The Misattributing Personality: The Relationship between Affect Misattribution, Need for Closure and Body Awareness

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We hypothesized that aversion to ambiguous situations and overreliance on bodily cues are positively related to people's tendency to make erroneous attributions of internal experiences. To test this prediction, we examined the relationship between misattribution and two personality traits: need for closure (NFC) and body awareness (BA). Across four studies (total *Ns* = 1394, 1498), misattribution was weakly but reliably related to NFC and BA. Further, we found that the extremity of one's reactions to affective stimuli was positively related to NFC and BA, and might partially explain the relation between the personality traits and misattribution. The results advance knowledge about misattribution and the personality traits related to it. The misattributing individual is characterized by unjustified reliance on bodily cues and fear of vague situations, which might account for a distorted understanding of the relationship between the environment and one's internal states.

Keywords: Affect Misattribution Procedure; Need for closure; Body awareness; Attribution; Misattribution

Attribution of internal experiences to external events helps people make sense of their physical and social environment. However, the attribution process is not without flaw; mistakes often occur (Payne, Cheng, Govorun, & Stewart, 2005; Schwarz & Clore, 1983). For instance, after walking out in the middle of a particularly lousy movie, Jill might attribute her irritation to an immigrant taxi driver's accent or mannerisms, not realizing that the irritation is the lingering effect of the lousy movie. This is an example of misattribution: the internal experience was attributed to the wrong object. In this case, the downstream effects of the error might be an unjustified negative judgment of the taxi driver, or even the ethnic group to which the driver belongs.

An important question is whether all people are equally likely to misattribute. Would any person in Jill's place have the same likelihood of making that error? Could there be something specific to Jill that made her more susceptible to misattribution than the average person? The present work set out to explore the misattributing individual: what traits are related to a greater tendency to misattribute?

Need for Closure

To search for traits that lead to a greater tendency to misattribute, we focused on possible causes for attribution errors. What prompts individuals to attribute an irrelevant internal experience to an object of judgment? There is some evidence that vague judgment contexts increase misattribution (Greifeneder, Bless, & Pham, 2010; Ruys, Aarts, Papies, Oikawa, & Oikawa, 2012). For instance, Ruys et al. examined how source ambiguity influenced the extent to which participants misattributed their response on a judgment task of subliminal stimuli to a

subsequent judgment of Chinese symbols. Participants in the *certain source* condition were told that the source of their first judgment response is the valence of the subliminal stimulus. Conversely, participants in the *ambiguous source* condition were told that the source of their first response is either the valence of the subliminal stimulus or their own affective state. In both conditions, participants were never told that the Chinese symbols are the reason for their affective response. Nevertheless, participants in the *ambiguous source* condition were more likely than participants in the *certain source* condition to misattribute their responses in the first judgment task to the Chinese symbols. These results suggest that feelings of ambiguity increase misattribution.

Why does ambiguity increase misattribution? One consistent finding about ambiguity is that it is an aversive state that people are motivated to solve (Fox & Tversky, 1995). Attribution of internal experiences to a specific object—even the wrong object—prevents ambiguity. If ambiguity prompts people to misattribute, then perhaps the misattributing individual is characterized by heightened sensitivity to ambiguous situations. *Need for closure* (NFC; Webster & Kruglanski, 1994) is the desire to reach decisive answers, caused by an increased fear of uncertainty and ambiguity. To avoid ambiguous situations, people with high NFC “jump to conclusions” and use available information non-selectively in different judgment situations (De Dreu, Koole, & Oldersma, 1999; Kruglanski, Perin, & Zakai, 1991; McKay, Langdon, & Coltheart, 2006). One way to reach a quick conclusion is by misattributing one’s current internal experience to the target of judgment. Therefore, those who detest vagueness might rely more on misattribution of irrelevant internal experiences to reduce it. The current research examined that hypothesis by measuring the relation between the tendency to misattribute and the need for

closure. We predicted that a higher need for closure would be related to a higher rate of misattribution.

An important theoretical implication of a relation between NFC and misattribution is that this relation could explain why people with a high NFC also show more ingroup bias and racism (Schaller, Boyd, Yohannes, & O'Brien, 1995; Shah, Kruglanski, & Thompson, 1998). If Jill experiences negative affect while sitting in a taxi on the way home, and she is also highly averse to ambiguity (high on NFC), then she might not take the time to think back and correctly attribute the negative affect to the movie she watched before. Rather, she would take a faster route: attributing the negative affect to the most salient object she is currently exposed to, i.e., the immigrant taxi driver (Clore et al., 2001; Higgins, 1998). Moreover, this specific attribution error might be more likely because Jill has been exposed to negative information about the taxi driver's ethnic group. The negative information might depict the taxi driver as a plausible source for the negative affect, a consideration that Jill will surely take into account (Greifeneder et al., 2010). Therefore, misattribution might be specifically targeted against members of stereotyped social groups, causing people with high NFC to hold more prejudiced attitudes.

Body Awareness

Another possible cause for misattribution is people's confidence in their ability to make judgments based on their internal experiences (Schwarz & Clore, 1983; Slovic, Finucane, Peters, & MacGregor, 2007). For instance, if Jim thinks his feelings are a good source of information for judgment, he is more likely to attribute his current feeling of agitation to whatever object he is currently judging, even if that agitation was caused by a previous event. Had he been less certain

that his feelings are informative (or less certain that he is skilled in making sense of them), he may have avoided that erroneous attribution by basing his judgment on sources other than his internal experience.

We examined the relation between misattribution and confidence about bodily cues using the Body Awareness Questionnaire (BAQ; Shields, Mallory, & Simon, 1989). Typical items of this measure are "I can predict how much sleep I will need at night in order to wake up refreshed" and "I know in advance when I'm getting the flu". In a review of body awareness measures, the BAQ was found to be highly reliable in assessing a single trait that reflects one's confidence in the informational value of one's bodily cues (Mehling et al., 2009). We predicted that this measure would be positively correlated with the tendency to misattribute.

One might wonder why high confidence in bodily cues would not predict *more accurate* attribution (i.e., less misattribution). After all, confidence in ability is sometimes related to actual skill (Ames, Kammrath, Suppes, & Bolger, 2010; Swann & Gill, 1997). However, there is no clear evidence that confidence about bodily cues is related to actual accuracy. In a study on heartbeat discrimination and tracking, objective accuracy in detecting one's heartbeat was related to subjective awareness (people's belief that they are aware) only for participants that were highly accurate. For low- and average-performing participants, however, a subjective feeling of awareness did not indicate actual knowledge (Garfinkel, Seth, Barrett, Suzuki, & Critchley, 2015). If people with high body awareness trust their bodily reactions more but are not actually more accurate, they would rely on their "gut feelings" more often than people with low body awareness, regardless of its true informational value. Such reliance on "gut feeling" has been found to increase misattribution (De Houwer & Smith, 2013).

Identifying “the misattributing personality”—the typical person prone to misattribution—would inform theory on psychological mechanisms that distort people's understanding of the relation between their internal experiences and the environment. Each of our hypotheses built on at least one novel assumption about the attribution process. A positive relation between NFC and misattribution would support the hypothesis that one reason for misattribution is the motivation to reduce ambiguity. It would suggest that misattribution could be a useful tool for reaching a decision, when making *any* judgment is more psychologically rewarding than making an *accurate* judgment. A positive relation between body awareness and misattribution would be compatible with the possibility that self-confidence is a facilitating factor to misattribution. This would suggest that attribution is sensitive to meta-cognitive beliefs about one's abilities.

Uncovering dispositional moderators for misattribution might also have practical value in helping people increase attribution accuracy. Individuals that identify in themselves a tendency to rely on bodily cues or a tendency to dread vagueness could compensate by exerting effort to correct for judgment bias. Additionally, finding a relation between a trait and misattribution could improve the theoretical and practical understanding of that trait.

The Present Research

We used the Affect Misattribution Procedure (AMP; Payne et al., 2005) to measure the tendency to misattribute. In each trial of the AMP, three visual stimuli are presented sequentially: a prime, a target, and a mask. The prime and the target appear briefly and the mask appears until participants report their judgment. Although participants are instructed to rate the targets and ignore the primes, they tend to show a priming effect: they evaluate targets as positive more

often after positive primes than after negative primes. As a decontextualized, multi-trial task that produces a continuous measure for misattribution, the AMP is a useful tool for investigating individual difference in misattribution. Although questions about the processes that contribute to the priming effect in the AMP have been raised (Bar-Anan & Nosek, 2012; Blaison, Imhoff, Hühnel, Hess, & Banse, 2012), there is now good evidence to suggest that the effect is caused by misattribution of internal experiences (see Gawronski & Ye, 2014, 2015, and Oikawa, Aarts, & Oikawa, 2011, for convincing evidence).

We conducted four similar studies that measured body awareness (BA), NFC, and misattribution in the AMP. In Study 1, we found that BA and NFC were positively related to the size of the priming effect in the AMP. In Studies 2-4, we repeated the same tests, and added a measure for participants' affective reactions to the primes, separate from the misattribution measure. We tested whether the extremity of people's affective reactions to the primes mediates the relation between each trait and misattribution.

Method¹

Participants

Participants in all studies were volunteers at the Project Implicit research website (Nosek, 2005). In Studies 1-4², respectively, 1,240, 1,285, 1,181, and 1,974 participants completed the

¹ We report all data exclusions, manipulations, and measures, and how we determined our sample sizes. The decision to stop collecting data did not depend on the obtained results. To see the materials and data visit: <https://osf.io/-----> [link removed from this submission because it includes identifying information].

² Because participation in studies at the Project Implicit is voluntary, dropout during the study is relatively high (about 40% dropout in a typical study). The number of participants who did not complete all measures were 630 (34%), 874 (40%), 670 (36%) and 1,122 (36%) in Studies 1-4, respectively. We did not analyze partial results and in the main text we discuss only participants who completed all the measures.

study. We excluded participants ($ns = 49, 73, 75, 167$) who rated all targets with the same response, participants ($ns = 204, 205, 125, 215$) who had more than 5% responses quicker than 250 ms, and participants ($ns = 82, 36, 76, 81$) who indicated they can read Chinese. 983 (79%) participants entered the analysis in Study 1 (62% women, $M_{age} = 34.55$, $SD_{age} = 14.38$), 1,022 (79%) in Study 2 (65% women, $M_{age} = 32.72$, $SD_{age} = 14.78$), 941 (80%) in Study 3 (65% women, $M_{age} = 37.52$, $SD_{age} = 14.97$), and 1,584 (80%) in Study 4 (58% women, $M_{age} = 37.03$, $SD_{age} = 14.09$).

Materials

In Study 1, the prime stimuli were eight negative and eight positive images (from the International Affective Picture System, IAPS; Bradley & Lang, 2007), eight positive words, (*Paradise, Pleasure, Cheer, Friend, Splendid, Love, Smile, Enjoy*), and eight negative words (*Bomb, Abuse, Sadness, Pain, Poison, Grief, Ugly, Stink*). In Studies 2-4, Primes were seven positive and seven negative IAPS images³ (no word primes). The targets were 72 Chinese symbols (Payne et al., 2005).

Procedure and measures

Participants completed the studies over the Internet. We instructed participants to ignore the first item presented in each trial, and rate whether the Chinese symbol was more pleasant or more unpleasant than the average Chinese symbol. Following Payne et al. (2005), we explicitly warned participants that the primes might distract them. The judgment category labels were

³ In Studies 2 and 3, we removed from the analysis one prime image that we intended to be negative but accidentally used an image that is clearly not negative (a pile of \$50 bills), and which the participants rated as neutral in the affective reaction measure. We detected this mistake before Study 4 and replaced that image with a proper negative image.

dichotomous (*Pleasant* and *Unpleasant*) for half of the participants, and continuous (1- *Very unpleasant*, 2 - *Moderately unpleasant*, 3 - *Slightly unpleasant*, 4- *Slightly pleasant*, 5 - *moderately pleasant*, and 6 - *Very pleasant*) for the other half. In Studies 2-4, judgments in the continuous scale AMP were on a 7-point scale (we added a neutral category). In Study 3, we used only dichotomous judgments (no continuous scale).

Each trial started with the prime stimulus appearing for 100ms, followed by a blank screen for 100ms, and then the target stimulus appeared for 100ms. A mask appeared at the end of the trial, until participants evaluated the target by hitting a left or right key in the dichotomous judgment condition, or keys 1-6 in the continuous judgment condition. The intertrial interval was 250ms. In Study 1, prime and target durations varied: 100ms, 200ms, or 300ms, manipulated between participants. That manipulation did not moderate the results and is not discussed further.

The first block presented three practice trials. Then, participants completed three blocks of 36 trials (each prime stimulus appeared once in each block). Afterwards, we asked participants, “Can you read Chinese?” The response options were “Not at all”, “A little”, and “Fluently”.

Participants in Study 1 completed one of three questionnaires: Body-Awareness (BA; Shields et al., 1989), Need for Closure (NFC; Webster & Kruglanski, 1994), or the Self-control Scale (SCS; Tangney, Baumeister, & Boone, 2004). Because SCS did not correlate with the AMP, we omitted it from Studies 2-4, and do not discuss it further. The response scale to all items was “1 – *Not at all true about me*” to “7 – *Very true about me*”. The BA questionnaire

included 18 items (e.g., “*I notice specific body reactions when I’m fatigued*”), and the NFC questionnaire included 15 items (e.g., “*I dislike unpredictable situations*”).

In Studies 2-4, we also measured affective reactions to the primes. Participants rated each of the prime images that appeared in the AMP, using the same 1-7 scale used in the continuous judgment AMP. For each prime, the question was “How pleasant or unpleasant are your feelings toward this image?” in Study 2-3, and “Please rate how pleasant or unpleasant this image seems” in Study 4.

Design

We randomly assigned each participant to one of the 2 (personality questionnaire: NFC, BA [and SC in Study 1]) x 2 (AMP judgment condition: dichotomous, continuous; Study 3 used only dichotomous judgment) conditions. In Study 2, the order of the measures was: the AMP, affective reaction, the personality questionnaire. In Studies 3-4, the order was randomized for each participant.

Results

To test correlations with personality traits beyond the continuous and dichotomous judgment conditions, we standardized the rating in each trial around the participant’s mean rating. For each participant, we computed a priming score by subtracting the average standardized rating after negative primes from the average standardized rating after positive primes. Scores for the personality scales were the average agreement across items (after reversing responses to reversed items). Average scores and internal consistencies appear in Table 1.

Correlations

Table 2 presents correlations for all studies. In Study 1, we found positive correlations between the NFC and BA scales and the priming effect in the AMP. In Study 2, we found that BA and NFC correlated with the AMP, but only when participants rated the targets on a continuous scale. Study 3 was conducted to test whether the traits are related to the dichotomous AMP as found in Study 1, or unrelated, as found in Study 2. In that study, priming in the dichotomous AMP was related to BA and to NFC. In Study 4, we found correlations between BA and NFC to the AMP when the ratings were on a dichotomous scale, but not when participants used the continuous scale.

Mini Meta-Analyses

We performed a separate meta-analysis for each personality trait, aggregating seven simple correlation scores across dichotomous and continuous AMP in Studies 1-4. We used fixed effects in which the mean correlation was weighted by sample size. We transformed all Pearson correlations to Fisher's z values for averaging and for computing confidence intervals, and then transformed back to Pearson correlations. The average Pearson correlation between the AMP and BA was $r = .114$, 95% CI [.092, .137]. The average correlation between the AMP and NFC was $r = .144$, 95% CI [.119, .166]. These results suggest weak, but reliable, relations: the higher people's NFC or BA was, the more likely they were to show a priming effect in the AMP.

Table 1.

Studies 1-4: Mean scores and internal consistency of the measures

	Dichotomous AMP	Scale AMP	BA	NFC	Affective reactivity
Study 1					
Mean (SD)	0.24 (0.32)	0.71 (1.08)	4.39 (0.87)	4.11 (0.93)	--
α	.89	.91	.82	.83	--
Study 2					
Mean (SD)	0.20 (0.30)	0.86 (1.28)	4.46 (0.92)	4.23 (0.96)	3.78 (1.26)
α	.89	.94	.83	.84	.79
Study 3					
Mean (SD)	0.19 (0.29)	---	4.41 (0.89)	4.01 (0.86)	3.66 (1.25)
α	.88	---	.81	.81	.78
Study 4					
Mean (SD)	0.22 (0.34)	0.72 (1.26)	4.40 (0.93)	3.98 (0.95)	3.77 (1.04)
α	.90	.93	.84	.85	.74

Notes. All priming scores were significantly larger than zero, $p < .0001$; BA = Body Awareness; NFC = Need for Closure.

Table 2.

Studies 1-4: Simple correlations.

	NFC		BA	
	Dichotomous AMP	Continuous AMP	Dichotomous AMP	Continuous AMP
Study 1				
<i>r</i>	.177 [.009, .335]	.328 [.167, .472]	.181 [.003, .347]	.183 [.022, .335]
<i>p</i>	.038	< .001	.045	0.26
<i>n</i>	136	133	122	147
Study 2				
<i>r</i>	.007 [-.131, .145]	.206 [.069, .335]	.039 [-.087, .164]	.170 [.034, .300]
<i>p</i>	.920	.003	.549	.014
<i>n</i>	202	201	242	206
Study 3				
<i>r</i>	.140 [.044, .233]	-	.109 [.015, .200]	-
<i>p</i>	.004	-	.022	-
<i>n</i>	413	-	439	-
Study 4				
<i>r</i>	.146 [.035, .253]	.098 [-.006, .200]	.122 [.007, .237]	.082 [-.024, .186]
<i>p</i>	.010	.064	.038	.129
<i>n</i>	309	355	291	342

Notes. BA = Body Awareness; NFC = Need for Closure; In brackets: 95% confidence intervals.

Relations with Extremity of Affective Reactions

People whose affective reactions to the prime stimuli are more extreme would show stronger priming effects. Therefore, we investigated whether NFC and BA are related to affective

reactions extremity, and whether the relation can account for the relations between the personality traits and misattribution. In Studies 2-4, respectively, affective reactions mostly correlated with NFC $r(201, 384, 309, 305) = .113, .209, .232, .306, p$ (Study 1) = .142, other $ps < .001$, and with BA, $r(206, 412, 291, 341) = .250, .116, .082, .212, ps$ (Studies 1 and 4) $< .001, p$ (Studies 2 and 3) = .018, .161. A mini meta-analysis of these correlations found reliable relations between affective reactions and the personality traits. The average Pearson correlation between affective reactions and BA was $r = .165, 95\% \text{ CI } [.109, .220]$. The average correlation between affective reactions and NFC was $r = .215, 95\% \text{ CI } [.158, .270]$.

Mediation Analyses

To test statistical compatibility with the possibility that relations with affective reactions mediated the relation of the personality traits with the AMP score, we performed mediation analyses using R's Lavaan package (version 0.5-16; Rosseel, 2012). We used the bootstrap method to estimate confidence intervals for the effects. We entered the personality trait as an independent variable, affective reactivity as a mediator, and AMP priming scores as the outcome. In the context of the current correlational design, rather than causal effects, the mediation analysis tested whether the relation between each personality trait and misattribution can be accounted for by variance that these two variables shared with affective reactivity. In the mediation-like analyses, significant indirect effects provided evidence compatible with the possibility that the personality trait was related to misattribution because it was related to affective reactivity. Conversely, significant direct effects provided evidence compatible with the possibility that the relation between the personality trait and misattribution resulted from something other than the relation with affective reactivity.

Table 3.

Studies 2-4: Regression coefficients for mediation analyses.

	NFC		BA	
	Direct Effect	Indirect Effect	Direct Effect	Indirect Effect
Study 2 (continuous AMP)				
B	.175 [.046, .304]	.032 [-.013, .077]	.104 [-.030, .238]	.066 [.018, .115]
Z (p)	2.65 (.008)	1.40 (.161)	1.52 (.129)	2.68 (.007)
Study 3 (dichotomous AMP)				
B	.121 [.021, .221]	.028 [.004, .053]	.097 [.003, .191]	.027 [.001, .051]
Z (p)	2.37 (.018)	2.25 (.025)	2.02 (.043)	2.12 (.034)
Study 4 (dichotomous AMP)				
B	.107 [-.005, .219]	.039 [.007, .071]	.108 [-.005, .221]	.013 [-.007, .034]
Z (p)	1.87 (.061)	2.41 (.016)	1.89 (.061)	1.25 (.210)
Study 4 (continuous AMP)				
B	-.004 [-.107, .099]	.102 [.057, .148]	.041 [-.066, .147]	.041 [.011, .072]
Z (p)	-.078 (.938)	4.38 (< .001)	0.75 (.453)	2.68 (.007)

Notes. In the mediation-like analyses, the personality traits (NFC, BA) were the independent variables, the AMP's priming score was the dependent variable and affective reactivity was the mediator; In brackets: 95% confidence intervals.

Table 3 presents the regression coefficients for the mediation analyses. We found some evidence for direct effects of BA and NFC on the AMP, as well as evidence for indirect effects of BA and NFC on the AMP through affective reactivity. In other words, the mediation analysis strategy provided some support, albeit inconsistent, in support of the possibility that NFC and BA are related to misattribution through affective reactions to stimuli. However, that analysis strategy also found evidence for a direct relation between misattribution and the personality traits, unmediated by affective reactivity.

General Discussion

Across four studies, we found evidence of a positive relation between people's tendency to misattribute and two personality traits: the need for closure (NFC) and body awareness (BA). Although the correlations were small, statistically significant only in 10 out of 14 tests, meta-analyses of all the present tests showed a consistent positive relation between misattribution and the personality traits.

Before discussing the theoretical and practical implications of the present results, we note that small effects might be as important and informative as large ones (Ellis, 2010; Prentice & Miller, 1992). The very existence of a relation is important for theory development. In a particular study setup, the strength of the relation might be diluted in the presence of other factors that influence misattribution, yet these factors do not undermine the value of the theoretical conclusion. Moreover, the size of the relation between the BA and NFC scores and the AMP's priming score may depend on factors that are theoretically irrelevant, such as the quality of measurement of the trait and the specific attribution situation. Finding a relation within

certain conditions constitutes initial evidence for the existence of the relation but is not the final word about its size.

Our mediation analyses found evidence compatible with the possibility that the relations between the personality traits and misattribution are partially explained by participants' affective reactions to the primes. We found that NFC and BA are positively related to extremity of affective reactions, and that this relation might be one of the reasons why people with high NFC and BA misattribute more than others. The relations between affect extremity and the two personality traits are intriguing findings that could shed more light on these traits and on individual differences in affect extremity. NFC is an increased fear of uncertainty and ambiguity—two generally aversive states. Therefore, in line with the present results, it seems reasonable that one reason for high NFC is stronger reactions to affective states, with uncertainty and ambiguity being two of those states. Indeed, previous research found that NFC is related to neuroticism (Neuberg, Judice & West, 1997) and that a similar construct, intolerance to uncertainty, is related to anxious arousal and anhedonic depression (Berenbaum, Bredemeier, & Thompson, 2008)—affective constructs that might be linked to affective sensitivity. Based on the present results, it seems promising and important to further examine the affective roots of NFC.

The finding that BA is positively related to extremity in affective reactions is in line with some previous theory and findings about self-awareness (Scheier & Carver, 1977), and at odds with others (Lanzetta, Biernat, & Kleck, 1982; Silvia, 2002). However, the relation between affect intensity and the specific facet of self-awareness that we measured—that is, confidence in bodily cues—has not been examined before, and seems informative for the understanding of BA. This relation might suggest that one factor that determines people's confidence in bodily cues is

their sensitivity to affective states. It seems reasonable that people who have stronger reactions to affective stimuli would find those reactions more informative and would be reluctant to ignore them (as our main finding about the relation between BA and misattribution suggests). On the other hand, perhaps confidence in bodily cues causes stronger reactions to affective states (Nezlek, 2002). People who believe that their body sensations are informative might attend to those sensations more and reach more extreme conclusions. Both of these possibilities draw important lines for further research about the causes for heightened sensitivity to affective stimuli, and for individual differences in people's attention to their internal experiences.

More importantly for our hypotheses, we also found evidence for a direct relation between the personality traits and misattribution: people with high NFC and BA misattribute more, not only because their affective reactions are stronger, but also because they are worse attributers. For an affective reaction of the same degree, higher NFC and BA predicts more misattribution. We hypothesized a relation between BA and misattribution as a result of overreliance on bodily cues. People with high BA are highly confident about the informative value of their internal experiences, but are not more accurate in their understanding of these experiences (Garfinkel et al., 2015). Consequently, they might make more reckless attributions of their internal experiences, resulting in a higher rate of misattribution. The relation between BA and misattribution might inspire future research directions on factors related to body awareness. For instance, hypochondriacs—people who are chronically worried about their health despite the absence of an actual medical condition, tend to have higher BA and higher sensitivity to bodily sensations (Ginzburg, Tsur, Barak-Nahum, & Defrin, 2014; Hanback & Revelle, 1978). Perhaps

hypochondriacs' erroneous beliefs about their health are sometimes the result of misattribution of bodily sensations.

The direct relation between misattribution and NFC is compatible with current knowledge about this trait. Ambiguous situations, which people with a high NFC find aversive (Webster & Kruglanski, 1994), are known to increase misattribution (Greifeneder et al., 2010; Ruys et al., 2012). Therefore, heightened ambiguity aversion could explain why people high on NFC misattribute more. In order to escape vagueness, people high on NFC resort to the use of irrelevant information (misattribute) more than people who tolerate vagueness.

Misattribution might also contribute to the positive relation, found in previous research, between the need for cognitive closure and the tendency to endorse stereotypes, show group centrism, ingroup bias and racism (Schalle et al., 1995; Shah et al., 1998). The attribution of negative internal experiences to a person who belongs to a victimized or stereotyped group is an easy explanation for that internal experience, perhaps favored more often by people who cannot tolerate experiences with an ambiguous source. Thus, our results depict the misattributing individual as sensitive, attentive to physical sensations and overconfident about their informational values, fearful of ambiguity, and lead by these qualities to a distorted understanding of her environment.

Our results could also guide future theory about attribution processes. A potential insight from the relations we found is that there is a *confidence threshold* to be crossed for attribution to occur. The positive relation between NFC and misattribution supports the hypothesis that one cause for attribution errors is people's motivation to reduce ambiguity. Because ambiguity is an

aversive state—and attribution of internal experiences is sometimes an easy way to avoid that state—ambiguous situations might cause people to lower their confidence threshold (either intentionally or unintentionally) and make attributions even when they are likely to be erroneous. Additionally, people differ in their initial confidence about the informational value of their internal experiences. The positive relation between BA and misattribution indicates that when initial confidence is very high, people would tend to make attributions also when they are unlikely to be correct. In sum, the degree to which people rely on attributions of internal experiences in judgment situations seems to depend on their subjective estimation of the benefits of that strategy—how important it is to reach a quick answer and how helpful and informative the internal experience is for the judgment at hand.

Finally, the relations between the priming effect and the personality traits can inform further developments of the AMP for reducing its sensitivity to non-attitudinal effects, and improving its psychometric qualities. For instance, if certain personality types are more prone to misattribute, and misattribution causes the priming effect in the AMP, then individual differences in the priming effect might not always reflect individual differences in attitudes toward the primes. Following a similar rationale, the finding that individual differences in executive functions predict the measurement outcome of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) has taught researchers caution in interpreting IAT results, and emphasized the importance of using a scoring algorithm that is less sensitive to those individual differences (Back, Schmukle, & Egloff, 2005; Mierke & Klauer, 2003). In that respect, the relation between personality traits and the processes captured by the AMP is another promising future research direction.

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