus incompetence traits. Regarding warm traits, only NFA scores predicted participants' evaluations, $\beta = .26, t(96) = 2.69, p = .009, 95\% \text{ CI } [.05, .38]$, such that higher NFA scores predicted positive evaluations of the warm traits. Similarly, only NFA scores predicted participants' evaluations of the cold traits, $\beta = -.34, t(96) = -3.65, p < .001, 95\% \text{ CI } [-.52, -.15]$, such that higher NFA scores predicted negative evaluations of the cold traits. Furthermore, only NFA scores predicted the difference in participants' evaluations of warm

Tab. 1. Descriptive statistics and zero-order correlations for NFA, NFC, and attribute evaluations in the self-perception

	Mean	SD	Kurtosis	Skewness	1.	2.	3.	4.	5.	6.	7.	8.
1.NFA	5.31	.79	.37	-.54	-							
2.NFC	4.82	.77	1.66	.71	-.02	-						
3.Warm traits	5.30	.67	.15	-.54	.26*	-.17	-					
4.Cold traits	2.83	.77	1.50	.83	-.35***	.15	-.56***	-				
5.Competence traits	5.28	.78	-.86	-.01	.17	.32**	.54***	-.25*	-			
6. Incompetence traits	2.38	.68	.89	.82	-.32***	-.17	-.27**	.50***	-.39***	-		
7. Difference warm-cold	2.47	1.28	1.90	.05	.35***	-.17	.87***	-.91***	.43***	-.45***	-	
8. Difference competence-incompetence	2.90	1.22	-.94	.24	.28**	.30**	.50***	-.44***	.86***	-.81***	.53***	-

Note: * $p < .01$, ** $p < .01$, *** $p < .001$

versus cold traits, $\beta = .55$, $t(96) = 3.69$, $p < .001$, 95% CI [.24,.91].

Analyses of the competence dimension revealed a complementary set of results. As expected, NFC scores predicted participants' evaluations of the competent traits, $\beta = .32$, $t(96) = 3.42$, $p = .001$, 95% CI [.14,.51], such that higher NFC scores predicted positive evaluations of competent traits. Regarding evaluations of the incompetent traits, the effect of NFC on this dimension was only marginal, $\beta = -.18$, $t(96) = -1.89$, $p = .06$, 95% CI [-.32,.01]. Further, NFC predicted the difference in participants' evaluations of competent versus incompetent traits $\beta = .31$, $t(96) = 3.31$, $p < .001$, 95% CI [.12,.80]. There also emerged an unexpected effect of NFA on the evaluation of incompetence traits, $\beta = -.33$, $t(96) = -3.44$, $p = .001$, 95% CI [-.44, -.12], as well as on the difference in competence versus incompetence traits, $\beta = .29$, $t(96) = 3.18$, $p = .002$, 95% CI [.11, .83].

Discussion

The primary aim of this study was to investigate whether individual differences in affective and cognitive orientation predict the relative importance of warmth-related and competence-related traits in self-evaluation. In line with our hypotheses, NFA was associated with the positive evaluation of warm traits in the self and the negative evaluation of cold traits in the self. In contrast, NFC was associated with the positive evaluation of competent traits and the negative evaluation of the incompetent traits, though the latter effect was marginally significant. Furthermore, in line with our hypotheses, affective people accentuated differences in evaluations of warm versus cold traits, whereas cognitive people accentuated differences in evaluations of competence versus incompetence traits. Taken together, these findings suggest that affective people show greater differentiation among warmth-related traits, whereas people with a cognitive orientation show greater differentiation among competence-related traits.

NFC did not predict self-evaluations on the warmth dimension. Although NFA also exhibited an unexpected association with evaluations of incompetence traits, Aquino et al. (2016) found that NFA was negatively correlated with evaluations of incompetent traits in others. Future research studies can assess this in greater detail. One possibility is that traits such as unintelligent, foolish, stupid might elicit strong negative affect among high NFA individuals and elicit very strong negative reactions.

Taken together, the present findings extend our knowledge about both attitude and self-evaluation processes. From an attitudinal perspective, the current findings showed a novel outcome that is predicted by NFA and NFC. Thus, these findings add new insights regarding the role of motivational perspectives in evaluative judgements. From a self-evaluation perspective, the results highlight that evaluations of warmth and competence in self-descriptions are related to individual differences in motivations related to seeking out affective and cognitive information. This means, for example, that

warmth traits are not necessarily judged more favorably than competence traits, but that evaluations vary as a function of individual differences in affective and cognitive preferences. The present research showed that what is important in self-evaluation is whether there is self-knowledge regarding our own perceptions of our motivations relating to affective and cognitive information. This pattern fits extant theory indicating that the need to feel validated and understood have a crucial role in interpersonal evaluation and could be very important also in self-presentation (e.g., Reis & Patrick, 1996). Thus, the findings build on prior research showing that perceptions of traits in interpersonal perception are associated with perceptions follow the traits appreciated in the self-evaluation by extending this line of research (Lewicki, 1984; Markus & Wurf, 1987). Our findings contribute to better understanding a recurring issue in social psychology: the role played by individual differences in perceptions of the self.

We wish to acknowledge potential limitations of our results. Most of our participants were female, raising the possible question that our results may be gender specific. This is ultimately an empirical question, but abundant literature on affective-cognitive orientation has shown that participant's gender does not impact the role of affective and cognitive individual differences in attitudinal processes (see Haddock & Maio, 2019, for a review). We should also note that the present study detected only a medium effect size ($r < .40$). However, a recent review of studies based on 708 meta-analytically derived correlations, reported that the 25th, 50th, and 75th percentiles corresponded to correlations of 0.11, 0.19, and 0.29, respectively. Fewer than 3% of correlations met Cohen's definition of "large". Gignac and Szodorai (2016) suggest that the terms small, medium and large closely correspond to correlations of 0.10, 0.20 and 0.30.

The present findings raise additional questions for future research. For example, one research idea could move toward the self-esteem direction by looking at bases of self-esteem and their relationship with affective-cognitive orientation. Another possibility is to look at the comparative aspects of basking vs birging in the warmth vs competence of others. We could also investigate narrative aspects, asking participants to describe the most important event of their life. We could expect that high NFA participants should use more affective words in their story, whereas high NFC participants should use more cognitive words. Indirect evidences for the role of NFA and NFC in the narrative style have already provided (Appel & Richter, 2010).

Author Contributions

The authors contributed equally to this manuscript.

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no competing interests.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

References

- Abele, A.E., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal of Personality and Social Psychology, 93*, 751-763. <https://doi.org/10.1037/0022-3514.93.5.751>
- Aquino, A., Alparone, F. R., Pagliaro, S., Haddock, G., Maio, G. R., Perrucci, M. G., & Ebisch, S. J. (2020). Sense or sensibility? The neuro-functional basis of the structural matching effect in persuasion. *Cognitive, Affective, & Behavioral Neuroscience, 20*, 536-550. <https://doi.org/10.3758/s13415-020-00784-7>
- Aquino, A., Haddock, G., Maio, G.R., Wolf, L.J., & Alparone, F.R. (2016). The role of affective and cognitive individual differences in social perception. *Personality and Social Psychology Bulletin, 42*, 798-810. <https://doi.org/10.1177/0146167216643936>
- Aquino, A., Picconi, L., & Alparone, F.R. (2018). Validation of the Italian version of the Need for Cognition Scale-Short Version. *BPA-Applied Psychology Bulletin (Bollettino di Psicologia Applicata), 283*, 18-29. <https://doi.org/10.26387/bpa.283.2>
- Appel, M., Gnambs, T., & Maio, G.R. (2012). A short measure of the need for affect. *Journal of personality assessment, 94*, 418-426. <https://doi.org/10.1037/t33675-000>
- Appel, M., & Richter, T. (2010). Transportation and need for affect in narrative persuasion: A mediated moderation model. *Media Psychology, 13*, 101-135. <https://doi.org/10.1080/15213261003799847>
- Cacioppo, J.T., & Petty, R.E. (1982). The need for cognition. *Journal of personality and social psychology, 42*, 116-131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Cacioppo, J.T., Petty, R.E., & Feng Kao, C. (1984). The efficient assessment of need for cognition. *Journal of personality assessment, 48*, 306-307. https://doi.org/10.1207/s15327752jpa4803_13
- Cuddy, A.J., Fiske, S.T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. *Advances in experimental social psychology, 40*, 61-149. [https://doi.org/10.1016/s0065-2601\(07\)00002-0](https://doi.org/10.1016/s0065-2601(07)00002-0)
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.)*. Hillsdale, NJ: Erlbaum.
- Cuddy, A.J., Glick, P., & Beninger, A. (2011). The dynamics of warmth and competence judgments, and their outcomes in organizations. *Research in organizational behavior, 31*, 73-98. <https://doi.org/10.1016/j.riob.2011.10.004>
- Fiske, S.T., Cuddy, A.J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in cognitive sciences, 11*, 77-83. <https://doi.org/10.1016/j.tics.2006.11.005>
- Fong, G.T., & Markus, H. (1982). Self-schemas and judgments about others. *Social Cognition, 1*, 191-204. <https://doi.org/10.1521/soco.1982.1.3.191>
- Gignac, G., Szodorai, E. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences 102*, 74-78. <https://dx.doi.org/10.1016/j.paid.2016.06.069>
- Judd, C.M., James-Hawkins, L., Yzerbyt, V., & Kashima, Y. (2005). Fundamental dimensions of social judgment: understanding the relations between judgments of competence and warmth. *Journal of personality and social psychology, 89*, 899-913. <https://doi.org/10.1037/0022-3514.89.6.899>
- Haddock, G., & Maio, G.R. (2019). Inter-individual differences in attitude content: Cognition, affect, and attitudes. *Advances in Experimental Social Psychology, 59*, 53-102. <https://doi.org/10.1016/bs.aesp.2018.10.002>
- Haugtvedt, C.P., Petty, R.E., & Cacioppo, J.T. (1992). Need for cognition and advertising: Understanding the role of personality variables in consumer behavior. *Journal of Consumer Psychology, 1*, 239-260. [https://doi.org/10.1016/s1057-7408\(08\)80038-1](https://doi.org/10.1016/s1057-7408(08)80038-1)
- Huskinson, T.L., & Haddock, G. (2004). Individual differences in attitude structure: Variance in the chronic reliance on affective and cognitive information. *Journal of Experimental Social Psychology, 40*, 82-90. [https://doi.org/10.1016/s0022-1031\(03\)00060-x](https://doi.org/10.1016/s0022-1031(03)00060-x)
- Kervyn, N., Yzerbyt, V., & Judd, C.M. (2010). Compensation between warmth and competence: Antecedents and consequences of a negative relation between the two fundamental dimensions of social perception. *European Review of Social Psychology, 21*, 155-187. <https://doi.org/10.1080/13546805.2010.517997>
- Leone, L., & Presaghi, F. (2007). Validity of the need for affect scales: Factorial structure, invariance and validity in the Italian context. *Testing, Psychometrics, Methodology in Applied Psychology, 14*, 117-134.
- Lewicki, P. (1984). Self-schema and social information processing. *Journal of Personality and Social Psychology, 47*, 1177-1190. <https://doi.org/10.1037/0022-3514.47.6.1177>
- Maio, G.R., & Esses, V.M. (2001). The need for affect: Individual differences in the motivation to approach or avoid emotions. *Journal of personality, 69*, 583-614. <https://doi.org/10.1111/1467-6494.694156>
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual review of psychology, 38*, 299-337. <https://doi.org/10.1146/annurev.ps.38.020187.001503>
- Reis, H.T., & Patrick, B.C. (1996). *Attachment and intimacy: Component processes*. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 523-563). New York, NY: Guilford Press.
- Steiger, J.H. (1980). Tests for comparing elements of a correlation matrix. *Psychological bulletin, 87*, 245-251. <https://doi.org/10.1037/0033-2909.87.2.245>
- Soper, D.S. (2020). A-priori Sample Size Calculator for Multiple Regression [Software]. Available from <http://www.danielsoper.com/statcalc>

- Weaver, B., & Wuensch, K.L. (2013). SPSS and SAS programs for comparing Pearson correlations and OLS regression coefficients. *Behavior research methods*, *45*, 880-895. <https://doi.org/10.3758/s13428-012-0289-7>
- Wojciszke, B. (1997). Parallels between competence- versus morality-related traits and individualistic versus collectivistic values. *European Journal of Social Psychology*, *27*, 245-256. [https://doi.org/10.1002/\(sici\)1099-0992\(199705\)27:3<245::aid-ejsp819>3.0.co;2-h](https://doi.org/10.1002/(sici)1099-0992(199705)27:3<245::aid-ejsp819>3.0.co;2-h)
- Wojciszke, B., & Abele, A.E. (2008). The primacy of communion over agency and its reversals in evaluations. *European Journal of Social Psychology*, *38*, 1139-1147. <https://doi.org/10.1002/ejsp.549>

