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**Biases in Leadership Perception: The Role of Implicit
Leadership Theories, Attachment Style, Attentional
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Abstract

Previous work suggested that followers' insecure attachment style might bias the accuracy of follower leadership ratings (Davidovitz, Mikulincer, Shaver, Izsak, & Popper, 2007; Hansbrough, 2012), possibly also via followers' implicit leadership theories (ILTs; Berson, Dan, & Yammarino, 2006; Keller, 2003). We argue that both followers' attachment anxiety and avoidance—due to non-constructive emotion regulation and hence limited attentional capacity—lead to a biased leadership perception due to a greater usage of ILTs when rating a leader. In three online studies with full-time employed participants from the US and UK, we assessed both followers' ILTs and leadership ratings together with their attachment style. Using an experimental design, Study 1 (N = 218) had participants rate a fictitious leader presented in a written vignette. In Study 2 (N = 217), participants rated their own supervisor. In Study 3 (N = 260), participants were asked to watch a video of a team meeting before rating the leader. Results indicated that the higher participants' attachment avoidance, the more they relied on their ILTs when rating a leader. Study 3 found support suggesting that this was due to a decrease of attentional capacity. However, when under high working memory demands, the higher attachment avoidance, the less they relied on their ILTs, probably due to a breakdown of their defense-mechanism of blocking out information related to social perception (Edelstein & Gillath, 2008; Mikulincer, Dolev, & Shaver, 2004). Perceptual biases related to attachment anxiety were inconsistent. Results from Study 3 suggest that this might have been due to the interplay of a lack of attentional capacity and heightened accuracy motivation for participants high in attachment anxiety.

**Biases in Leadership Perception: The Role of Implicit Leadership Theories,
Attachment Style, Attentional Capacity, and Accuracy Motivation**

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Thesis Submitted in Fulfilment of the Requirements for the Degree of
Doctor of Philosophy

Business School Durham University

Durham University

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List of Abbreviations

Abbreviation	Meaning	Page
AGI	Accuracy Goal Importance	119
ILTs	Implicit Leadership Theories	2
TAL	Transactional Leadership	70
TFL	Transformational Leadership	42
WMD	Working Memory Demands	119

Declaration

Unless explicitly stated otherwise, the work presented in this thesis is solely that of Lena Franziska Fox and has not been submitted for examination of any other degree. Material from published or unpublished work of others, which is referred to in the thesis, is credited to the author in question in the text. Research ethics issues have been considered and handled appropriately within the Durham University Business School guidelines and procedures.

Statement of Copyright

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and information derived from it should be acknowledged.

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Chapter 1: General Introduction

Overview

Increasing the accuracy of leadership ratings (e.g., in 360-degree feedback) is of interest to practitioners and scholars alike. Possible factors that influence ratings have been investigated over the past few decades. Past research shows that leadership perception, as a social perception, relies on affective and cognitive components and is influenced by processes on the person-level, dyadic-level, and group-level (e.g., Hall & Lord, 1995).

In this PhD thesis, we focused on person-level influences on leadership perception. One example of a person-level influence is the concept of so-called *implicit leadership theories* (ILTs). An ILT, as a special form of cognitive schemata, describes expectations or stereotypes about leaders (Eden & Leviatan, 1975) and can be defined as “the image that a person has of a leader in general, or of an effective leader” (Schyns & Meindl, 2005, p. 21). As such, ILTs have been found to influence perceptions, judgment, and evaluation of leaders (Lord & Maher, 1993; Nye & Forsyth, 1991; Schyns et al., 2007; Schyns, Felfe, & Blank, 2007; Shamir, 1992).

Another example of a person-level influence on leadership perception is a person’s attachment style. In the last few years, the attachment styles of both the leader (i.e., the person being rated) and the follower (i.e., the person rating) have received increasing attention in organisational research (for a review, see Harms, 2011). For example, when investigating the leader-follower relationship, parallels between a leader and an attachment figure as well as a follower and a child have been suggested (Keller, 2003; Popper & Mayseless, 2003).

Differences in attachment style describe differences in the need and desire for attaining proximity to a potential security-providing person (i.e., an attachment figure such as a parent, friend, partner, or even supervisor) in times of threat (Ainsworth, Blehar, Waters, & Wall, 2015; Bowlby, 1982). Attachment styles also shape people's working models of others (Bowlby, 1982; Mikulincer & Shaver, 2007) as well as coping strategies (e.g., emotion regulation strategies) and observable reactions used in social interactions (Mikulincer & Shaver, 2007). The formation of those working models usually starts with the relationships to parents and is influenced by attachment experiences throughout life. Thus, attachment styles consist of a whole set of expectations, needs, emotions, and social behaviour (Fraley & Shaver, 2000). Three types of attachment styles are usually differentiated (Ainsworth et al., 2015): attachment anxiety¹, avoidance, and security (see Table 1 for definitions and examples of behaviour).

Taken together, previous work suggests that attachment styles are related to the content of ILTs (Berson et al., 2006; Keller, 2003) and that both attachment anxiety and avoidance (i.e., the insecure attachment styles) have the potential to bias leadership perceptions (Davidovitz et al., 2007; Hansbrough, 2012). Moreover, it was repeatedly suggested (though not empirically demonstrated) that those perceptual biases might be due to attachment insecure individuals' negative models of others with regards to leaders (i.e., negative ILTs). Taking it one step further, in addition to participants' attachment style, in this dissertation we also assessed participants' ILTs as well as their leadership perception of a fictitious leader (Study

¹ Attachment anxiety is often referred to as the anxious-ambivalent attachment style (e.g., Hazan & Shaver, 1987) as people with that attachment style have experienced inconsistent caregiver responsiveness and are caught in an approach-avoidance conflict (Mikulincer & Shaver, 2007). Throughout this thesis, we will refer to the anxious-ambivalent attachment style as the anxious attachment style or attachment anxiety.

1), their own supervisor (Study 2), as well as a leader presented in a video vignette (Study 3). By doing so, we wanted to address our overall research question whether an insecure attachment style leads to a greater usage of ILTs when judging a leader and thus biased leadership perception. Adding to previous literature, we therefore aim to show how individual differences (attachment styles) affect processes that translate ILTs into biased ratings.

In our conceptual model, we focused on the role of self-control (i.e., an individual's capacity to alter his or her own responses, especially to be consistent with social standards, ideals, values, morals, and expectations; Baumeister, Vohs, & Tice, 2007). More specifically, and as summarised in Table 1, we argue that differences in attachment styles lead to differences in self-control/cognitive resources which, in turn, lead to differences in information processing strategies and therefore differences in the degree of reliance on stereotypes when judging a leader or supervisor. As such and based on previous research, Table 1 addresses where each of the three attachment styles (secure, anxious, and avoidant) stems from, what attachment strategies people tend to use in times of threat, their emotion regulation and coping strategies (constructive for secure individuals, non-constructive for insecure individuals) and what emotion related behaviour they might show. Moreover, it summarises people's self-control resources (high for secure individuals, low for insecure individuals), findings regarding their general information processing motivation, as well as potential person perception distortions (unlikely for secure individuals, likely for insecure individuals).

Table 1

Variations in Attachment Style and Their Consequences for Emotion Regulation, Coping Strategies, Behaviour, Cognitive Load, Available Self-Control Resources, Information Processing, and the Likelihood of Person Perception Distortions

Aspect	Attachment Style		
	Secure	Anxious	Avoidant
Attachment style stems from	Consistent caregiver responsiveness (Ainsworth et al., 2015)	Inconsistent caregiver responsiveness (Ainsworth et al., 2015); pattern of caregiving insensitive to the individual's requests, intrusive caregiving, punishment of autonomy-oriented activities (including self-regulation), emphasis of helplessness and incompetence (Mikulincer, Shaver, & Pereg, 2003)	Consistent caregiver unavailability and non-responsiveness (Ainsworth et al., 2015); rejection or punishment of proximity seeking or display of attachment behaviour, emphasis on self-reliance (Mikulincer et al., 2003)
Attachment strategy used in times of psychological or physical threat (activated attachment system)	Primary: Proximity and security seeking by turning to attachment figure (or internal representation of such; Bowlby, 1982; Mikulincer & Shaver, 2004)	Secondary: Hyperactivation of attachment system (Main, 1990); minimisation of cognitive, emotional, or physical distance from attachment figure in an overdependent way (Shaver & Hazan, 1993)	Secondary: Deactivation of attachment system (Main, 1990); avoidance of closeness, maximisation of cognitive, emotional, or physical distance (Cassidy & Kobak, 1988)
Emotion regulation and coping strategy	Antecedent-focused emotion regulation (Mikulincer & Shaver, 2007; Richards & Gross, 2000); security-based strategies of affect regulation (Mikulincer et al., 2003); constructive ways of coping (Epstein & Meier, 1989; Mikulincer & Shaver, 2007)	Emotion-focused strategies (Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Shaver, 2007; Pistole, 1995); emotion-focused coping (Lazarus & Folkman, 1984; Mikulincer & Shaver, 2007); non-constructive ways of coping (Epstein & Meier, 1989; Mikulincer & Shaver, 2007)	Response-focused emotion regulation (Gross, 1999; Mikulincer & Shaver, 2007); preemptive and postemptive strategies (Fraley et al., 2000); non-constructive ways of coping (Epstein & Meier, 1989; Mikulincer & Shaver, 2007); distancing coping (Lazarus & Folkman, 1984; Mikulincer & Shaver, 2007)

(continued)

Aspect	Attachment Style		
	Secure	Anxious	Avoidant
Emotion related behaviour	<p>Changing the event that elicited the emotion, or reappraising it constructively, removing the source of distress, restoring emotional equanimity (Epstein & Meier, 1989; Mikulincer & Shaver, 2007); openness to own emotions, experiencing them without distortions; expressing and communicating emotions freely to other people (Mikulincer & Shaver, 2007); acknowledging and displaying distress, engaging in instrumental problem-solving, and engaging in support-seeking behaviour (Mikulincer, 1998; Shaver & Mikulincer, 2002); self-soothing, self-induced reduction of stress (Mikulincer & Shaver, 2004)</p>	<p>Hyperactivation of negative emotions, inability to distance oneself from psychological pain and a subsequent hyper vigilant focus on attachment figures and relationships (Shaver & Mikulincer, 2002); intensification of emotions (Cassidy, 1994; Mikulincer & Shaver, 2007); rumination on negative thoughts (Birnbbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Shaver, 2007; Pistole, 1995), increased monitoring and sensibility of threats (Shaver & Mikulincer, 2002); negative mood and interpersonal problems due to emotional reactivity (Wei, Vogel, Ku, & Zakalik, 2005)</p> <p>Consequences: intensified distress, threshold for detecting worries is extremely low (Shaver & Mikulincer, 2002); chronic activation of attachment system (Mikulincer, Birnbbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002; Mikulincer et al., 2003)</p>	<p>Prevention of conscious experience or expression of emotions (Cassidy, 1994); preemptive strategies (Fraley et al., 2000) such as turning attention away from possible attachment system activating stimuli (Mikulincer et al., 2003) e.g., by seeking physical, cognitive (e.g., self-other similarity) or behavioural distance (e.g., Birnbbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Florian, 1995, 1999; Mikulincer, Florian, & Weller, 1993; Radecki-Bush, Farrell, & Bush, 1993); inhibition of deep, elaborate encoding of information to keep negative thoughts out of awareness and memory right from the start; inhibition and suppression of anything that could evoke distress or feelings of vulnerability (Mikulincer et al., 2002, 2003); postemptive strategies (Fraley, Garner, & Shaver, 2000) such as minimizing already encoded perceived threats and vulnerabilities using suppression or repression (Mikulincer et al., 2003); suppression of emotion-related actions and the masking of nonverbal expressions of emotions (Mikulincer & Shaver, 2007; Richards & Gross, 2000); negative mood and interpersonal problems due to emotional cut-off (Wei et al., 2005)</p> <p>Possible consequences: defense-mechanism can break down once cognitive load is added (Edelstein & Gillath, 2008; Mikulincer, Dolev, & Shaver, 2004) leading to a high availability of attachment-related thoughts, experiences and behaviours that they tried to suppress</p>

(continued)

Aspect	Attachment Style		
	Secure	Anxious	Avoidant
Cognitive load	Low	High, due to rumination and chronic hyperactivation of attachment system	High, due to suppression and repression (preemptive and postemptive) of (potential) negative emotions
Availability of self-control resources	High (Tangney, Baumeister, & Boone, 2004)	Low (Tangney et al., 2004)	Low (Tangney et al., 2004)
Information processing	Active engagement in information search, openness to new information, flexible cognitive structures and general positive attitude toward information processing (Mikulincer, 1997); more openness in close relationships (Mikulincer & Arad, 1999)	Relatively high need for cognitive closure, favouring secure and stable knowledge (e.g., dogmatic and stereotypic beliefs); tendency to ignore evidence that demanded a revision of existing knowledge but as curious (self-report) as secure individuals (Mikulincer, 1997); less openness in close relationships (Mikulincer & Arad, 1999)	Relatively high need for cognitive closure, favouring secure and stable knowledge (e.g., dogmatic and stereotypic beliefs); tendency to ignore evidence that demanded a revision of existing knowledge and less curious (self-report) than secure or anxious individuals (Mikulincer, 1997); less openness in close relationships (Mikulincer & Arad, 1999)
Likelihood of person perception distortions	In general: unlikely (e.g., Green-Hennessy & Reis, 1998; Mikulincer et al., 1998; Mikulincer & Horesh, 1999) In leadership context: unlikely (Davidovitz et al., 2007; Hansbrough, 2012)	In general: mixed results: perception distortions (e.g., Mikulincer, Orbach, & Iavnieli, 1998; Mikulincer & Horesh, 1999); perception as differentiated as in secure participants (Green-Hennessy & Reis, 1998) In leadership context: likely (Davidovitz et al., 2007; Hansbrough, 2012)	In general: likely (e.g., Green-Hennessy & Reis, 1998; Mikulincer et al., 1998; Mikulincer & Horesh, 1999) In leadership context: likely (Davidovitz et al., 2007; Hansbrough, 2012)

As such, attachment insecurity is especially prone to emotion regulation strategies that are non-constructive and thus lead to emotional regulation load. The logic guiding Studies 1 and 2 was that this emotional load, in turn, depletes general self-control resources necessary for controlled information processes, such as overcoming stereotypes or ILTs to judge the leader according to his or her behaviour (see Figure 1). The perceptual biases exhibited by insecurely attached participants in prior studies could therefore be due to their ineffective emotion regulation strategies, leading to self-control depletion and thus impairments in information processing of leader behaviour details.

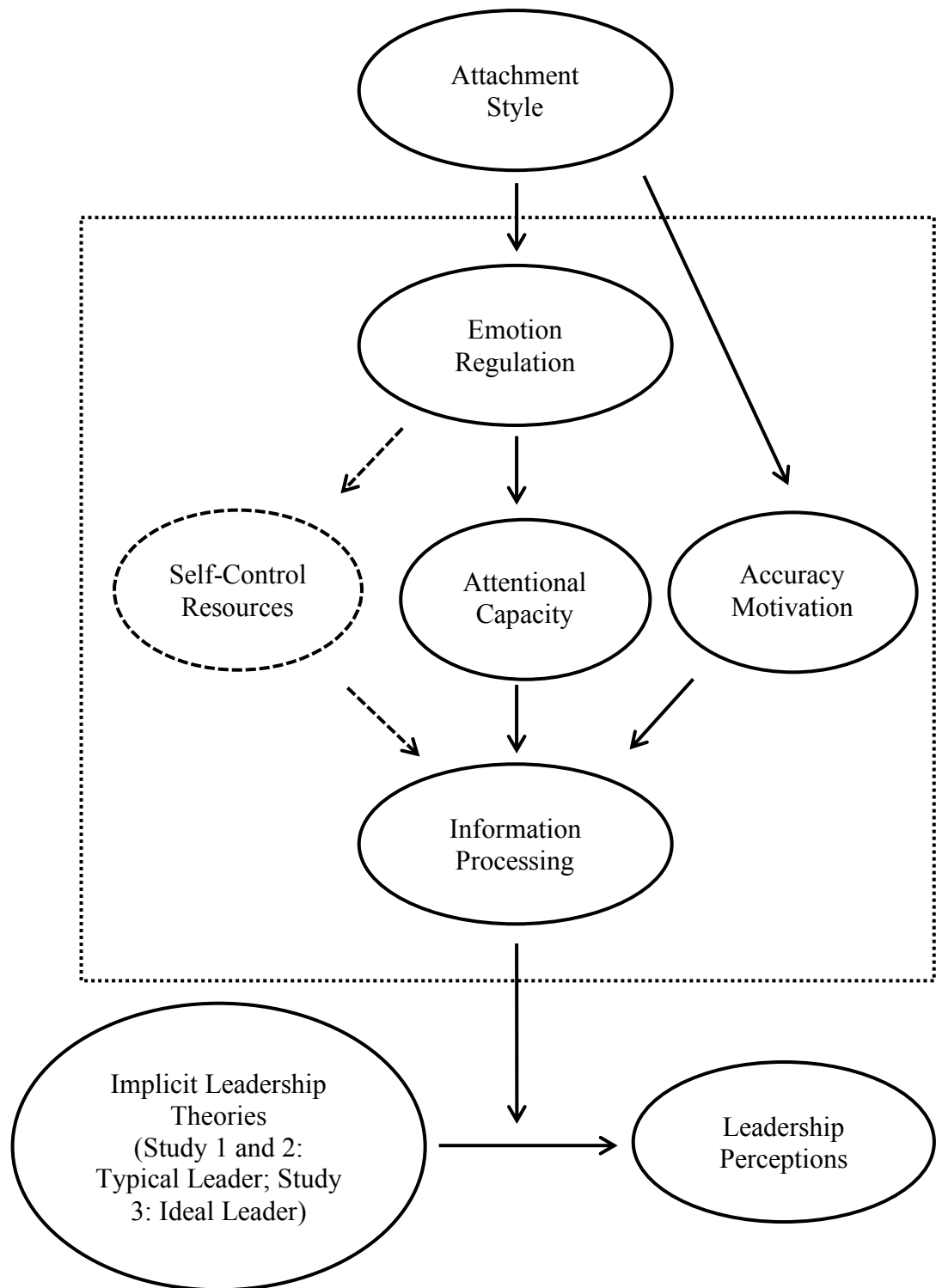


Figure 1. Conceptual model with mediational processes shown in the dotted box. For Study 1 and 2, we focused on self-control resources, depicted as the dashed ellipse, for our theoretical argument but replaced this construct with attentional capacity and accuracy motivation in Study 3.

For Study 3, we revised our theoretical model by focusing on attentional capacity instead of self-control resources. This decision was based on recent criticism of the concept of self-control and the effects of ego-depletion in the literature (Carter, Kofler, Forster, & McCullough, 2015; Inzlicht & Schmeichel, 2012). Moreover, it was suggested that both, attention and motivation should be taken into consideration when investigating the ego-depletion effect (Inzlicht & Schmeichel, 2012). This strategy is also in line with the dual-process theories of impression formation that emphasises the role of both, ability/capacity and motivation, for individuation in social perception (Fiske & Neuberg, 1990; Hansbrough, Lord, & Schyns, 2015; Macrae & Bodenhausen, 2000).

For our revised model, we therefore argue that differences in attachment style lead to differences in attentional capacity (via differences in emotion regulation) as well as differences in accuracy motivation and therefore differences in information processing in social perception. More specifically, we expected a negative relationship between attachment avoidance and attentional capacity as well as accuracy motivation, leading to a higher reliance on ILTs when rating a leader, the higher participants' attachment avoidance. For attachment anxiety, on the other hand, we expected a negative relationship with attentional capacity but a positive relationship with accuracy motivation due to higher self-reported curiosity (Mikulincer, 1997). With the effects of reduced attentional capacity and accuracy motivation working in opposite directions, we were also aiming to find a post-hoc explanation for our mixed results regarding attachment anxiety in Study 1 and 2.

Turning to the effects of ILTs, we would like to emphasise that our theoretical approach differs substantially from previous work where the focus was on variation in the *content* of ILTs (e.g., Hansbrough, 2012) or effects on leadership

perception due to variations in attachment styles (e.g., Davidovitz et al., 2007). Such research focused on questions like “How do participants’ attachment styles affect their ILTs or leadership perceptions?”, some of this work (e.g., Hansbrough, 2012) also suggested a potential mediation of the relationship between attachment styles and leadership perceptions by ILTs. In the present thesis, however, we focused on variations in ILT *usage* when perceiving a leader due to variations in attachment styles, focusing on the question “How do participants’ attachment styles affect the degree to which they rely on their ILTs when perceiving a leader?”, treating participants’ attachment style as a *moderator* of the relationship between ILTs and leadership perception. This focus contributes to the existing literature by examining when individual differences (attachment styles) can translate ILTs into biased ratings, and provides potential underlying processes as explanations for this moderation.

In short, the current work shifts the attention from differences in *content* of ILTs to differences in *usage* of ILTs whilst also investigating potential underlying processes. In addition to that, results from Study 3 provide insights into how high working memory demands or accuracy goal importance interventions might influence employees’ leadership rating accuracy.

Overview of Chapters 2-4

In Chapter 2 (Study 1 and 2), we will summarise relevant findings regarding ILTs and leadership perception in general before focusing on the three different attachment styles and their place in leadership perception research. We will then briefly touch on the topic of information processing with a special focus on stereotypes before outlining our conceptual model in which we try to capture the underlying emotional and cognitive processes to explain past findings as well as our

additional assumptions. We examined the idea that attachment anxiety or avoidance moderates the relationship between ILTs and leadership perception using two online Amazon MTurk samples of full-time employed participants from the US.

In Chapter 3 (Study 3), we revise our theoretical model to then investigate the underlying processes in the relationship between attachment style and leadership perception. We tested our hypotheses that attentional capacity and accuracy motivation mediate the relationship between attachment style and leadership perception with a *Blockage Manipulation-of-Mediation Design* (Pirlott & MacKinnon, 2016), using an online sample (Prolific) of full-time employed British participants who have reported to a supervisor for at least six months. This research design is discussed in more detail in Appendix J.

In Chapter 4, the General Discussion, we summarise our findings and address strengths and weaknesses of our research. We then address the theoretical and practical implications and describe ideas that could be addressed in future research.

Chapter 2: Study 1 and 2 - Investigating the Moderating Role of Attachment Anxiety and Avoidance on the Relationship Between Implicit Leadership Theories and Leadership Perception

Author Note

Parts of this chapter were presented at the SIOP Annual Meeting in 2014, with the title “Implicit leadership theories, attachment style and leadership perception” (Staudigl & Schyns, 2014).

We would like to thank Barbara Wisse and Rosalie Hall for their valuable feedback on earlier drafts of this chapter.

In Study 1 and 2, we aimed to test our initial idea about the moderating role of attachment style in the relationship between ILTs and leadership perception (see Figure 2). The hypotheses were tested with an experiment (Study 1) as well as a field study (Study 2) using Amazon MTurk samples. In the initial experiment, participants' ILTs about typical leaders, and attachment styles were assessed. Participants were then presented with a vignette that either described a transformational or transactional leader and had to rate the presented leader. In the field study and with a second set of participants, instead of presenting a vignette, participants had to rate their own supervisor.

In the following, we will first focus on the relationship between ILTs and leadership perceptions before addressing the role of attachment style and information processing in more detail.

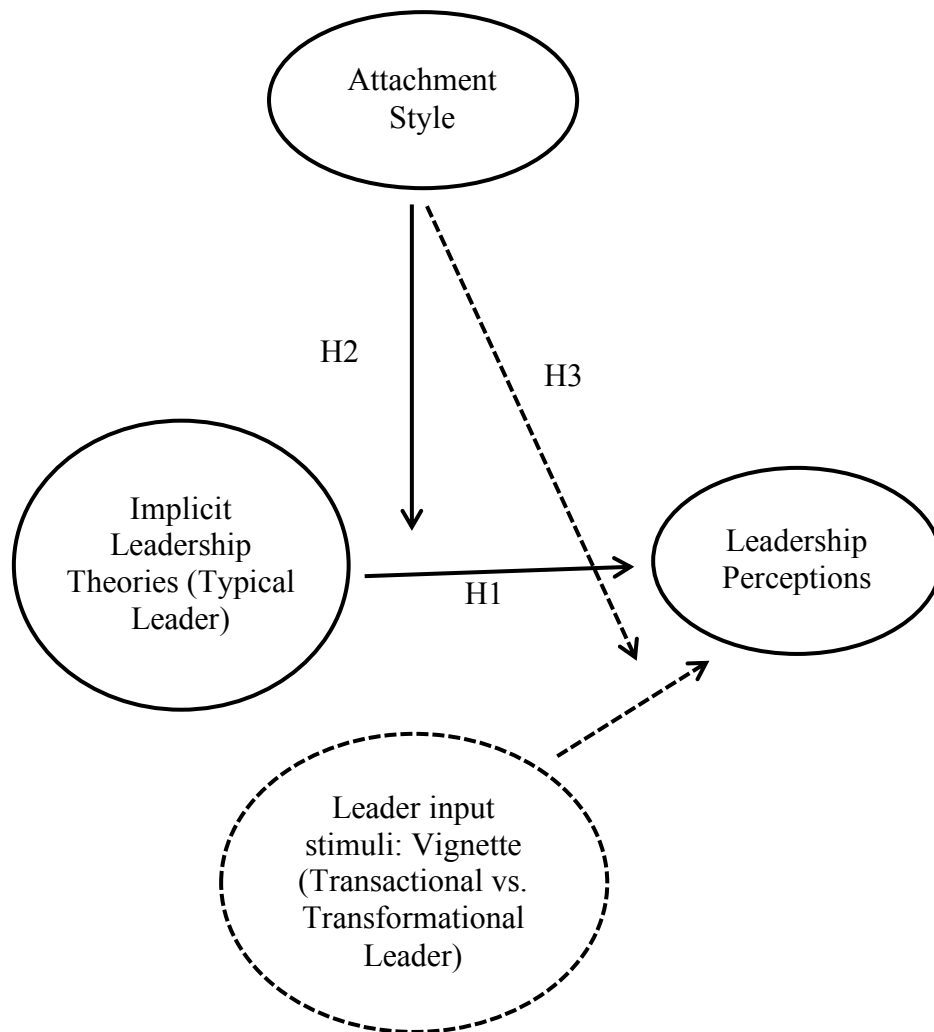


Figure 2. Simplified direct moderation version of Figure 1 tested in Study 1 (rating a fictitious leader) and 2 (rating the own supervisor). The vignette condition (transactional vs. transformational leader) and the corresponding hypothesis H3 (both illustrated with dashed lines) are specific to Study 1 only.

Introduction

Implicit Leadership Theories and Leadership Perception

The expectations or stereotypes about leaders that comprise ILTs include traits or characteristics as well as behaviours of leaders (Kenney, Schwartz-Kenney, & Blascovich, 1996)—basically anything that comes to mind when thinking of a leader. Moreover, one is able to form a certain image of a person labelled as leader in one's head without having even met that person (Eden & Leviatan, 1975; Rush, Thomas, & Lord, 1977; Schyns & Felfe, 2008; Weiss & Adler, 1981).

In addition to ILTs' automatic influence on perceptions, judgment, and evaluation of leaders (Lord & Maher, 1993; Nye & Forsyth, 1991; Schyns et al., 2007; Schyns, Felfe, & Blank, 2007; Shamir, 1992), ILTs can be true or false (just like other stereotypes or schemata), and they are related to cognitive processing errors regarding attention, encoding, retrieval, and cuing of information (Lord, Foti, & De Vader, 1984; Lord & Maher, 1993; Phillips & Lord, 1982). Thus, although being useful for predicting a leader's behaviour, a behaviour can be interpreted in a certain way by one follower (e.g., positive, consultative), but in a totally different way by another follower (e.g., negative, pushy)—simply because the followers have different ILTs (Schyns & Schilling, 2011). Those initial impressions of others can be overcome by getting to know the other person, that is, being open to perceiving a leader's actual traits and behaviours (Schyns & Felfe, 2008).

For the ILTs and perception ratings, we concentrated on transformational leadership behaviour but also on general leadership traits that were found to be related to a transformational leadership style in previous research (Hansbrough & Schyns, under review). The proneness of transformational leadership style to

perceiver biases in general (Bass, 1985) and attachment style based biases in specific (Hansbrough, 2012), make its relationship to implicit theories (van Knippenberg & Sitkin, 2013), and therefore our research question, particularly important. Moreover, we decided to focus on participants' ILTs of a *typical* leader as they usually include both effective as well as ineffective characteristics, with the ineffective characteristics potentially being especially relevant when investigating attachment avoidance as a moderator. In contrast, ILTs of an *ideal* leader, refer to the image of an ideal or effective leader and usually do not include ineffective characteristics (Schyns & Schilling, 2011).

In sum, our first hypotheses sought to replicate findings from previous studies regarding ILTs and leadership perception with a special focus on transformational leadership. More specifically, we expected the following:

H1a: Participants' ratings of general leadership traits expected from a typical leader will predict ratings of (a) general leadership traits and (b) transformational behaviour perceived in a fictitious leader (Study 1) and their own supervisor (Study 2).

H1b: Participants' ratings of transformational behaviour expected from a typical leader will predict ratings of (a) general leadership traits and (b) transformational behaviour perceived in a fictitious leader (Study 1) and their own supervisor (Study 2).

In addition to that, we wanted to go one step further and explore factors that influence the strength of this relationship between ILTs and ratings. Thinking along similar lines, in their conceptual paper, Hansbrough, Lord, and Schyns (2015) specifically focus on factors that can influence the accuracy of follower leadership

ratings and also the degree to which individuals rely on their ILTs when giving leadership ratings. These factors include (1) follower individual differences (personality; positive and negative affectivity; needs and motives, such as attachment needs; and attribution styles) which impact both the availability and encoding of information; (2) mediating factors (stereotype activation and use; perceived similarity; liking; and mood); and (3) contextual factors (leader individual differences; distance; national culture; and research methods and bias). The conceptual model of the present paper was developed parallel to the model of Hansbrough et al. (2015) and hence there is a partial overlap in constructs.

Elaborating more on our conceptual model presented in Chapter 1 (see Figure 1), we will now focus on the different attachment styles and how people's attachment style can be linked to their ILTs and leadership perception before turning to variations in people's information processing. We will then describe how differences in information processing could be caused by differences in attachment style, hence explaining why we expected attachment style to moderate the relationship between participants' ILTs and leadership perception.

Attachment Styles

As mentioned previously, we focused on the following three attachment styles and their differences in the need and desire to attain proximity to a potential security-providing person in times of threat (Ainsworth et al., 2015): attachment anxiety, avoidance, and security. An individual's attachment style is comprised of attachment-related working models that are most chronically accessible to him or her (also referred to as dispositional attachment style). Those working models can either relate to specific relationships (relationship-specific attachment style) or to

relationships in general (global or general attachment style; Mikulincer & Shaver, 2007). Study 1 and 2 asked participants for their general attachment style towards “close relationships”, although the items themselves focused very much on (romantic) partner(s). Study 3 asked participants for their relationship-specific attachment style towards the most important person in their life. In the leadership context, *implicit leadership theories* would come closest the concept of *models of others*.

Mikulincer and Shaver (2007) provide a summary regarding people’s dispositional attachment styles. People high in *attachment anxiety* have received inconsistent caregiver responsiveness and are said to have ambivalent models of others. On the one hand, they have been disappointed in the past, but on the other hand, they still put a lot of hope in the potential security-providing person as they also have had pleasant experiences with that person. Their attachment system tends to be hyperactivated (Main, 1990) or chronically activated (Mikulincer et al., 2000; Mikulincer, et al., 2002; Mikulincer et al., 2003), which results in a behaviour that can seem very needy and clingy in times of threat. People high in *attachment avoidance* have received consistent caregiver *unavailability* and non-responsiveness and are said to have negative models of others and generally a deactivated attachment system. They appear to be little distressed in times of threat and tend to avoid the potential security-providing person.

When people are low on both attachment anxiety and avoidance, they are said to have a *secure attachment style*. These people have experienced consistent caregiver responsiveness in times of threat (seeking proximity and comfort when needed), reinforcing positive models of others (successful security attainment due to proximity-seeking) and providing a well-regulated attachment system. Adult

attachment patterns remain relatively stable over the life span (Crowell, Fraley, & Shaver, 1999; Fraley & Brumbaugh, 2004; Mikulincer & Shaver, 2007), but repeated security priming could nevertheless potentially lead to a higher sense of security (Gillath, Selcuk, & Shaver, 2008). We will now briefly summarise existing studies that have linked variations in attachment styles to variations in ILTs or leadership perception.

Attachment Styles, ILTs, and Leadership Perception

Focusing on attachment style and ILTs, Keller (2003) developed important initial propositions regarding their possible relationship. She addressed: (1) the influence of followers' attachment styles on their ILTs as well as their expectations about how the leader will evaluate their performance; (2) the influence of leaders' attachment styles on their ILTs as well as the expectations about their ability to function in the role of a leader; and (3) the effect of congruence between the followers' and leaders' attachment style on their interaction, with congruent attachment styles resulting in the most positive relationships.

Empirically testing the relationship between attachment style and ILTs, Berson et al. (2006) focused on students' attachment orientation as well as their ILTs and leadership emergence. Securely attached students viewed their ideal leader as more considerate than anxious attached students and as more sociable than attachment avoidant students. Attachment avoidant students rating an ideal leader as less sociable compared to secure students (Berson et al., 2006) is in line with results obtained by Davidovitz et al. (2007). Although mainly focusing on leaders' (in this case, officers') attachment styles, Davidovitz et al. (2007) also reported results regarding the link between followers' (in this case, soldiers') attachment style and

leadership perception. In Study 2, they found that (male) soldiers' attachment avoidance was positively correlated with the appraisal of personalised and negatively correlated with the appraisal of socialised leadership qualities in their officers. Personalised leadership (as opposed to socialised leadership) is said to entail a dictatorial leadership style by emphasising a leader's own interests instead of caring about the needs of followers.

Moreover, soldiers' attachment avoidance was negatively correlated with their "appraisals of their officer's ability to lead in both task-focused and emotion-focused situations" (p. 641). These relationships were independent of officers' attachment scores. Thus, more avoidant followers tended to have perceptual biases even when the officer was secure and displayed a socialised pattern of leadership. As a possible explanation, the authors refer to the idea that individuals high in attachment avoidance hold negative models of others (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1994). Or, using a leadership related term, we suggest that soldiers high in attachment avoidance might hold negative ILTs. Interestingly, Davidovitz et al. (2007) did not find any perception biases (in terms of personalised vs. socialised leadership or leading in both task-focused and emotion-focused situations) in anxiously attached followers. They did find, however, that soldiers' attachment insecurity (both anxiety and avoidance) was negatively correlated with soldiers' perception of the officer as providing security (Study 3).

Using a more controlled design as well as a less stressful context, Hansbrough (2012) presented her participants (undergraduate students) a video of a non-transformational leader and found that attachment anxiety significantly positively predicted transformational leadership perception. Thus, anxiously attached individuals "saw" transformational leadership where there was none. In

contrast, the relationship between attachment avoidance and transformational leadership perception was negative. As a possible explanation, Hansbrough (2012) argues that anxiously attached individuals might, due to their chronically activated attachment system (Mikulincer, Gillath, & Shaver, 2002), be biased in their cognitive processing. They might be motivated to perceive leaders in a self-sustaining manner, that is, as capable of meeting their (i.e., followers') unmet needs which might then lead to the cognitive construction of leaders as being transformational. Moreover, she suggests that perception biases for people high in attachment avoidance might be due to their generalised expectations of others not meeting their needs. Alternatively, she argues that their lower leadership ratings might reflect a defence mechanism.

Compared to Hansbrough (2012), Davidovitz et al. (2007) found fewer perceptual biases related to attachment anxiety. This might be due to the design (experiment vs. field study), the sample (students vs. soldiers), the dependent variable (transformational leadership vs. personalised and socialised leadership), or, the difference in stimulus familiarity. Whereas students in Hansbrough's (2012) sample were asked to rate a non-transformational leader from a video, soldiers in Study 2 of Davidovitz et al. (2007) "had worked with their officer for periods ranging from 6 to 12 months, and they had seen him in many stressful situations" (p. 638). Having had time to get to know the leader might have led anxiously attached individuals to get a more accurate picture of the officers. Therefore, whether biases in leadership perception can be found based on attachment anxiety could depend on whether participants are asked to report their first impression about a leader or whether they are asked to rate a leader they had the chance to get to know.

In conclusion, both Hansbrough (2012) and Davidovitz et al. (2007) suggested a potential mediating role of the content of participants' ILTs when discussing the relationship between attachment style and leadership perception. In addition to these effects, we would argue that the relationships between attachment style and leadership perception could also be caused by a varying degree of relying on ILTs when rating a leader due to attachment style variations.

In order to understand why the relationship between ILTs and leadership perception can be weaker or stronger and how perceptual biases (e.g., due to attachment style) can occur, it is important to have a closer look at people's information processing system. We will address this in the next section.

Information Processing

Short-term vs. long-term memory. Two components of human memory are of special interest for this section: short-term vs. long-term memory. *Short-term memory* is used when considering or consciously processing information in a controlled manner (Shiffrin & Schneider, 1977). It is also referred to as *working memory* (Baddeley, 2012). Information held in the short-term memory can either be forgotten or transferred into long-term memory (called *encoding*) in a transformed and simplified manner (Lord & Maher, 1993). *Long-term memory* has unlimited capacity and consists of the information one has remembered and can potentially bring to mind into short-term memory (through *retrieval*) in order to make a judgment or decision (Lord & Maher, 1993).

People are generally known for being limited-capacity processors (e.g., Fiske & Taylor, 2013). This means that people can only perform few tasks at a time, depending on how much "energy" each task consumes (Anderson, 1990; Kahneman,

1973). Two types information processing are differentiated: automatic vs. controlled processing. *Controlled (or, conscious) processes* are usually stimulus driven, take up a high amount of attention and energy, and place high demands on short-term memory. *Automatic processes* require much less capacity from the short-term memory as they highly depend on pre-existing programs which are stored in long-term memory and are thus driven by knowledge rather than on-the-spot processing (Lord & Maher, 1993). For example, tasks that are well-rehearsed are processed automatically, whereas novel tasks require a high amount of attention from the short-term memory. Therefore, the resource consumption of each task depends (amongst other factors) on how practiced the individual is with performing this task. Usually, the amount of attentional resources required by a task decreases with an increase in practice (Anderson, 1990).

In most cases, processing information in a controlled manner or applying correction processes requires cognitive resources and, therefore, can be hindered by other attentional demands. Concurrent demands can then lead to automatic information processing (Gilbert, Krull, & Pelham, 1988; Gilbert, Pelham, & Krull, 1988). As such, in everyday life, people often have to make decisions that are highly demanding of attention which leaves fewer attentional resources for controlled processing. Coping with this limited resource, people develop knowledge structures over time. They are stored in long-term memory and include cognitive schemas, such as scripts, heuristics, and implicit theories, including implicit leadership theories. Cognitive schemas help people deal with their limited resources available to process information. Those mental structures allow individuals to automatically handle much more information at once in short-term memory (as they are clustered together and processed holistically; Lord & Maher, 1993).

Applying this theory to the organisational context, employees' daily life can be busy and their cognitive demands high. Decisions need to be made and deadlines met. Cognitive schemas located in long-term memory are needed to interpret and simplify information where necessary in short-term memory. Automatic processes in social interactions might then be used to encode person-relevant information. This will be addressed in the next section.

Stereotypes. The differentiation between automatic and controlled information processing can also be found in the social cognitive literature. One automatic way of perceiving others is to use stereotypes. Per definition, *stereotypes* form the cognitive side of intergroup biases (with prejudices describing the affective side of it; Fiske & Taylor, 2013). As stereotypes are a way of categorising people, they require less cognitive resources and are therefore more likely to be used compared to controlled processes (Fiske & Neuberg, 1990). Although this automatic and schema-driven information processing can be very useful in every-day life (as it saves time and energy), one disadvantage is associated biases and processing errors. That is, judgements about another person are made early in the interaction according to the stereotypes that are held about him or her. Instead of collecting more information about this person (i.e., getting to know that person), the stereotype is often used as “valid” information source. Because both stereotypes and accurate memories are easily accessible, perceivers have difficulty distinguishing between these two sources of information.

As described in Rosch's (1978) categorisation theory, missing information due to this simplifying mechanism also causes processing errors, as missing information is reconstructed according to the category used in the situation (Lord & Maher, 1993). Applying this logic to leadership research, this means that using ILTs

(a form of stereotype) also requires fewer cognitive resources (compared to controlled processing) when judging a leader or supervisor, and can result in several types of rating errors. Having briefly summarised human information processing and the usage of stereotypes in particular, we will now go back to leadership research and have a closer look at possible factors that can affect the usage of ILTs in leadership perception.

Influences on Information Processing Strategies: Self-Control as Moderator

Hansbrough et al. (2015) point out various variables that can influence the (in)accuracy of follower leadership ratings: stereotype activation and use, perceived similarity, liking, and mood. Another potential variable influencing the relationship between ILTs and leadership perception could be self-control capacity.

Self-control capacity. Self-control capacity is important for managing our own responses, especially for being consistent with social standards, ideals, values, morals, and expectations (Baumeister et al., 2007). The four domains of self-control are *controlling thoughts, managing emotions, overcoming unwanted impulses, or fixing attention* (Baumeister, Heatherton, & Tice, 1994; Tangney et al., 2004). However, the ability for self-controlling relies on a limited resource. Each act of self-control depletes an individual's self-control resource (called ego depletion) which in turn affects other self-control tasks (Baumeister et al., 2007). Self-control capacity can be interpreted as a dispositional trait with some people possessing generally more self-control resources than others, as well as being a momentary state (Tangney et al., 2004), which describes resources available at a particular moment.

Investigating possible consequences of ego depletion on executive functioning, Schmeichel, Vohs, and Baumeister (2003) explicitly differentiated

between simple information processing and complex, logical reasoning. They predicted that only the latter form of processing will be affected by ego depletion, as simple information processing occurs automatically and therefore does not require self-control resources. As such, ego depletion only impaired intellectual performance on higher order tasks (i.e., logic and reasoning, cognitive extrapolation, and thoughtful reading comprehension) but not on simple tasks (i.e., general knowledge, memorisation, and recall of nonsense syllables). Moreover, mood did not mediate this relationship as ego depletion did not lead to changes in mood. The authors suggest that it is the capacity for volition and self-control that is depleted which is needed to override responses, such as automatic information processes. In line with that argument, Gailliot, Plant, Butz, and Baumeister (2007) concluded that suppressing stereotypes requires self-control resources—but only when the general motivation to respond without prejudices is low (and people are thus not skilled at suppressing stereotypes).

Therefore, it seems that automatic information processes, such as the usage of stereotypes, might not be influenced by self-control depletion. Suppressing those stereotypes or engaging in individuating processes, in turn, does indeed require self-control resources as it is an action of overriding responses. Linking those results to our proposed model, overriding the tendency to use ILTs when rating a leader should require self-control resources as well. We therefore argued that the higher the self-control resources, the lower the tendency to rely on ILTs when rating a leader. We will now focus on one of the four domains of self-control in particular: emotion regulation.

Influences on Self-Control: Emotion Regulation

Emotion-regulation accesses the same self-control resources as the other three domains of self-control (Baumeister et al., 1994; Tangney et al., 2004). However, Richards and Gross (2000) addressed the question whether every form of emotion regulation results in ego depletion. For this, the authors contrast three views regarding the effort of emotion regulation. Whereas the automaticity view indicates that emotion regulation should, due to its overlearning over time, happen on an automatic level (and thus be cognitively inexpensive), the ego depletion and attentional views regard emotion regulation as a cognitively expensive undertaking.

In three studies, the authors integrated the different views by differentiating between *antecedent-focused* and *response-focused emotion regulation*. Whereas the former emotion regulation strategy happens before the actual full formation of the emotion, the latter strategy takes place after the emotion appraisal of the event. *Reappraisal* of the emotional content of a situation (e.g., viewing the upcoming job-interview as challenging rather than stressful) is an antecedent-focused emotion regulation strategy, whereas *expressive suppression* of, for example, an emotional facial expression, is a response-focused emotion regulation. The authors argued that the cognitive expenses of emotion regulation depend on *where* it takes place in the emotion generative process. They found that only suppression, but not reappraisal, led to poorer performance on memory. The authors conclude that not every form of emotion regulation is effortful and cognitively expensive, and suggest that some forms of emotion regulation affect memory and could therefore influence social functioning.

In sum, it seems that different emotion regulation strategies require different amounts of self-control resources. One way of categorising people according to their

general emotion regulation strategies is their attachment style, as the attachment system itself is an emotion regulation device (Mikulincer & Shaver, 2007). We will now explain how people's attachment style influences their emotion regulation before linking it back to leadership research.

Influences on Emotion Regulation: Attachment Style

One main difference in affect regulation strategies between secure and insecure individuals is the extent to which they constructively regulate emotions (Epstein & Meier, 1989; Mikulincer et al., 2003; Shaver & Mikulincer, 2002). Constructive ways of emotion regulation mean that the individual can maintain attention to engage in emotion regulation strategies such as reappraisal of situation or maintaining an optimistic sense of self-efficacy rather than becoming overwhelmed or a victim of rumination (Mikulincer & Shaver, 2007). Individuals high in attachment security use constructive ways of regulating their emotions, which lead to less ego depletion. Insecurely attached individuals, on the other hand, are characterised by using non-constructive ways of emotion regulating. Examples of non-constructive ways of emotion regulation are suppression of emotional states or rumination on actual and potential threats which can lead to intensification of the emotional states (Mikulincer & Shaver, 2007). This, in turn, can lead to cognitive impairment due to, as we argue, more ego depletion.

Table 1 in Chapter 1 summarised how differences in attachment style can lead to differences in emotion regulation and coping strategies, behaviour, cognitive load, available self-control resources, information processing, and the likelihood of person perception distortions. Overall, it can be concluded that the antecedent-focused emotion regulation strategies used by people high in attachment security,

which take place very early in the emotion-generative process (Richards & Gross, 2000) are more constructive and thus less ego depleting than the postemotive response-focused emotion regulation strategies used by attachment avoidant people which take place after response tendencies due to emotions have been triggered (Richards & Gross, 2000). For example, Wei, Vogel, Ku, and Zakalik (2005) found that *Emotional Cut-off* (i.e., turning away from others and emotions when emotional experiences get too intense; reflecting the maladaptive affect regulation strategy of attachment system deactivation) mediated the association between attachment avoidance and negative mood, and attachment avoidance and interpersonal problems. In addition, attachment avoidant people also engage in preemptive strategies which consume cognitive resources even when the attachment system is not activated (Fraley, Garner, & Shaver, 2000).

Individuals high in attachment anxiety, on the other hand, seem to be overly sensitive towards threatening cues. For example, Wei, Vogel, Ku, and Zakalik (2005) found that *Emotional Reactivity* (i.e., being emotionally labile or hypersensitive; reflecting the maladaptive affect regulation strategy of attachment system hyperactivation) mediated the association between attachment anxiety and negative mood, and attachment anxiety and interpersonal problems. Moreover, individuals high in attachment anxiety are said to have a chronically activated attachment system (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002; Mikulincer et al., 2003) and tend to ruminate a lot over negative thoughts (Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Shaver, 2007; Pistole, 1995), thus generally lowering self-control resources.

Moderating Hypotheses

In sum, the secondary attachment strategies of both anxiously as well as avoidant attached individuals result in emotion regulation strategies that lead to a higher cognitive load, less self-control resources, and therefore make information processing impairment more likely². As people tend to fall back onto automatic information processing strategies when cognitive resources are low (Fiske & Neuberg, 1990; Fiske & Taylor, 2013), encouraging the usage of stereotypes, we expected the relationship between participants' ILTs and leadership perception to get stronger the higher participants' attachment anxiety or avoidance.

H2a: Attachment anxiety will moderate the relationship between participants' ratings of general leadership traits expected from a typical leader and participants' leadership ratings; the higher participants' attachment anxiety, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.

² Originally, we had assessed general self-control capacity as an individual difference measure as well. After closer inspection, however, we concluded that this was not an efficient strategy to test our initial idea that self-control mediates the moderation of attachment style on the relationship between implicit leadership theories and leadership perceptions. Instead, a process variable should have been used for capturing self-control. This has been done in Study 3. In Appendix D, we have included the items for the self-control measure originally assessed for these studies as well as correlation tables including this variable.

H2b: Attachment anxiety will moderate the relationship between participants' ratings of transformational behaviour expected from a typical leader and participants' leadership ratings; the higher participants' attachment anxiety, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.

H2c: Attachment avoidance will moderate the relationship between participants' ratings of general leadership traits expected from a typical leader and participants' leadership ratings; the higher participants' attachment avoidance, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.

H2d: Attachment avoidance will moderate the relationship between participants' ratings of transformational behaviour expected from a typical leader and participants' leadership ratings; the higher participants' attachment avoidance, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.

After having outlined our model and assumptions, we will now present the two studies with which we have tested our hypotheses.

STUDY 1

The aim of Study 1 was to test our hypotheses using an experimental design by presenting participants to one of two vignettes about a transformational vs. transactional leader. By controlling the input stimuli, differences in the output variable (i.e., perceptual biases) are easier to trace back to underlying causes.

In addition to our general hypotheses mentioned previously (see Figure 2), we also had hypotheses specific to Study 1 due to its experimental nature. We expected attachment style to act as a moderator, but this time on the relationship between leader input stimuli and participants' leadership perception. As such, we expected this relationship to be weaker the higher the attachment anxiety or avoidance, reflecting yet again the increasing proneness to rely on ILTs when rating a leader (and hence a decreasing influence of the actual leader input stimuli).

H3a: Attachment anxiety will moderate the influence of the leader input stimuli on participants' leadership ratings; the higher participants' attachment anxiety, the weaker the relationship. This effect will hold for ratings regarding both (a) general leadership traits and (b) transformational behaviour.

H3b: Attachment avoidance will moderate the influence of the leader input stimuli on participants' leadership ratings; the higher participants' attachment avoidance, the weaker the relationship. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.

Method

Sample and Procedure

In total, 227 study participants were recruited in August 2013 via Amazon MTurk, a crowdsourcing internet marketplace. Participants were drawn from a US population including people from various ethnicities. As a prerequisite, participants had to be in full-time employment and have a supervisor. Each participant was paid USD 2 for taking part in the online survey. From all the participants, four were excluded (two participants taking less than ten minutes for the survey completion, one participant showing no variance in the answer pattern and one participant indicating having zero years of work experience with a supervisor), resulting in a sample of $N = 223$.

The three statistics *Mahalanobis distance*, *leverage values*, and *studentised deleted residual* were used to detect outliers. For this, four regressions of the main analysis (two for both attachment anxiety and attachment avoidance as moderators) were run and the statistics saved. The resulting 12 variables were then examined using the explore function of IBM SPSS 20. Outliers in the boxplot diagrams were recorded. In nine cases, participants were outliers six times or more, so we took a closer look into the data to see whether there was any conspicuous answer pattern or whether the demographics of these participants revealed a possible explanation. For five participants, a conspicuous answer pattern could be found giving the impression the participants had not read the items. These participants were excluded in all subsequent data analyses. For the remaining 218 participants, the mean age was $M = 33.8$ years ($SD = 10.1$), 54.1 % were male, and participants had on average 10.9 years of work experience with a supervisor ($SD = 9.1$). Most of the participants

were either American (65.6%) or Indian (29.8%)³. Where necessary, variables were recalculated again with the cleaned data set prior to running the regressions for the main analysis.

Data for the present study was collected as part of a larger study. Only measures relevant to this study will be presented. Online assessment of the variables and presentation to one of the two vignettes took place in the same session. First, participants were asked to complete various trait measures, including attachment style and social desirability, as well as two ILT measures. After that, participants were presented with a written vignette about a leader. For approximately half of the participants ($n = 110$) this leader showed a transactional, for the other half ($n = 108$), a transformational leadership style (Felfe & Schyns, 2006; Kirkpatrick & Locke, 1996). Participants were then instructed to rate the fictitious leader from the vignette using various measures. This was followed by questions about participants' own supervisor (not analysed for this study) and their demographics. There was no missing data.

Materials

The two versions of the vignette (see Appendix A) were developed by Felfe and Schyns (2006) based on a study by Kirkpatrick and Locke (1996). All participants had to imagine being at the beginning of a three-month trainee program of a big company that produces paper. The CEO of this company is going to lead a project called "Paper for People" and is holding a short welcome-speech to the trainees, introducing the project. The speech itself differs according to the condition participants are in. In the transformational leadership condition, the speech contains

³ Due to the high percentage of Indian participants, nationality (American vs. Not American) was considered as a control variable.

aspects emphasizing “a vision, values, confidence, and underlined personal commitment” (Felfe & Schyns, 2006, p. 719). The transactional vignette did not contain such transformational aspects but focused on describing the task and production process in detail, and emphasised the clarification of “rewards, responsibilities, goals, and control procedures” (Felfe & Schyns, 2006, p. 719).

Primary Measures

Implicit leadership theories. Implicit leadership theories were assessed focusing on two different aspects: (1) general leadership traits expected from a typical leader (*ILT Traits*) and (2) transformational behaviour expected from a typical leader (*Implicit Theories of Transformational Leadership Behaviour*). To assess *ILT Traits*, participants were presented to 21 traits (Epitropaki & Martin, 2004; Offermann, Kennedy, & Wirtz, 1994) and, using a 9-point Likert-scale (1 = *Not at all characteristic*, 9 = *Extremely characteristic*), were asked to rate how characteristic each trait is for a typical leader. This ILT scale has six dimensions: “Sensitivity” (three items, e.g., “Understanding” and “Helpful”, $\alpha = .90$), “Intelligence” (four items, e.g., “Knowledgeable” and “Clever”, $\alpha = .86$), “Dedication” (three items, e.g., “Motivated” and “Hard-working”, $\alpha = .89$), “Dynamism” (three items, e.g., “Energetic” and “Strong”, $\alpha = .86$), “Tyranny” (six items, e.g., “Domineering” and “Pushy”, $\alpha = .86$), and “Masculinity” (two items, “Masculine” and “Male”, $r = .91$).

Hansbrough and Schyns (under review) suggest that especially the four dimensions Sensitivity, Intelligence, Dedication, and Dynamism reflect a combination of general leadership traits which can be particularly relevant to the appeal of transformational leadership. Consistent with Lord, Brown, Harvey, and Hall (2001), who maintain that ILTs are reconstructed subject to contextual

constraint on recurrent connectionist networks, general ILTs facilitate top-down schema-driven encoding. Such networks create a pattern that activates the multiple nodes representing ILTs (i.e., sensitivity, intelligence, dedication, and dynamism). The general activation in pattern then permits top-down, schema-driven sense making of stimuli. These four dimensions were summarised into one variable called *ILT Traits* by creating a unit weighted composite score. For this, each of the four dimensions were standardised first ($M = 0$ and $SD = 1$) to ensure that each dimension was represented equally in the composite score. The unit weighted composite score was the mean of the sum of these dimensions ($\alpha = .90$).

To assess the second aspect, *Implicit Theories of Transformational Leadership Behaviour* (i.e., the transformational behaviour expected from a typical leader), participants were asked to rate a typical leader by indicating how much they (dis)agreed with statements from the *Transformational Leadership Behavior Inventory* (Podsakoff, Mackenzie, & Moorman, 1990) using a 7-point Likert-scale (1 = *Strongly disagree*, 7 = *Strongly agree*). More specifically, the description started with “A typical leader...” followed by items of the scale. These more behavioural measures of ILTs could be expected to facilitate bottom-up, data-driven encoding. The scale consists of 23 descriptions of transformational leadership behaviour (e.g., “Paints an interesting picture of the future for our group”) and five descriptions of transactional leadership behaviour, labelled as “Contingent Reward” (e.g., “Always gives me positive feedback when I perform well”, five items, $\alpha = .87$). The transformational leadership items can be further divided into the dimensions “Articulating a Vision” (five items, $\alpha = .90$), “Providing Appropriate Model” (three items, $\alpha = .91$), “Fostering Acceptance Goals” (four items, $\alpha = .91$; those three dimensions forming the first key dimension, or the “core”), “High Performance

Expectations” (three items, $\alpha = .78$), “Individual Support” (four items, $\alpha = .70$), and “Intellectual Stimulation” (four items, $\alpha = .88$). For the present study, the transformational leadership behaviour dimensions were summarised into one variable called *Implicit Theories of Transformational Leadership Behaviour* by creating a unit weighted composite score. For this, each of the six dimensions were standardised first ($M = 0$ and $SD = 1$) to ensure that each dimension was represented equally in the composite score. The unit weighted composite score was the mean of the sum of these dimensions ($\alpha = .88$).

Perceived leadership. As with participants’ ILTs, their perception of the presented leader was assessed focusing on two aspects: (1) general leadership traits perceived in the presented leader (*Trait Ratings*) and (2) transformational behaviour perceived in the presented leader (*Transformational Behaviour Ratings*). *Trait Ratings* were assessed using the same scale used for *ILT Traits*. This time, participants rated how characteristic each of the 21 traits was for the presented leader. Cronbach’s alphas for the dimensions were as follows: Sensitivity: $\alpha = .91$ (three items), Intelligence: $\alpha = .92$ (four items), Dedication: $\alpha = .91$ (three items), Dynamism: $\alpha = .91$ (three items), Tyranny: $\alpha = .87$ (six items), and Masculinity: $r = .84$ (two items). Like with the variable *ILT Traits*, the four dimensions Sensitivity, Intelligence, Dedication, and Dynamism aggregated into one variable called *Trait Ratings* by standardising the dimensions first and then creating a unit weight composite score ($\alpha = .92$).

To assess the second aspect, *Transformational Behaviour Ratings*, the same scale as for *Implicit Theories of Transformational Leadership Behaviour* was used. Again, the transformational leadership behaviour dimensions “Articulating a Vision” (five items, $\alpha = .91$), “Providing Appropriate Model” (three items, $\alpha = .85$),

“Fostering Acceptance Goals” (four items, $\alpha = .92$), “High Performance Expectations” (three items, $\alpha = .83$), “Individual Support” (four items, $\alpha = .70$), and “Intellectual Stimulation” (four items, $\alpha = .90$) were aggregated into one variable called *Transformational Behaviour Ratings* by standardising the dimensions first and then creating a unit weight composite score ($\alpha = .89$).

Attachment style. Participants’ attachment style was assessed using the *Experience of Close Relationships Scale* (ECR; Brennan, Clark, & Shaver, 1998). This commonly used measure consists of two dimensions, namely attachment anxiety and attachment avoidance (18 items each). On a 7-point Likert-scale, participants are asked to indicate how much they (dis)agree with each statement (1 = *Strongly disagree*, 7 = *Strongly agree*). Sample items are “I worry about being abandoned.” (attachment anxiety) or “I prefer not to show a partner how I feel deep down.” (attachment avoidance). Participants scoring low on both dimensions have a secure attachment style, although a categorical classification into attachment styles is not common in research anymore. Instead, the degrees of attachment anxiety or avoidance are of interest. The scale reliabilities were $\alpha = .93$ and $\alpha = .95$ for attachment anxiety and avoidance, respectively.

Secondary Measure: Covariate

Social desirability. As the attachment measure might be influenced by social desirability due to impression management (Leak & Parsons, 2001), this construct was assessed using the short form X1 by Strahan and Gerbasi (1972), as suggested by Fischer and Fick (1993). It consists of ten items from the original *Marlowe-Crowne Social Desirability Scale* (Crowne & Marlowe, 1960). Sample items include “I like to gossip at times” (denial item), “I always try to practice what I preach” (attribution item), or “I never resent being asked to return a favor”

(attribution item). In the original instructions, participants have to indicate for each statement whether it is true or false for them. In the present study, the items were mixed amongst the attachment style items. Therefore, the answering format was a 7-point Likert-scale, with participants indicating how much they (dis)agree with each statement (1 = *Strongly disagree*, 7 = *Strongly agree*). Items that were categorised as denial items (as opposed to attribution items) by Crowne and Marlowe (1960) were reverse coded before summarising all ten items in a mean score scale (Cronbach's $\alpha = .70$).

Further potential covariates and demographical questions. In addition to social desirability, participants' positive and negative trait affectivity were assessed as well. Originally, we had also used those variables, as well as participants' age and nationality (American vs. Not American) as control variables when testing our model. However, it did not change the results substantially and we hence decided, for the sake of parsimony, to only include social desirability as a control variable. In Appendix D and E, we have included the items for positive and negative trait affectivity originally assessed, as well as correlation tables including these variables. Participants also indicated how long (in years) they have worked for their current organisation and how many hours a week they work.

Results

All analyses were done using IBM® SPSS® Statistics 20. To test for multicollinearity of the predictors, regression models used to test H2 and H3 were checked using collinearity diagnostics produced by IBM® SPSS® when running the regressions. The variance inflation factor (VIF) should be below 10 and the tolerance statistic (1/VIF) above 0.1 but ideally above 0.2 (Field, 2009). This was

always the case and we therefore did not expect multicollinearity to be a potential problem for our subsequent analyses and interpretations.

Descriptive Statistics

Means, standard deviations, alphas, and correlations of the variables are given in Table 2. The correlation between attachment anxiety and avoidance was $r = .40$ ($p < .01$, two-tailed)⁴ and possible reasons will be addressed in the discussion. Social desirability had a significant negative correlation with attachment anxiety ($r = -.49$, $p < .001$, two-tailed) and attachment avoidance ($r = -.37$, $p < .001$, two-tailed), indicating that the higher participants' attachment anxiety or avoidance, the lower their tendency to reply in a social desirable way. Or, seeing it from a different angle, the higher participants' scores on social desirability, the lower their stated degree of attachment anxiety or avoidance. This might suggest that the higher participants' social desirability, the less likely they are to admit that they are attachment anxious or avoidant, two potential undesirable traits. Social desirability was used as a control variable in subsequent analyses.

The correlation between the two independent variables ILT Traits ($M = 0.00$, $SD = 0.90$) and Implicit Theories of Transformational Leadership Behaviour ($M = 0.00$, $SD = 0.80$) was $r = .71$ ($p < .01$, two-tailed). Therefore, covariation could cause a potential problem. We addressed this by also running all analyses with the independent variable that was not of main interest as a control variable. As the overall pattern of results was not affected by this and due to parsimony reasons, we did not include the additional control variable in the regression analyses presented here but point out accordingly in the analyses where it would have made a

⁴ Controlling for the attachment dimension that was not used as an independent variable did not change the obtained interaction results in the main analyses.

difference. Regression tables including the additional control variable are given in Appendix F.

The correlation between the two dependent variables Trait Ratings ($M = 0.00$, $SD = 0.90$) and Transformational (TFL) Behaviour Ratings ($M = 0.00$, $SD = 0.81$) was $r = .85$ ($p < .01$, two-tailed). This high correlation could be of methodological as well as of substantive nature. The data also suggests that there may be an indirect effect of ILT Traits on TFL Behaviour Ratings through Trait Ratings which will be addressed in the next section.

It is worth noting that the means of zero for the ILT Behaviour and TFL Behaviour Ratings as well as for ILT Traits and Trait Ratings reflect the fact that these are composites of standardised variables. The effect of the vignette condition on Trait Ratings was $r = .07$ (*ns*) and $r = .17$ ($p < .05$, two-tailed) for Transformational Behaviour Ratings.

Table 2

Study 1: Means, Standard Deviations, Alphas, and Correlations of the Variables

	1	2	3	4	5	6	7	8
1. ILT Traits (UWC)	(.90)							
2. ILT Behaviour (UWC)	.71**	(.88)						
3. Trait Ratings (UWC)	.56**	.51**	(.92)					
4. TFL Behaviour Ratings (UWC)	.45**	.48**	.85**	(.89)				
5. Anxiety	-.12	-.16*	-.02	-.05	(.93)			
6. Avoidance	-.32**	-.30**	-.28**	-.29**	.40**	(.95)		
7. Social Desirability	.11	.12	.02	.05	-.49**	-.37**	(.71)	
8. Condition Vignette	-.09	-.04	.07	.17*	.03	.07	-.04	-
M	0.00	0.00	0.00	0.00	3.49	2.69	4.43	0.50
SD	0.90	0.80	0.90	0.81	1.27	1.12	0.90	0.50

Note. N = 218. Values given in brackets are reliabilities. UWC = Unit weighted composite variable. ILT = Implicit Leadership Theory. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance. Vignette: 0 = Transactional Vignette, 1 = Transformational Vignette.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Mediating Role of Trait Ratings

To explore a potential indirect effect of ILT Traits on TFL Behaviour Ratings through Trait Ratings, we used Hayes' PROCESS macro for SPSS (Hayes, 2013).

Results showed that the indirect effect was statistically different from zero, indicated by a 95% bootstrap confidence interval that does not include zero (.335 and .578).

This full mediation suggests that participants based their ratings of transformational behaviour on relevant trait judgments. Trait judgments could reflect spontaneous trait inference, particularly in the transformational stimulus condition, or they could be derived from an overall leadership assessment. As such, the relationship between ILT Traits and TFL Behaviour Ratings mediated by Trait Ratings could be of

methodological as well as of substantive nature. Regarding the latter, this could mean that both processes, ratings of transformational behaviour and trait judgments, reflect top-down processes, instead of ratings of transformational behaviour reflecting bottom-up, stimulus driven processing. Together with the observation that the vignette condition did not have a strong effect on participants' leadership perception (see below), this could indicate that participants generally did not pay a lot attention to the experimental stimulus. Future studies would need to address this question further.

Manipulation Check

With the manipulation check, we not only wanted to check whether the manipulation had worked but also whether both Trait Ratings and Transformational Behaviour Ratings are sensitive enough to capture the difference in leadership (transactional vs. transformational) presented to the participants in the vignette. For this issue, we conducted a MANOVA. Participants in the transformational vignette condition reported higher Transformational Behaviour Ratings for the presented leader ($M = .14$, $SD = .75$) than participants in the transactional vignette condition ($M = -.13$, $SD = .84$), $F(1, 216) = 6.30$, $p < .05$, $\omega^2 = .03$. For Trait Ratings, on the other hand, no significant difference could be found between the transactional vignette ($M = -.06$, $SD = 0.93$), and the transformational vignette ($M = 0.07$, $SD = 0.86$), $F(1, 216) = 1.15$, ns , $\omega^2 = .01$. However, due to its relationship with transformational leadership (Hansbrough & Schyns, under review), we would have expected significant differences in Trait Ratings due to the vignette condition as well. This suggests that the Trait Ratings variable is not sensitive enough to capture differences in transformational leadership perception created by the two vignettes. This should be taken into consideration when interpreting the remaining results. In

addition, there was only a small difference of $\omega^2 = .03$ in-between conditions for Transformational Behaviour Ratings.

Main Data Analysis

H1: ILTs as predictors for leadership ratings. Explicitly testing the first hypotheses was interesting and important for the following reason: We have measured participants' ILTs as well as their leadership ratings each with two measures using either general leadership traits or transformational leadership behaviour items. Therefore, these measures differ from each other regarding the construct (general vs. transformational leadership) as well as regarding the type of information (traits vs. behaviour) to rate.

H1a posits that participants' ratings of general leadership traits (*ILT Traits*) expected from a typical leader would predict ratings of (a) general leadership traits (*Trait Ratings*) and (b) transformational behaviour (*Transformational Behaviour Ratings*) perceived in a fictitious leader. This was supported by results shown in Table 2: (a) $r = .56, p < .01$, two-tailed; (b) $r = .45, p < .01$, two-tailed, respectively. This suggests that ILT Traits are used to guide both, ratings of general leadership traits and transformational behaviour but that the effects are stronger for trait ratings than for behaviour ratings.

H1b posits that participants' ratings of transformational behaviour (*Implicit Theories of Transformational Leadership Behaviour*) expected from a typical leader would predict ratings for (a) general leadership traits (*Trait Ratings*) and (b) transformational behaviour (*Transformational Behaviour Ratings*) perceived in a fictitious leader. Again, this was supported by Table 2: (a) $r = .51, p < .01$, two-tailed; (b) $r = .48, p < .01$, two-tailed.

Taken together, this indicates that, like in the sample of Hansbrough and Schyns (under review), the variables for general leadership (both ILT and rating of the leader) are closely linked to ratings of transformational leadership behaviour (again, both ILT and rating of the leader). However, since correlations of ILT Traits with Trait Ratings ($r = .56$) were noticeably higher than correlations with TFL Behaviour Ratings ($r = .45$), it seems plausible that behavioural ratings were facilitated by trait ratings. Consistent with this interpretation, Trait Ratings and TFL Behaviour Ratings were also strongly related ($r = .85$).

General data analysis strategy. We tested the remaining hypotheses using hierarchical multiple regression modelling. For these analyses, we entered the control variable social desirability first, followed by the condition vignette (0 = Transactional Leader, 1 = Transformational Leader) in the second step. In Step 3, we entered the independent variable (IV) of interest (ILT Traits or Implicit Theories of Transformational Leadership Behaviour; centred). In Step 4, we entered either attachment anxiety or avoidance (centred variables), followed by the interaction term of attachment anxiety (or avoidance) and the IV, and the interaction term of attachment anxiety (or avoidance) and the Vignette variable in one single step in Step 5. In the last two steps, we had originally also entered the interaction term of the IV and the Vignette variable followed by the three-way interaction of attachment anxiety (or avoidance) with the IV and the Vignette variable. These last two steps, however, only made a significant difference in the regression models in three cases and will therefore only be reported and discussed in more detail there. Moreover, as social desirability was never significant by itself and showed relatively

stable effects across the various models, simplified versions of our regression models are shown, starting from Model 2⁵.

H2a: Attachment anxiety as a moderator between ILT Traits and leadership ratings. In H2a, we expected that attachment anxiety would moderate the relationships between participants' ILT Traits of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings. More specifically, we expected that the relationships would be stronger the higher participants' attachment anxiety. These hypotheses were not supported.

Attachment anxiety did not moderate the relationship between ILT Traits and (a) Trait Ratings (see Table 3). Instead, the main effect of ILT Traits remained significant in the last step ($\beta = .59, p < .001$). The higher participants rated their image of a typical leader on the dimensions sensitivity, intelligence, dedication, and dynamism, the higher their ratings of the leader shown in the vignette on these dimensions, independent of whether they were presented to a transactional or transformational leader and independent of their degree of attachment anxiety. As mentioned previously, the DV Trait Ratings did not reflect the differences in transformational leadership perception created by the two vignettes. However, once controlling for participants ILT Traits, the condition vignette was a significant predictor in this combination ($\beta = .12, p < .05$, Model 5), with participants presented

⁵ We have also analysed the potential moderating role of attachment anxiety/avoidance in the relationship between the single ILT trait dimensions predicting participants' leadership ratings on this trait dimension. This idea was based on the notion that some trait dimensions might be more prone to a moderating influence of attachment style than others, based on the idea that people's attachment styles influence the content of their ILTs. Tables and figures are presented in Appendix G. Two interaction effects are noteworthy. The higher participants' attachment anxiety, the stronger the relationship between sensitivity expected from a typical leader and sensitivity perceived in the presented leader (see Table 39 and Figure 22). Moreover, the higher participants' attachment avoidance, the weaker the influence of the leader input stimuli (vignette) on participants' leadership rating on the dimension tyranny (cf. H3b; see Table 49 and Figure 23).

to the transformational vignette giving higher trait ratings compared to participants presented to the transactional vignette.

Table 3

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits with Attachment Anxiety as Moderator

Predictors	Trait Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Vignette	.07	.13*	.13*	.12*
ILT Traits		.58***	.58***	.59***
Anxiety			.09	.16†
Anxiety × ILT Traits				-.11†
Anxiety × Vignette				-.04
R^2	.01	.33	.34	.35
Change in R^2	.01	.32***	.01	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

When including ILT Behaviour as a control variable to account for potential covariation between the two independent variables of interest, the three-way interaction became significant ($\beta = -.21, p < .05$, Model 8; see Appendix F, Table 31). To understand the nature of the interaction, one has to focus on the difference between the two stimulus conditions. In the transactional vignette, the higher the trait rating, the greater the error associated with ILTs. However, in the transformational vignette, the higher the trait rating, the more accurate raters are, at

least in terms of classification level accuracy (Lord, 1985). As such, due to the information consistency (Neuberg & Fiske, 1987), high ratings could reflect either a reliance on transformational ILTs or accurate ratings. Thus, for participants in the transactional vignette condition (see Appendix F, see Figure 20, top) simple slopes analyses showed that for both low and high attachment anxiety, there was a positive association between ILT Traits and Trait Ratings ($b = 0.38, t = 2.41, p < .05$ and $b = 0.50, t = 3.55, p < .001$, respectively). However, slope difference test indicated that the slopes for low and high attachment anxiety in the transactional vignette did not significantly differ from each other ($t = 0.52, ns$). This means that when controlling for ILT Behaviour, the positive relationship between ILT Traits and Trait Ratings for participants presented to the transactional vignette was not moderated by attachment anxiety. For participants in the transformational vignette condition and contrary to our predictions, subsequent simple slopes analyses showed that with *lower* levels of attachment anxiety (1 *SD* below the mean), ILT Traits was strongly positively associated with Trait Ratings, $b = 0.76, t = 4.93, p < .001$, whereas with higher levels of attachment anxiety (1 *SD* above the mean), ILT Traits showed no significant association with Trait Ratings, $b = 0.12, t = 0.97, ns$ (see Figure 20, bottom). A slope difference test indicated that the difference between these slopes was significant ($t = -3.04, p < .01$). That is, for participants who have been presented to the transformational vignette, the lower their attachment anxiety, the more they relied on general leadership traits expected from a typical leader when rating the leader with regards to his general leadership traits. In sum, the non-significant interaction in the transactional vignette is quite understandable: The lower participants' attachment anxiety, the more accurate they should be. Therefore, their ILTs should have less effect on their leadership ratings in the transactional vignette.

In the transformational vignette, on the other hand, which is consistent with their ILTs, they can use ILTs to facilitate trait inferences and an overall interpretation, and therefore show a global pattern of trait ratings.

Regarding the relationship between ILT Traits and (b) Transformational Behaviour Ratings and in line with the manipulation check, the main effect for condition vignette remained significant in the last step ($\beta = .20, p < .01$, see Table 4), as did the main effect for ILT Traits ($\beta = .47, p < .001$). Moreover, we found a significant Attachment Anxiety \times ILT Traits interaction effect ($\beta = -.17, p < .01, \Delta R^2 = .03, p < .05$). However, and contrary to our predictions, subsequent simple slopes analyses showed that with *lower* levels of attachment anxiety (1 *SD* below the mean), ILT Traits was strongly positively associated with Transformational Behaviour Ratings, $b = 0.68, t = 6.67, p < .001$, whereas with higher levels of attachment anxiety (1 *SD* above the mean), ILT Traits showed a weaker positive association with Transformational Behaviour Ratings, $b = 0.27, t = 2.64, p < .01$ (see Figure 3). That is, the higher participants' attachment anxiety, the less they relied on general leadership traits expected from a typical leader when rating the leader with regards to transformational leadership behaviour.

Table 4

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits with Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Vignette	.17*	.21***	.21***	.20**
ILT Traits		.46***	.46***	.47***
Anxiety			.00	.12
Anxiety × ILT Traits				-.17**
Anxiety × Vignette				-.08
R^2	.03	.24	.24	.26
Change in R^2	.03*	.21***	.00	.03*

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

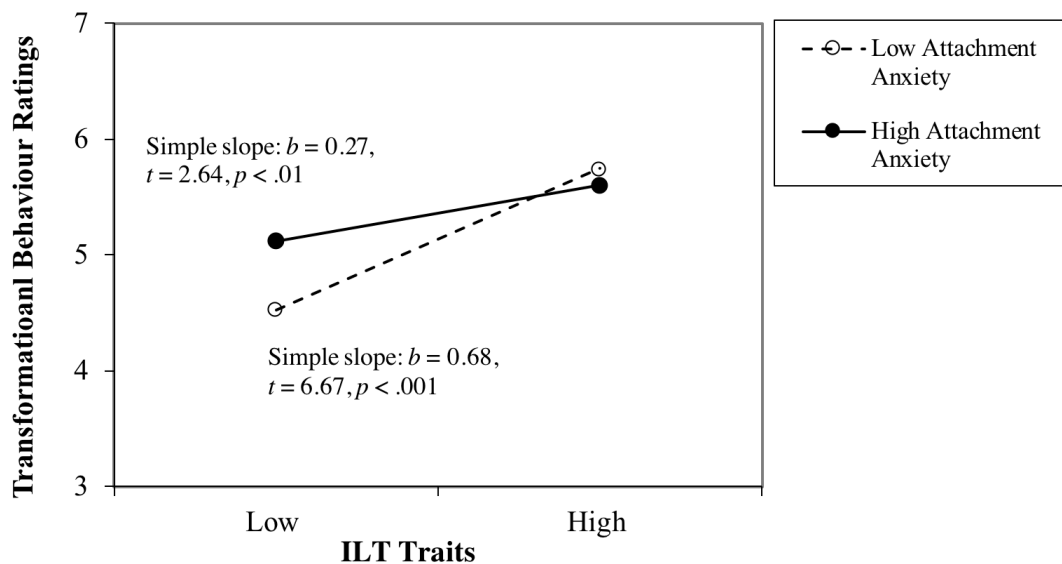


Figure 3. Study 1: Moderating role of attachment anxiety on the relationship between ILT Traits and Transformational Behaviour Ratings (Model 5). N = 218. ILT = Implicit Leadership Theory.

Moderation is significant at $p < .01$.

H2b: Attachment anxiety as moderator between Implicit Theories of Transformational Leadership Behaviour and leadership ratings. In H2b, we expected that attachment anxiety would moderate the relationships between participants' Implicit Theories of Transformational Leadership Behaviour of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings, i.e., they would be stronger the higher participants' attachment anxiety. These hypotheses were not supported.

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (a) Trait Ratings, participants' ILTs remained a significant predictor for their leadership ratings even in the last step after having added the three-way interaction ($\beta = .63, p < .001$, Model 7, see Table 5). Indeed, the effects of ILT for Transformational Leadership Behaviour increases as more terms are added to the model. As expected from the results regarding the manipulation check, the condition vignette was not a significant predictor in this combination. Moreover, the three-way interaction of Attachment Anxiety \times Implicit Theories of Transformational Leadership Behaviour \times Vignette was significant ($\beta = -.23, p < .01, \Delta R^2 = .02, p < .01$). To understand the nature of the interaction, one has to again focus on the difference between the two stimulus conditions. Figure 4 illustrates the three-way interaction focusing on the difference between stimulus condition.

Table 5

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Anxiety as Moderator

Predictors	Trait Ratings					
	Beta					
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Vignette	.07	.09	.09	.09	.09	.06
ILT Behaviour		.51***	.53***	.52***	.59***	.63***
Anxiety			.10	.17†	.18†	.14
Anxiety × ILT Behaviour				-.03	-.02	.14
Anxiety × Vignette				-.08	-.10	-.03
ILT Behaviour × Vignette					-.10	-.10
Anxiety × ILT Behaviour × Vignette						-.23**
R^2	.01	.27	.28	.28	.28	.31
Change in R^2	.01	.26***	.01	.00	.00	.02**

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

For participants in the transactional vignette condition (see Figure 4, top) simple slopes analyses showed that for both low and high attachment anxiety, there was a positive association between ILT Behaviour and Trait Ratings ($b = 0.55$, $t = 4.67$, $p < .001$ and $b = 0.86$, $t = 5.60$, $p < .001$, respectively). However, slope difference test indicated that the slopes for low and high attachment anxiety in the transactional vignette did not significantly differ from each other ($t = 1.60$, ns). This

means that the positive relationship between ILT Behaviour and Trait Ratings for participants presented to the transactional vignette was not moderated by attachment anxiety.

For participants in the transformational vignette condition and again contrary to our predictions, subsequent simple slopes analyses showed that with *lower* levels of attachment anxiety (1 *SD* below the mean), ILT Behaviour was strongly positively associated with Trait Ratings, $b = 0.76$, $t = 4.93$, $p < .001$, whereas with higher levels of attachment anxiety (1 *SD* above the mean), ILT Behaviour showed a weaker positive association with Trait Ratings, $b = 0.34$, $t = 2.91$, $p < .01$ (see Figure 4, bottom). A slope difference test indicated that the difference between these slopes was significant ($t = -2.13$, $p < .05$). That is, for participants who have been presented to the transformational vignette, the lower their attachment anxiety, the more they relied on their implicit theories of transformational leadership behaviour expected from a typical leader when rating the leader with regards to his general leadership traits. Again, the non-significant interaction in the transactional vignette is quite understandable as it is the transformational vignette, which is consistent with participants ILTs.

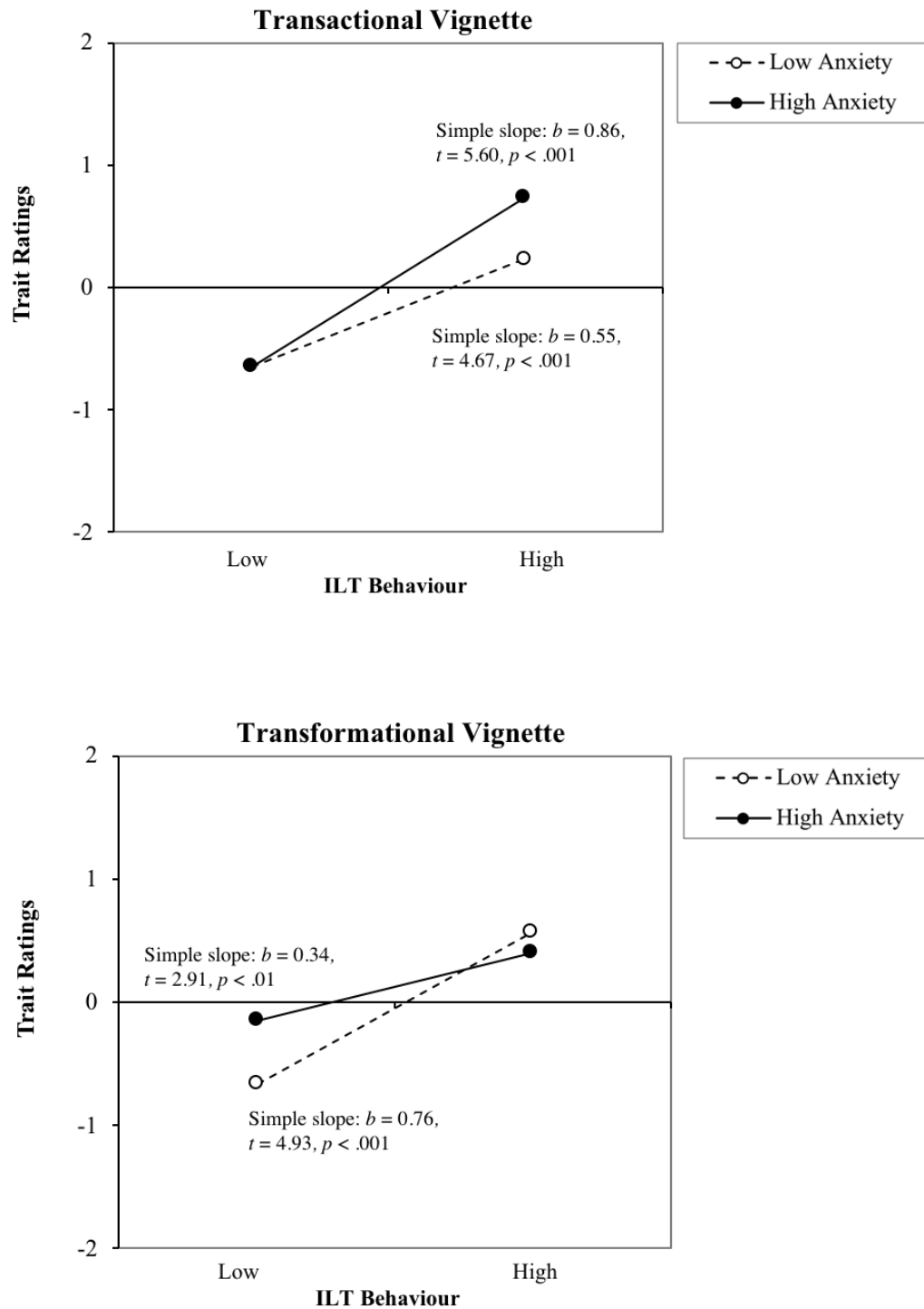


Figure 4. Study 1: Moderating role of attachment anxiety on the relationship between ILT Behaviour and Trait Ratings (Model 7) depending on the experimental condition (top: transactional vignette, slope difference not significant, $t = 1.60$, *ns*; bottom: transformational vignette, significant slope difference, $t = -2.13$, $p < .05$). $N = 218$.

For the relationship between Implicit Theories of Transformational Leadership Behaviour and (b) Transformational Behaviour Ratings, attachment anxiety did *not* act as a moderator, as the interaction term of attachment anxiety and the IV was not significant (see Table 6). Instead, and in line with the results from the manipulation check, the main effect for condition vignette ($\beta = .19, p < .01$) remained significant in Model 5 as did the main effect of Implicit Theories of Transformational Leadership Behaviour ($\beta = .48, p < .001$). The more transformational behaviour participants expected from a typical leader, the more transformational they would rate the behaviour of the leader presented in the vignette, independent of participants' degree of attachment anxiety.

Table 6

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Vignette	.17*	.19**	.19**	.19**
ILT Behaviour		.48***	.48***	.48***
Anxiety			.03	.11
Anxiety \times ILT Behaviour				-.07
Anxiety \times Vignette				-.10
R^2	.03	.26	.26	.27
Change in R^2	.03*	.22***	.00	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

H2c: Attachment avoidance as a moderator between ILT Traits and leadership ratings. In H2c, we expected that attachment avoidance would moderate the relationships between participants' ILT Traits of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings, i.e., they would be stronger the higher participants' attachment avoidance. These hypotheses were not supported.

Regarding the relationship between participants' ILT Traits of a typical leader and their (a) Trait Ratings, participants' ILTs remained a significant predictor for their leadership ratings even in the last step after having added the three-way interaction ($\beta = .57, p < .001$). Moreover, the three-way interaction of Attachment Avoidance \times ILT Traits \times Vignette was significant ($\beta = -.24, p < .01, \Delta R^2 = .02, p < .01$). Figure 5 illustrates the three-way interaction focusing again on the difference between stimulus conditions. For participants in the transactional vignette (Figure 5, top), simple slopes analyses showed that for both low and high attachment avoidance, there was a positive association between ILT Traits and Trait Ratings ($b = 0.43, t = 3.42, p < .01$ and $b = 0.72, t = 6.90, p < .001$, respectively). However, a slope difference test indicated that the slopes for low and high attachment avoidance in the transactional vignette did not significantly differ from each other ($t = 1.90, ns$). This means that the positive relationship between ILT Traits and Trait Ratings for participants presented to the transactional vignette was not moderated by attachment avoidance.

For participants in the transformational vignette and again contrary to our expectations, subsequent simple slopes analyses showed that with lower levels of attachment avoidance (1 *SD* below the mean), ILT Traits was strongly positively associated with Trait Ratings, $b = 0.66, t = 5.00, p < .001$, whereas with higher levels

of attachment avoidance (1 *SD* above the mean), ILT Traits showed a weaker positive association with Trait Ratings, $b = 0.38$, $t = 4.11$, $p < .001$ (see Figure 5, bottom). A slope difference test indicated that the difference between these slopes was significant ($t = -1.99$, $p < .05$). That is, for participants who have been presented to the transformational vignette, the lower their attachment avoidance, the more they relied on general leadership traits expected from a typical leader when rating the leader with regards to his general leadership traits. As mentioned above with attachment anxiety, this could again be because the transformational vignette is consistent with participants' ILTs. The lower participants' attachment avoidance (and potentially more accurate they are), the more they might use ILTs to facilitate trait inferences and an overall interpretation, and therefore show a global pattern of trait ratings.

Table 7

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits with Attachment Avoidance as Moderator

Predictors	Trait Ratings					
	Beta					
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Vignette	.07	.13*	.13*	.13*	.13*	.08
ILT Traits		.58***	.53***	.53***	.60***	.57***
Avoidance			-.14*	-.10	-.08	-.11
Avoidance × ILT Traits				-.01	.00	.16†
Avoidance × Vignette				-.06	-.09	-.08
ILT Traits × Vignette					-.10	-.04
Avoidance × ILT Traits × Vignette						-.24**
R^2	.01	.33	.35	.35	.35	.37
Change in R^2	.01	.32***	.02*	.00	.00	.02**

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

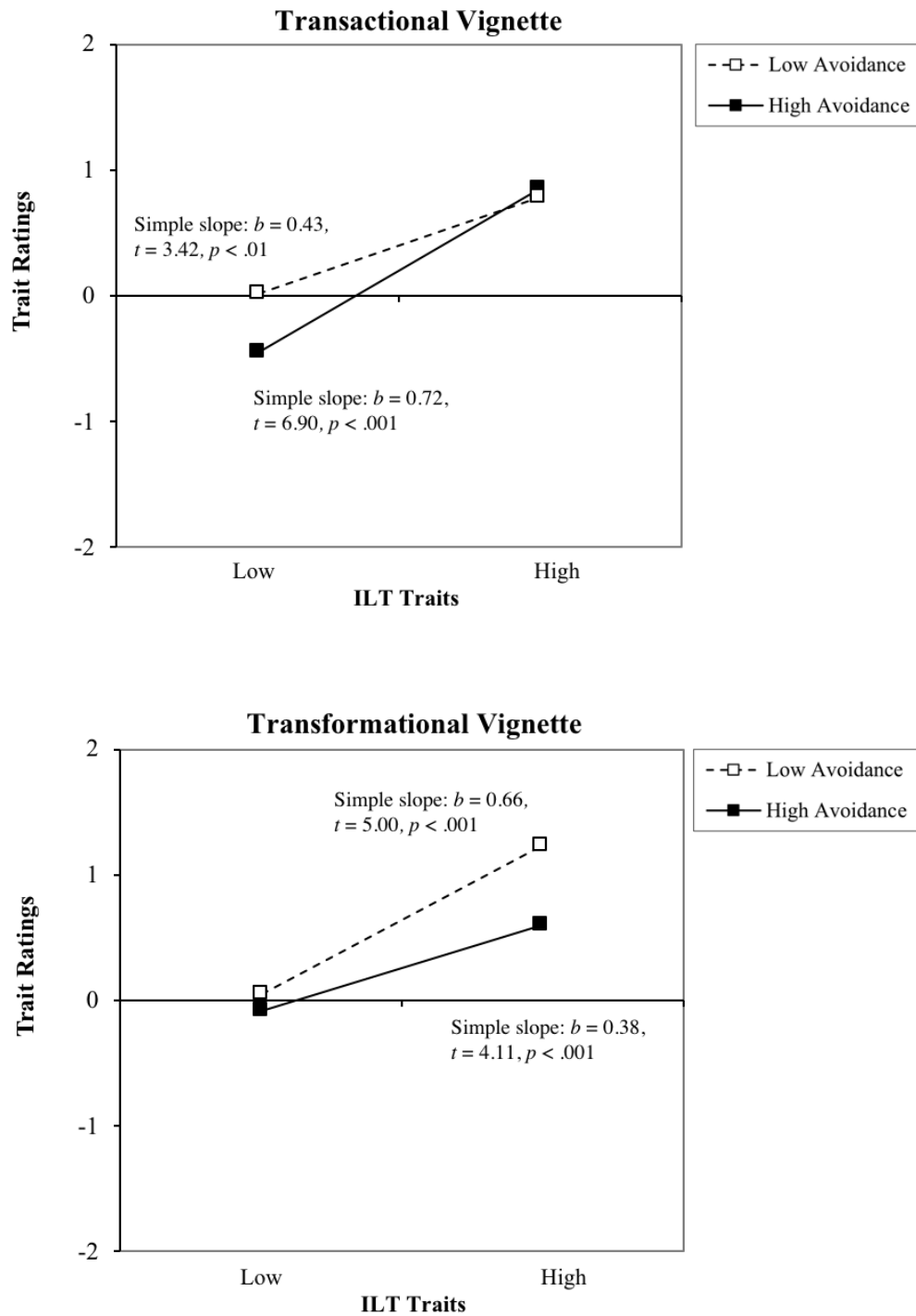


Figure 5. Study 1: Moderating role of Attachment Avoidance on the relationship between ILT Traits and Trait Ratings (Model 7) depending on the experimental condition (top: transactional vignette, slope difference not significant, $t = 1.90$, *ns*; bottom: transformational vignette, significant slope difference, $t = -1.99$, $p < .05$). $N = 218$.

Regarding the relationship between ILT Traits and (b) Transformational Behaviour Ratings, attachment avoidance did not moderate this relationship (see Table 8). Instead, the main effect of condition vignette remained significant in the last step ($\beta = .22, p < .001$, Model 5), as did the main effect for ILT Traits ($\beta = .40, p < .001$, Model 5). The higher participants rated their image of a typical leader on the dimensions sensitivity, intelligence, dedication, and dynamism, the higher their ratings of the leader shown in the vignette on these dimensions, and independent of their degree of attachment avoidance.

Table 8

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits with Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Vignette	.17*	.21***	.22***	.22***
ILT Traits		.46***	.40***	.40***
Avoidance			-.20**	-.11
Avoidance \times ILT Traits				-.02
Avoidance \times Vignette				-.13
R^2	.03	.24	.27	.28
Change in R^2	.03*	.21***	.03**	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

H2d: Attachment avoidance as moderator between Implicit Theories of Transformational Leadership Behaviour and leadership ratings. In H2d, we expected that attachment avoidance would moderate the relationships between participants' Implicit Theories of Transformational Leadership Behaviour of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings, i.e., they would be stronger the higher participants' attachment avoidance. These hypotheses were partially supported.

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (a) Trait Ratings, the main effect for Implicit Theories of Transformational Leadership Behaviour on Trait Ratings remained significant even in the last step after having added the three-way interaction ($\beta = .58, p = .001$, Model 7). Attachment avoidance acted as a significant moderator, indicated by a significant interaction term of Attachment Avoidance \times Implicit Theories of Transformational Leadership Behaviour as shown in Table 9 ($\beta = .31, p < .001$, Model 7). Moreover, entering the three-way interaction term lead to a significant increase in ΔR^2 ($\beta = -.20, p < .05, \Delta R^2 = .02$). Figure 6 illustrates the three-way interaction focusing again on the difference between stimulus conditions. For participants in the transactional vignette and in line with our predictions, subsequent simple slopes analyses showed that with higher levels of attachment avoidance (1 *SD* above the mean), ILT Behaviour was strongly positively associated with Trait Ratings, $b = 0.95, t = 7.21, p < .001$, whereas with lower levels of attachment avoidance (1 *SD* below the mean), ILT Behaviour showed a weaker positive association with Trait Ratings, $b = 0.34, t = 2.67, p < .01$ (see Figure 6, top). A slope difference test indicated that the difference between these slopes was significant ($t = 3.89, p < .001$). That is, for participants who have been presented to the

transactional vignette, the higher their attachment avoidance, the more they relied on their implicit theories of transformational leadership behaviour expected from a typical leader when rating the leader with regards to his general leadership traits.

For participants in the transformational vignette, simple slopes analyses showed that for both low and high attachment avoidance, there was a positive association between ILT Behaviour and Trait Ratings ($b = 0.36, t = 2.55, p < .05$ and $b = 0.54, t = 4.38, p < .001$, respectively). However, a slope difference test indicated that the slopes for low and high attachment avoidance in the transformational vignette did not significantly differ from each other ($t = 0.60, ns$). This means that the positive relationship between ILT Behaviour and Trait Ratings for participants presented to the transformational vignette was not moderated by attachment avoidance.

When including ILT Traits as a control variable to account for potential covariation between the two independent variables of interest, the three-way interaction became non-significant but the Attachment Avoidance \times ILT Behaviour interaction remained significant ($\beta = .14, p < .05$, see Appendix F, Table 37, Figure 21): The higher participants' attachment avoidance, the more they generally (i.e., not vignette specific) relied on the implicit theories regarding transformational behaviour they hold about a typical leader when rating the presented leader on the general leadership traits.

Table 9

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Avoidance as Moderator

Predictors	Trait Ratings					
	Beta					
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Vignette	.07	.09	.10†	.11†	.11†	.08
ILT Behaviour		.51***	.47***	.45***	.57***	.58***
Avoidance			-.18**	-.14	-.11	-.13
Avoidance × ILT Behaviour				.15**	.17**	.31***
Avoidance × Vignette				-.04	-.09	-.09
ILT Behaviour × Vignette					-.17†	-.15†
Avoidance × ILT Behaviour × Vignette						-.20*
R^2	.01	.27	.29	.32	.33	.35
Change in R^2	.01	.26***	.03**	.03*	.01†	.02*

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

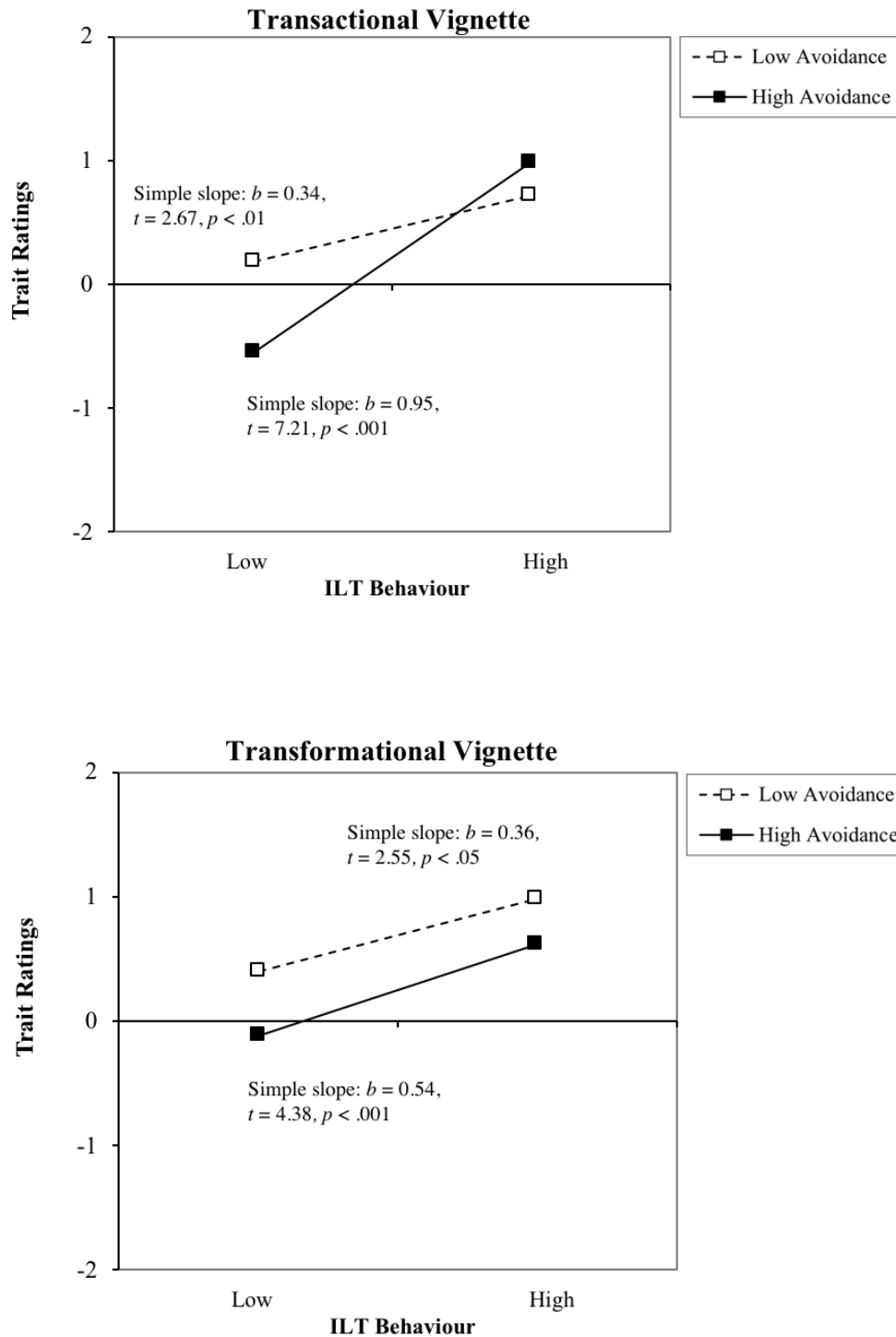


Figure 6. Study 1: Moderating role of Attachment Avoidance on the relationship between ILT Behaviour and Trait Ratings (Model 7) depending on the experimental condition (top: transactional vignette, significant slope difference, $t = 3.88, p < .001$; bottom: transformational vignette, slope difference not significant, $t = 0.60, ns$). $N = 218$.

For the relationship between Implicit Theories of Transformational Leadership Behaviour and (b) Transformational Behaviour Ratings, attachment avoidance did not act as a moderator as the interaction term of attachment avoidance and the IV was not significant (see Table 10). However, and in line with the results from the manipulation check, the main effect for condition vignette ($\beta = .20, p < .001$) remained significant in Model 5, as did Implicit Theories of Transformational Leadership Behaviour ($\beta = .41, p < .001$).

Table 10

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Vignette	.17*	.19**	.20***	.20***
ILT Behaviour		.48***	.43***	.41***
Avoidance			-.20**	-.12
Avoidance \times ILT Behaviour				.09
Avoidance \times Vignette				-.11
R^2	.03	.26	.29	.30
Change in R^2	.03*	.22***	.03**	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

H3a: Attachment Anxiety as moderator between the experimental manipulation and leadership ratings. As mentioned before when reporting the results for the manipulation check, only Transformational Behaviour Ratings, but not Trait Ratings, significantly differed for subjects rating the transactional compared to the transformational vignette. In H3a, we expected that attachment anxiety would moderate the influence of the condition vignette on participants' leadership ratings. More specifically, we expected that the relationship between leader input stimuli and participants' leadership ratings will be weaker the higher participants' attachment anxiety. This effect should hold for both (a) Trait Ratings and (b) Transformational Behaviour Ratings. The hypotheses were not supported as for both the (a) Trait Ratings and for the (b) Transformational Behaviour Ratings entering the Vignette \times Attachment Anxiety interaction did not significantly increase R^2 (see Table 3 - Table 6). Attachment anxiety did therefore not act as a moderator for the effects of the experimental manipulation.

H3b: Attachment Avoidance as moderator between the experimental manipulation and leadership ratings. In H3b, we expected that attachment avoidance will moderate the influence of the condition vignette on participants' leadership ratings. More specifically, we expected that the relationship between leader input stimuli and participants' leadership ratings would be weaker the higher participants' attachment avoidance. This effect should hold for both (a) Trait Ratings and (b) Transformational Behaviour Ratings. Again, the hypotheses were not supported as for both the (a) Trait Ratings and for the (b) Transformational Behaviour Ratings entering the Vignette \times Attachment Avoidance interaction lead to a nonsignificant increase in R^2 (see Table 7 - Table 10). Attachment avoidance did therefore not act as a moderator in the above stated relationship.

Further Observations

Two other effects were noteworthy. First, for almost all analyses there was a strong effect of ILTs. Subjects gave higher leadership ratings when they also gave higher ratings on general and transformational ILTs. Second, at least for transformational scales, there was a consistent, but weak effect of the stimulus on rated behaviour.

Mediating role of ILTs. Though not of main interest, we also tested the potential mediating role of ILTs in the relationship between attachment style and leadership perception using Hayes' PROCESS macro for SPSS (Hayes, 2013). Although attachment anxiety did not predict leadership perception, ILTs mediated the relationships between attachment anxiety and leadership perceptions. Moreover, ILTs acted as a mediator in the negative relationships between attachment avoidance and leadership perceptions. All indirect effects were statistically different from zero as indicated by the 95% bootstrap confidence intervals not including zero. As such, because we have included both, attachment style and ILTs, in the regressions when predicting leadership perception, we could focus on our hypothesised moderating effects of attachment style for our analyses.

Discussion

Overview

In Study 1, we aimed to test our hypotheses that attachment anxiety or avoidance moderates the relationship between ILTs and leadership perception. Our theoretical argument was that both attachment anxiety and avoidance lead to a non-constructive and resource-demanding way of regulating emotions. This, in turn, would lower self-control resources, which are also necessary to engage in detailed stimulus encoding or cognitive correction processes when perceiving others. We

assumed that the higher people's attachment anxiety or avoidance, the lower their self-control resources available and thus the higher their tendency to rely on implicit leadership theories about a typical leader (ILT; a specific form of stereotype) when judging a fictitious leader presented to them in a vignette. Participants were either presented with a vignette of a transactional leader or a transformational leader.

Table 11 summarises whether or not our hypotheses were supported.

ILTs as Predictors for Leadership Perceptions

We assessed participants' ILTs as well as their leadership ratings each with two measures using either general leadership traits (Lord et al., 2001) or transformational leadership behaviour items. We had based the composition of our trait variable on Hansbrough and Schyns (under review). Hansbrough and Schyns found that the dimensions Sensitivity, Intelligence, Dedication, and Dynamism reflect a combination of general leadership traits which can be particularly relevant to the appeal of transformational leadership. Our two ILT measures as well as our two leadership rating measures differ from each other regarding the construct (general vs. transformational leadership) and the type of information (traits vs. behaviour) to rate. In line with Hansbrough and Schyns (under review), the combination of the dimensions Sensitivity, Intelligence, Dedication, and Dynamism significantly predicted ratings for transformational leadership behaviour perceived in the presented leader. Moreover, implicit theories of transformational leadership behaviour also significantly predicted general leadership traits perceived in the presented leader.

Table 11

Study 1 and 2: Results for Each Hypothesis Tested

Hypothesis	Study 1: Fictitious Leader		Study 2: Own Supervisor	
	(a) General Leadership Traits	(b) Transformational Behaviour Ratings	(a) General Leadership Traits	(b) Transformational Behaviour Ratings
H1a: Participants' ratings of general leadership traits expected from a typical leader will predict ratings of (a) general leadership traits and (b) transformational behaviour perceived in a fictitious leader (Study 1) and their own supervisor (Study 2).	Supported	Supported	Supported	Supported
H1b: Participants' ratings of transformational behaviour expected from a typical leader will predict ratings of (a) general leadership traits and (b) transformational behaviour perceived in a fictitious leader (Study 1) and their own supervisor (Study 2).	Supported	Supported	Supported	Supported
H2a: Attachment anxiety will moderate the relationship between participants' ratings of general leadership traits expected from a typical leader and participants' leadership ratings; the higher participants' attachment anxiety, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.	Not supported	Not supported (moderation in opposite direction)	Not supported	Not supported
H2b: Attachment anxiety will moderate the relationship between participants' ratings of transformational behaviour expected from a typical leader and participants' leadership ratings; the higher participants' attachment anxiety, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.	TAL Vignette: Not supported (no moderation) TFL Vignette: Not supported (moderation in opposite direction)	Not supported	Not supported	Not supported

Note. TAL = Transactional Leadership. TFL = Transformational Leadership. N/A = not applicable.

(continued)

Hypothesis	Study 1: Fictitious Leader		Study 2: Own Supervisor	
	(a) General Leadership Traits	(b) Transformational Behaviour Ratings	(a) General Leadership Traits	(b) Transformational Behaviour Ratings
H2c: Attachment avoidance will moderate the relationship between participants' ratings of general leadership traits expected from a typical leader and participants' leadership ratings; the higher participants' attachment avoidance, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.	TAL Vignette: Not supported (no moderation) TFL Vignette: Not supported (moderation in opposite direction)	Not supported	Supported	Supported
H2d: Attachment avoidance will moderate the relationship between participants' ratings of transformational behaviour expected from a typical leader and participants' leadership ratings; the higher participants' attachment avoidance, the stronger the relationships. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.	TAL Vignette: Supported TFL Vignette: Not supported (no moderation)	Not supported	Supported	Supported
H3a: Attachment anxiety will moderate the influence of the leader input stimuli on participants' leadership ratings; the higher participants' attachment anxiety, the weaker the relationship. This effect will hold for ratings regarding both (a) general leadership traits and (b) transformational behaviour.	Not supported	Not supported	N/A	N/A
H3b: Attachment avoidance will moderate the influence of the leader input stimuli on participants' leadership ratings; the higher participants' attachment avoidance, the weaker the relationship. This effect will hold for ratings regarding both, (a) general leadership traits and (b) transformational behaviour.	Not supported	Not supported	N/A	N/A

Note. TAL = Transactional Leadership. TFL = Transformational Leadership. N/A = not applicable.

Overall, both variables for general leadership traits (expected and perceived) as well as the measures for transformational leadership behaviour (expected and perceived) were closely related. This is also in line with the notion that ILTs automatically influence the perception, judgment, and evaluation of leaders (Lord & Maher, 1993; Nye & Forsyth, 1991; Schyns, Meindl, & Croon, 2007; Schyns, Felfe, & Blank, 2007; Shamir, 1992), and that leadership prototypically ratings are correlated with transformational leaders (Bass & Avolio, 1989), suggesting that transformational ratings can be driven by a leadership prototype. This is consistent with the Lord et al. (1984) research suggesting that ILTs reflect a leadership categorisation process, in which judgments are based on the fit of stimuli with a category prototype.

Role of Attachment Anxiety and Avoidance

Our second hypothesis predicted that attachment style would moderate the relationship between participants' implicit leadership theories and their leadership perception. More specifically, we expected effects of ILTs to be stronger the higher participants' attachment anxiety or avoidance (Davidovitz et al., 2007; Hansbrough, 2012), indicating a higher reliance on ILTs when rating a leader.

In sum, results were inconsistent and suggest that almost all participants, regardless of their degree of attachment anxiety, relied on their ILTs and heuristics to guide trait and behaviour ratings rather than a careful encoding of the written vignette and an accurate recall of behaviour. Only in some instances did the strength of the relationship between ILTs and leadership ratings depend on participants' attachment anxiety, but this was opposite to our expectations. More specifically, attachment anxiety moderated the relationship between expected general leadership

traits and transformational behaviour perceived in the presented leader: The *lower* participants' attachment anxiety the more they relied on their ILTs when rating the leader. This could have been due to an underlying positive relationship between attachment anxiety and accuracy motivation in person perception and will be addressed in more detail in the section "The role of motivation in social information processing". Moreover, the same pattern occurred for the relationship between participants' transformational behaviour expected from a typical leader and the perceived general leader traits, but only for the participants who were presented the vignette about a transformational leader. One reason for this could be that in the transformational vignette, as opposed to the transactional vignette, the stimulus is similar to the implicit leadership theories measured (transformational leadership). Due to this information consistency, higher transformational ratings could be either due to the transformational ILTs or the transformational vignette (Neuberg & Fiske, 1987). As such, higher transformational leadership ratings could also reflect higher accuracy (classification level accuracy; Lord, 1985).

Regarding attachment avoidance, results again suggest that almost all participants, regardless of their degree of attachment avoidance, relied on their ILTs and heuristics to guide trait and behaviour ratings rather than a careful encoding of the written vignette and an accurate recall of behaviour. Only in some instances did the strength of the relationship between ILTs and leadership ratings depend on participants' degree of attachment avoidance and results were inconsistent, possibly also depending on the vignette they were presented with. More specifically, when presented to the transformational vignette, participants' attachment avoidance moderated the relationship between expected general leadership traits and general leadership traits perceived in the presented leader. This, however, was again

opposite to our expectations, as the relationship was stronger the lower participants' attachment avoidance. As mentioned above, this could have been due to the similarity between stimulus and ILTs measured (information consistency) which makes it hard to determine whether high ratings reflect reliance on stereotypes or rating accuracy.

Regarding the relationship between transformational behaviour expected from a typical leader and general leadership traits perceived in the presented leader, attachment avoidance moderated this relationship for participants presented to the transactional vignette in the expected direction: The higher participants' attachment avoidance, the more they relied on their ILTs about transformational leadership behaviour when rating the presented leader with regards to general leadership traits. The information inconsistency between measured ILTs and transactional vignette might thus have increased the possibility of detecting the moderating role of attachment avoidance in this combination. As such, the higher people's attachment avoidance the more they might have drawn inference from behaviours (via schemas) to trait ratings (Srull & Wyer, 1989). This might then have resulted in relying on their stereotypes or schemas about transformational leaders when rating the transactional leader because there were not enough choices available to choose from.

Relationship Between Leader Input Stimuli and Leadership Perception

Participants presented with the transformational vignette reported more transformational leadership behaviour compared to those who read the transactional vignette. However, no such difference was found when participants had to rate the general leadership traits of the presented leader. This could be either due to differences in construct (general vs. transformational leadership) or due to

differences regarding the type of information (traits vs. behaviour) participants were given to rate. As such, the general leadership traits might not have captured the differences between the two vignettes because it either did not consist enough *transformational* elements or because a mix of single traits (rather than behaviour statements) was not sensitive enough to capture participants' different perception of the two vignettes.

In our third hypotheses, we expected attachment style to moderate the relationship between the leader input stimuli and participants' leadership perception. More specifically, we expected this relationship to be weaker the higher the attachment anxiety or avoidance, potentially reflecting their reliance on ILTs. However, these hypotheses were not supported. The leader input stimuli (transactional vs. transformational vignette) only predicted participants' perceived transformational behaviour ratings, but not their perceived general leadership traits and neither attachment anxiety nor attachment avoidance moderated this relationship. The missing moderation effects could have been due to the experimental study set-up of asking participants to read a written vignette, hence interfering with how much attention participants could and would (capacity and motivation) have normally paid to the leader. Or, it may just reflect low motivation of subjects to process the written material carefully.

Role of Motivation in Social Information Processing.

We went back into the literature again to find possible post-hoc explanations for our unexpected results, especially regarding attachment anxiety. When building our theoretical argument about when and why people engage in automatic vs. controlled processing and how this might be connected to attachment style, we

strongly focused on variations in *ability* or *capacity* for controlled information processing. However, it is not only the ability or capacity that matters, but also the *motivation* (more specifically, the accuracy motivation) of a person to engage in possible (more effortful) correction processing and trying to see the actual person by engaging in individuation processes (Fiske & Neuberg, 1990; Hansbrough et al., 2015; Macrae & Bodenhausen, 2000).

Moreover, Green-Hennessy and Reis (1998) focused on people's social information processing patterns in relationship to their attachment style. Specifically, they were interested in participants' openness to incorporate new information, their differentiated perception of others as well as their information recall. Results revealed that anxious participants did not differ from secure participants regarding their openness to new information regarding a hypothetical person or their degree of differentiation in person perception. This was in line with the authors' hypotheses who had based these assumptions on observations made by other researchers. Here, anxious children appeared highly attentive or hypervigilant to others which, in turn, might make an influence by new information more likely (Cassidy & Berlin, 1994; Main, Kaplan, & Cassidy, 1985).

In a similar vein, Mikulincer (1997) found that secure and anxious participants gave higher self-reported curiosity ratings and had a more positive attitude towards curiosity than avoidant participants. However, anxious and avoidant participants both had a higher preference for cognitive closure and were less likely to rely on new information when making social judgments. For Mikulincer (1997), this reflects the dilemma anxious people find themselves in: curious and willing to explore on the one hand, but afraid of its implications on relationships on the other

hand. Therefore, it might not be surprising after all that we did not get clear-cut results neither in Study 1 nor later in Study 2.

Overall, we suggest that attachment anxious people might be even more motivated than attachment secure people to gather new and a lot of information about a person. This might stem from their wish to get the attention and love from important others by minimising the distance—not only physically but also emotionally and cognitively (Mikulincer & Shaver, 2007; Shaver & Hazan, 1993) — through the creation of an accurate picture of the other person. Being highly motivated could override their potentially lowered self-control capacities due to their non-constructive and resource demanding emotion regulation strategies. We will now address exploratory aspects of our data analysis.

(Missing) Main Effects of Attachment Anxiety and Avoidance

Despite differences in stimulus materials and samples, our results regarding the influence of attachment avoidance on leadership perception parallel those of Hansbrough (2012). More specifically, attachment avoidance had a significant medium negative correlation with both measures for participants' ILTs and negatively predicted both measures for leadership ratings. This is in line with results obtained by Hansbrough (2012) where attachment avoidance was negatively correlated with perceiving transformational leadership, as well as her assumption that this might be due to the negative models of others attachment avoidant people hold. They are also in line with Berson et al. (2006), where attachment avoidant students viewed an ideal leader as less sociable compared to secure students and with Davidovitz et al. (2007), where soldiers' attachment avoidance was positively correlated with the appraisal of personalised and negatively correlated with the appraisal of socialised leadership qualities in their officers.

Results regarding attachment anxiety being negatively related to Implicit Theories of Transformational Leadership Behaviour were more in line with Berson, Dan, and Yammarino (2006) where anxious attached students viewed their ideal leader as less considerate compared to secure students. Moreover, we could not replicate findings by Hansbrough (2012) of attachment anxiety predicting transformational leadership ratings. Given that our results regarding attachment avoidance replicated those of past research despite the difference in stimulus materials and samples, we suggest that our different results regarding attachment anxiety might indeed be due to an underlying accuracy motivation for attachment anxious participants counteracting the effects of mental capacity. Circumstances in which this effect is weaker or stronger would need to be addressed in future research.

Positive Correlation of Attachment Anxiety and Avoidance

Regarding the relationship between attachment anxiety and avoidance, Mikulincer and Shaver (2007) suggest the following: “The correlation between the two scales is often close to zero, as intended (to fit with Bartholomew’s [1990] conceptual analysis and Ainsworth et al.’s [1978] discriminant analysis), but the two scales seem to be more highly correlated when administered to members of long-term couples” (p. 91). In line with that, the correlation of the two scales is non-significant in Hansbrough’s (2012) study as well. Fraley, Heffernan, Vicary and Brumbaugh (2011), on the other hand, found moderate to high correlations between the two scales, both for relationship-specific scales as well as more global scales. They argue that the two distinct attachment insecurities might indeed use similar strategies to regulate affect and/or behaviour, resulting in a correlation of the two scales. Hence, the correlation between the two scales found in Study 1 might have been due to the relationship-specific measure or a likelihood of participants being

involved in long-term relationships due to their mean age of 34 years (compared to the student sample of Hansbrough, 2012).

Conclusion

In sum, in some cases, the higher participants' attachment anxiety, the less they relied on their leadership stereotypes. This was contrary to our expectations and we suggested that these perceptual biases are down to higher motivation to perceive the leader more accurately. On the other hand, in one case, the higher participants' attachment avoidance, the *more* they relied on their leadership stereotypes when rating the leader. This was in line with our expectations. Our take-home message from our first study is as follows: *When followers have to rate a fictitious leader, it is important to take into account their (typical) ILTs as well as their attachment anxiety and avoidance to get an accurate picture of their leadership ratings.*

STUDY 2

The aim of Study 2 was to test our hypotheses H1 and H2 in the field. For this objective, a second set of participants was asked to rate their own supervisor (rather than a fictitious leader), reflecting a more realistic situation. In addition, real workers have much more potential information to encode regarding their leader either through the use of ILTs or more careful processing. Further, there should be higher motivation to encode information, which we anticipated to be higher with high attachment anxiety subjects, or higher motivation to avoid social interactions, which should characterise high attachment avoidance subjects.

Method

Sample and Procedure

Participants were recruited via Amazon MTurk at the same time as participants for Study 1 in August 2013. The same prerequisites as in Study 1 were applied (full-time employment and having a supervisor) and participants were paid USD 2.00 for taking part in the online survey. From all the participants ($N = 227$), ten were excluded (nine participants taking less than ten minutes for the survey completion, one having zero years of work experience with a supervisor), resulting in a sample of $N = 217$. The mean age was $M = 34.68$ years ($SD = 11.15$) and 56.7 % were male. On average, participants have reported to their own supervisor for 3.60 years ($SD = 3.96$). Again, most of the participants were either American (65.4%) or Indian (26.7%).

Outliers were detected with the same method as in Study 1. In six cases, participants were outliers six times or over (out of twelve) and these were investigated further. In four cases, participants appeared to have had very strong and negative feelings towards their supervisors, resulting in an extreme answer pattern. For the other two cases, nothing suspicious could be detected and therefore we kept all the cases without deleting any outliers.

As in Study 1, data for Study 2 was collected as part of a larger study. Only measures relevant to this study will be presented. First, participants were asked to complete various trait measures, including attachment style and social desirability as well as two ILT measures. After that, instead of presenting participants to a vignette (cf. Study 1), participants were asked to complete various measures rating their own supervisor, followed by demographic questions. There was no missing data.

Primary Measures

Implicit leadership theories. The same measures as in Study 1 were used to assess participants' ILTs. Cronbach's alphas for the six dimensions of the ILT scale were as follows: Sensitivity: $\alpha = .92$ (three items), Intelligence: $\alpha = .84$ (four items), Dedication: $\alpha = .87$ (three items), Dynamism: $\alpha = .85$ (three items), Tyranny: $\alpha = .86$ (six items), and Masculinity: $r = .84$ (two items). Again, a unit weighted composite score variable called *ILT Traits* using the same technique as in Study 1 was created, consisting of the four dimensions Sensitivity, Intelligence, Dedication, and Dynamism ($\alpha = .87$). This variable was used for all subsequent analyses.

To assess the second aspect, *Implicit Theories of Transformational Leadership Behaviour* (i.e., the transformational behaviour expected from a typical leader), we again created a unit weighted composite score from the six dimensions Articulating a Vision (five items, $\alpha = .91$), Providing Appropriate Model (three items, $\alpha = .90$), Fostering Acceptance Goals (four items, $\alpha = .89$), High Performance Expectations (three items, $\alpha = .77$), Individual Support (four items, $\alpha = .64$), and Intellectual Stimulation (four items, $\alpha = .90$) using the same technique as in Study 1.

Leadership perception. As in Study 1, we used two measures representing leadership perception of the own supervisor. For the *Trait Ratings* variable, participants rated how characteristic each of the 21 traits was for their own supervisor. Cronbach's alphas for the six dimensions of the ILT scale were as follows: Sensitivity: $\alpha = .95$ (three items), Intelligence: $\alpha = .93$ (four items), Dedication: $\alpha = .95$ (three items), Dynamism: $\alpha = .92$ (three items), Tyranny: $\alpha = .88$ (six items), and Masculinity: $r = .87$ (two items). Again, a unit weighted composite score variable was created consisting of the four dimensions Sensitivity, Intelligence, Dedication, and Dynamism ($\alpha = .95$) and was used for all subsequent analyses.

To assess the second aspect, *Transformational Behaviour Ratings*, the same scale as in Study 1 (adjusted to “my supervisor”) was used. Again, we created a unit weighted composite score from the six dimensions Articulating a Vision (five items, $\alpha = .96$), Providing Appropriate Model (three items, $\alpha = .95$), Fostering Acceptance Goals (four items, $\alpha = .95$), High Performance Expectations (three items, $\alpha = .90$), Individual Support (four items, $\alpha = .73$), and Intellectual Stimulation (four items, $\alpha = .95$) using the same technique as in Study 1.

Attachment style. The same measures as in Study 1 were used. The scale reliabilities were $\alpha = .93$ and $\alpha = .94$ for attachment anxiety and avoidance, respectively.

Secondary Measure: Covariate

As in Study 1, only social desirability was used as covariate in subsequent analyses. It was assessed the same way as in Study 1 (scale reliability $\alpha = .67$). Moreover, participants were again asked to indicate how long (in years) they have worked for their current organisation and how many hours a week they work.

Results

All analyses were done using IBM® SPSS® Statistics 20. To test for multicollinearity of the predictors, the same procedure as for Study 1 was used. Again, we did not expect multicollinearity to be a potential problem for our subsequent analyses and interpretations.

Descriptive Statistics

Means, standard deviations, alphas, and correlations of the variables are given in Table 12. Similar to Study 1, the correlation between attachment anxiety

and avoidance was $r = .38$ ($p < .01$, two-tailed)⁶. Social desirability had again a significant negative correlation with attachment anxiety ($r = -.36$, $p < .001$, two-tailed) and attachment avoidance ($r = -.28$, $p < .001$, two-tailed) and was used as control variable in subsequent analyses.

The correlation between the two independent variables ILT Traits ($M = 0.00$, $SD = 0.87$) and Implicit Theories of Transformational Leadership Behaviour ($M = 0.00$, $SD = 0.82$) was $r = .75$ ($p < .01$, two-tailed). Again, addressing covariation, we applied the same procedure as in Study 1 and will only point out instances where including the independent variable that was not of main interest as a control variable in the regressions where it would have made a difference.

The correlation between the two dependent variables Trait Ratings ($M = 0.00$, $SD = 0.94$) and Transformational Behaviour Ratings ($M = 0.00$, $SD = 0.86$) was $r = .89$ ($p < .01$, two-tailed). We again tested for a potential mediation of the relationship between ILT Traits and Transformational Behaviour Ratings via Trait Ratings which, as reported in the next section, replicated the mediational effect found in Study 1.

⁶ Controlling for the attachment dimension that was not used as an independent variable did not change the obtained interaction results in the main analyses.

Table 12

Study 2: Means, Standard Deviations, Alphas, and Correlations of the Variables

	1	2	3	4	5	6	7
1. ILT Traits (UWC)	(.87)						
2. ILT Behaviour (UWC)	.75**	(.90)					
3. Trait Ratings (UWC)	.44**	.30**	(.95)				
4. TFL Behaviour Ratings (UWC)	.42**	.43**	.89**	(.93)			
5. Anxiety	.07	-.03	-.02	-.03	(.93)		
6. Avoidance	-.13*	.19**	-.08	-.11	.38**	(.94)	
7. Social Desirability	.16*	.20**	.12	.12	-.36**	-.28**	(.67)
M	0.00	0.00	0.00	0.00	3.50	2.80	4.39
SD	0.87	0.82	0.94	0.86	1.24	1.16	0.85

Note. N = 217. Values given in brackets are reliabilities. UWC = Unit weighted composite variable. ILT = Implicit Leadership Theory. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour. Avoidance = Attachment Avoidance.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Mediating Role of Trait Ratings

We again tested for a potential indirect effect of ILT Traits on TFL Behaviour Ratings through Trait Ratings using Hayes' PROCESS macro for SPSS (Hayes, 2013). The indirect effect was statistically different from zero, indicated by a 95% bootstrap confidence interval not including zero (.268 and .503). This full mediation supports the notion that both, ratings of transformational behaviour and trait judgments, reflect top-down processes. One possible reason for this observation in Study 2 could be that participants did not have enough information available about their supervisor, either due to active avoidance of the supervisor or due to genuinely few occasions to interact with the supervisor. Alternatively, some subjects might

just be forming a global impression, then drawing trait inference, and using these traits to guide transformational behaviour ratings.

Main Data Analysis

H1: ILTs as predictors for leadership ratings. As expected in H1a and shown in Table 12, participants' general leadership traits (*ILT Traits*) expected from a typical leader predicted (a) general leadership traits (*Trait Ratings*; $r = .44, p < .01$, two-tailed) and (b) transformational behaviour (*Transformational Behaviour Ratings*; $r = .42, p < .01$, two-tailed) perceived in their own supervisor.

As expected in H1b and shown in Table 12, participants' transformational behaviour (*Implicit Theories of Transformational Leadership Behaviour*) expected from a typical leader predicted (a) general leadership traits (*Trait Ratings*; $r = .30, p < .01$, two-tailed) and (b) transformational behaviour (*Transformational Behaviour Ratings*; $r = .43, p < .01$, two-tailed) perceived in their own supervisor.

Taken together, this indicates that also in the second sample and as in Hansbrough and Schyns (under review), the variables for general leadership (both ILT and rating of the leader) are closely linked to transformational leadership behaviour (again, both ILT and rating of the leader).

General data analysis strategy. As in Study 1, we tested the remaining hypotheses using hierarchical multiple regression modelling. The order of the variables entered stayed the same, except for condition vignette, which was not included in the regression models as this was not applicable in Study 2. As in Study 1, simplified versions of our regression models are shown, as social desirability was

never a significant predictor and showed relatively stable effects across the various models⁷.

H2a: Attachment Anxiety as a moderator between ILT Traits and leadership ratings. In H2a, we expected that attachment anxiety would moderate the relationships between participants' ILT Traits of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings of their supervisor, i.e., they would be stronger the higher participants' attachment anxiety. As in Study 2, these hypotheses were not supported.

Attachment anxiety did not moderate the relationship between ILT Traits and (a) Trait Ratings (see Table 13). Instead, the main effect of ILT Traits remained significant in the last step ($\beta = .45, p < .001$). That is, the higher participants rated their image of a typical leader the general leadership traits, the higher their trait ratings of their supervisor independent of participants' degree of attachment anxiety.

Regarding the relationship between ILT Traits and (b) Transformational Behaviour Ratings, as shown in Table 14, attachment anxiety did not act as a moderator. Instead, the main effect for the ILT Traits again remained significant in the last step ($\beta = .41, p < .001$). The higher participants rated their image of a typical leader the general leadership traits, the more they perceived their supervisor to show transformational behaviour.

⁷ We have also again analysed the potential moderating role of attachment anxiety/avoidance in the relationship between the single ILT trait dimensions predicting participants' leadership ratings on this trait dimension. Tables and figures are presented in Appendix I. Three observations are noteworthy. There was a significant positive main effect for attachment anxiety in predicting perceived tyranny ($\beta = .12, p < .05$) in addition to the main effect of ILT tyranny ($\beta = .57, p < .001$; see Table 63). Moreover, the higher participants' attachment avoidance, the stronger the relationship between intelligence expected from a typical leader and intelligence perceived in the presented leader (see Table 66 and Figure 24). The higher participants' attachment avoidance, the stronger the relationship between dedication expected from a typical leader and dedication perceived in the presented leader (see Table 67 and Figure 25).

Table 13

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits With Attachment Anxiety as Moderator

Predictors	Trait Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Traits	.44***	.44***	.45***
Anxiety		-.04	-.05
Anxiety × ILT Traits			.08
R^2	.20	.20	.21
Change in R^2	.19***	.00	.01

Note. N = 217. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 14

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits With Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Traits	.41***	.42***	.41***
Anxiety		-.05	-.05
Anxiety × ILT Traits			.02
R^2	.18	.18	.18
Change in R^2	.16***	.00	.00

Note. N = 217. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

H2b: Attachment Anxiety as moderator between Implicit Theories of Transformational Leadership Behaviour and leadership ratings. In H2b, we expected that attachment anxiety would moderate the relationships between participants' Implicit Theories of Transformational Leadership Behaviour of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings of their supervisor, that is, they would be stronger the higher participants' attachment anxiety. These hypotheses were not supported.

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (a) Trait Ratings, as shown in Table 15, there was a main effect for Implicit Theories of Transformational Leadership Behaviour up until the last step ($\beta = .30, p < .001$). However, when including ILT Traits as a control variable to account for potential covariation between the two independent variables of interest, the main effect for Implicit Theories of Transformational Leadership Behaviour disappeared and a main effect for ILT Traits emerged instead ($\beta = .52, p < .001$, see Appendix H, Table 53), indicating that ILT Traits play a more important role in predicting Trait Ratings than Implicit Theories of Transformational Leadership Behaviour.

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (b) Transformational Behaviour Ratings, there was again a main effect for Implicit Theories of Transformational Leadership Behaviour up until the last step ($\beta = .43, p < .001$, see Table 16) which persisted even when ILT Traits was used as a control variable. Taken together, these results indicate that participants' expectations about what transformational behaviour a typical leader shows positively predicted the general leadership traits and the transformational behaviour they perceived in their supervisor.

Table 15

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Anxiety as Moderator

Predictors	Trait Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Behaviour	.29***	.29***	.30***
Anxiety		.01	.01
Anxiety × ILT Behaviour			.05
R^2	.10	.10	.10
Change in R^2	.08***	.00	.00

Note. N = 217. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Table 16

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Behaviour	.42***	.42***	.43***
Anxiety		-.01	-.01
Anxiety × ILT Behaviour			.03
R^2	.19	.19	.19
Change in R^2	.17***	.00	.00

Note. N = 217. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

H2c: Attachment Avoidance as a moderator between ILT Traits and leadership ratings. In H2c, we expected that attachment avoidance would moderate the relationships between participants' ILT Traits of a typical leader predict their (a) Trait Ratings and (b) Transformational Behaviour Ratings of their supervisor, that is, they would be stronger the higher participants' attachment avoidance. These hypotheses were supported.

Regarding the relationship between ILT Traits and (a) Trait Ratings, the main effect of ILT Traits remained significant in the last step ($\beta = .42, p < .001$, see Table 17). The higher participants rated their image of a typical leader on the dimensions sensitivity, intelligence, dedication, and dynamism, the higher they rate their own supervisor on these dimensions. Moreover, and in line with our prediction, attachment avoidance significantly moderated the relationship between ILT Traits and (a) Trait Ratings ($\beta = .19, p < .01, \Delta R^2 = .04$, see Table 17). More specifically, subsequent simple slope analyses showed that with higher levels of attachment avoidance (1 *SD* above the mean), ILT Traits was strongly positively associated with Trait Ratings, $b = 0.65, t = 7.23, p < .001$, whereas with lower levels of attachment avoidance (1 *SD* below the mean), ILT Traits showed a weaker positive association with Trait Ratings, $b = 0.27, t = 2.96, p < .01$ (see Figure 7). That is, the higher participants' attachment avoidance, the more they relied on general leadership traits expected from a typical leader when rating their own supervisor on general leadership traits.

Table 17

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits With Attachment Avoidance as Moderator

Predictors	Trait Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Traits	.44***	.43***	.42***
Avoidance		-.01	-.02
Avoidance × ILT Traits			.19**
R^2	.20	.20	.24
Change in R^2	.19***	.00	.04**

Note. N = 217. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

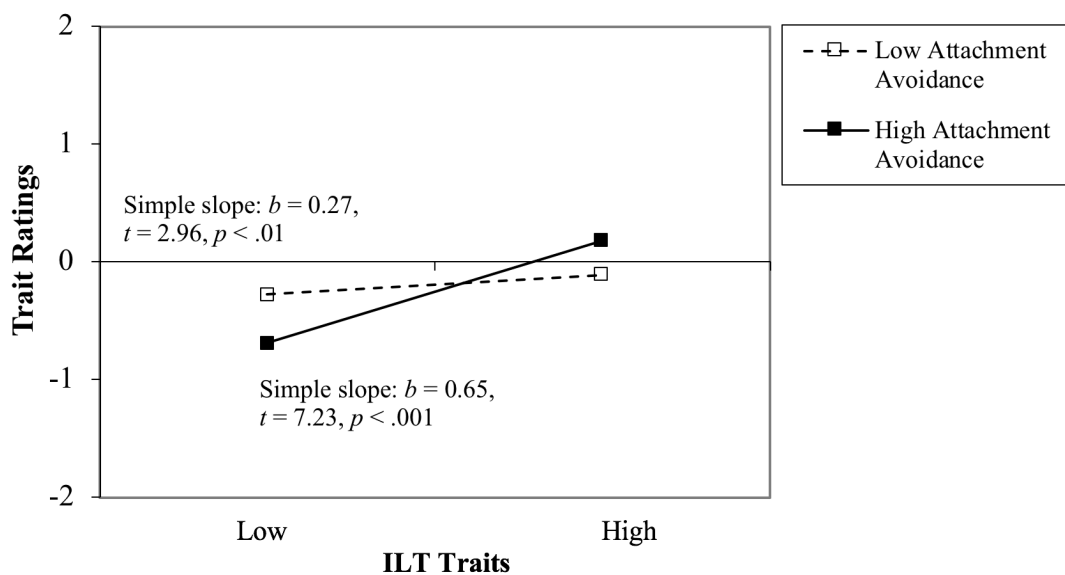


Figure 7. Study 2: Moderating role of attachment avoidance on the relationship between ILT Traits and Trait Ratings (Model 4). N = 217. ILT = Implicit Leadership Theory. Moderation is significant at $p < .01$.

Regarding the relationship between ILT Traits and (b) Transformational Behaviour Ratings, the main effect of ILT Traits remained significant in the last step ($\beta = .40, p < .001$, see Table 18). The higher participants rated their image of a typical leader on the dimensions sensitivity, intelligence, dedication, and dynamism, the higher they rate their own supervisor with regards to transformational leadership behaviour. Moreover, and in line with our prediction, attachment avoidance significantly moderated the relationship between ILT Traits and (b) Transformational Behaviour Ratings ($\beta = .14, p < .05, \Delta R^2 = .02$). More specifically, subsequent simple slope analyses showed that with higher levels of attachment avoidance (1 *SD* above the mean), ILT Traits was strongly positively associated with Transformational Behaviour Ratings, $b = 0.52, t = 6.34, p < .001$, whereas with lower levels of attachment avoidance (1 *SD* below the mean), ILT Traits showed a weaker positive association with Transformational Behaviour Ratings, $b = 0.27, t = 3.28, p < .01$ (see Figure 8). That is, the higher participants' attachment avoidance, the more they relied on general leadership traits expected from a typical leader when rating their own supervisor on transformational leadership behaviour.

Table 18

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits With Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Traits	.41***	.41***	.40***
Avoidance		-.04	-.05
Avoidance × ILT Traits			.14*
R^2	.18	.18	.20
Change in R^2	.16***	.00	.02*

Note. N = 217. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

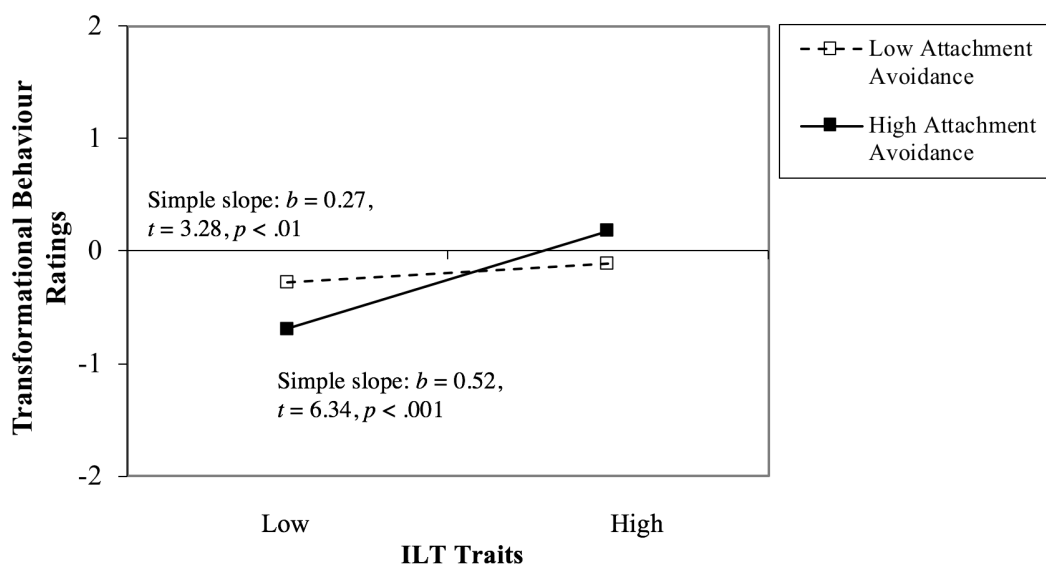


Figure 8. Study 2: Moderating role of attachment avoidance on the relationship between ILT Traits and Transformational Behaviour Ratings (Model 4). N = 217. ILT = Implicit Leadership Theory.

Moderation is significant at $p < .05$.

H2d: Attachment Avoidance as moderator between Implicit Theories of Transformational Leadership Behaviour and leadership ratings. In H2d, we expected that attachment avoidance would moderate the relationships between participants' Implicit Theories of Transformational Leadership Behaviour of a typical leader and their (a) Trait Ratings and (b) Transformational Behaviour Ratings of their supervisor, i.e., they would be stronger the higher participants' attachment avoidance. These hypotheses were supported.

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (a) Trait Ratings, the main effect of ILT Behaviour remained significant in the last step ($\beta = .28, p < .001$, see Table 19). The higher participants' expectations about what transformational behaviour a typical leader shows positively the higher they rated their own supervisor on the general leadership traits. Moreover, and in line with our prediction, attachment avoidance significantly moderated the relationship between ILT Behaviour and (a) Trait Ratings ($\beta = .20, p < .01, \Delta R^2 = .04$, see Table 19). More specifically, subsequent simple slope analyses showed that with higher levels of attachment avoidance (1 *SD* above the mean), ILT Behaviour was strongly positively associated with Trait Ratings, $b = 0.53, t = 5.00, p < .001$, whereas with lower levels of attachment avoidance (1 *SD* below the mean), ILT Behaviour showed no significant relationship with Trait Ratings, $b = 0.10, t = 0.95, ns$ (see Figure 9). That is, the higher participants' attachment avoidance, the more they relied on their implicit theories of transformational leadership behaviour expected from a typical leader when rating their own supervisor on general leadership traits.

Table 19

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Avoidance as Moderator

Predictors	Trait Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Behaviour	.29***	.29***	.28***
Avoidance		-.01	-.03
Avoidance × ILT Behaviour			.20**
R^2	.10	.10	.14
Change in R^2	.08***	.00	.04**

Note. N = 217. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

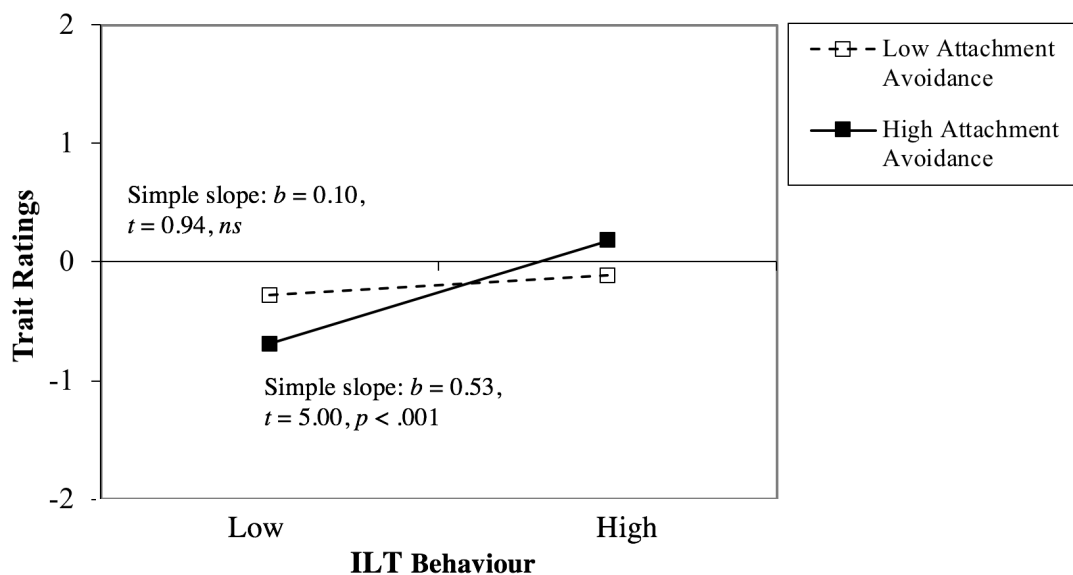


Figure 9. Study 2: Moderating role of attachment avoidance on the relationship between Implicit Theories about Transformational behaviour and Trait Ratings (Model 4). N = 217. ILT = Implicit Leadership Theory.

Moderation is significant at $p < .01$.

When including ILT Traits as a control variable, the Attachment Avoidance \times ILT Behaviour interaction remained significant ($\beta = .21, p < .001$, see Appendix H, Table 57) but the main effect for Implicit Theories of Transformational Leadership Behaviour disappeared. Instead, ILT Traits was now a significant predictor of Trait Ratings ($\beta = .50, p < .001$, Model 5).

Regarding the relationship between Implicit Theories of Transformational Leadership Behaviour and (b) Transformational Behaviour Ratings, the main effect for Implicit Theories of Transformational Leadership Behaviour remained significant in Model 4 ($\beta = .41, p < .001$, see Table 20), again indicating that the more transformational participants expected a typical leaders' behaviour to be, the more transformational they rated their supervisors' behaviour. Moreover, and in line with our prediction, attachment avoidance significantly moderated this relationship ($\beta = .15, p < .05$, see Table 20). More specifically, subsequent simple slope analyses showed that with higher levels of attachment avoidance (1 *SD* above the mean), ILT Behaviour was strongly positively associated with Transformational Behaviour Ratings, $b = 0.58, t = 6.46, p < .001$, whereas with lower levels of attachment avoidance (1 *SD* below the mean), ILT Behaviour showed a weaker positive association with Transformational Behaviour Ratings, $b = 0.28, t = 3.18, p < .01$ (see Figure 10). That is, the higher participants' attachment avoidance, the more they relied on their implicit theories of transformational leadership behaviour expected from a typical leader when rating their own supervisor on transformational leadership behaviour.

Table 20

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings		
	Beta		
	Model 2	Model 3	Model 4
ILT Behaviour	.42***	.42***	.41***
Avoidance		-.02	-.03
Avoidance × ILT Behaviour			.15*
R^2	.19	.19	.21
Change in R^2	.17***	.00	.02*

Note. N = 217. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

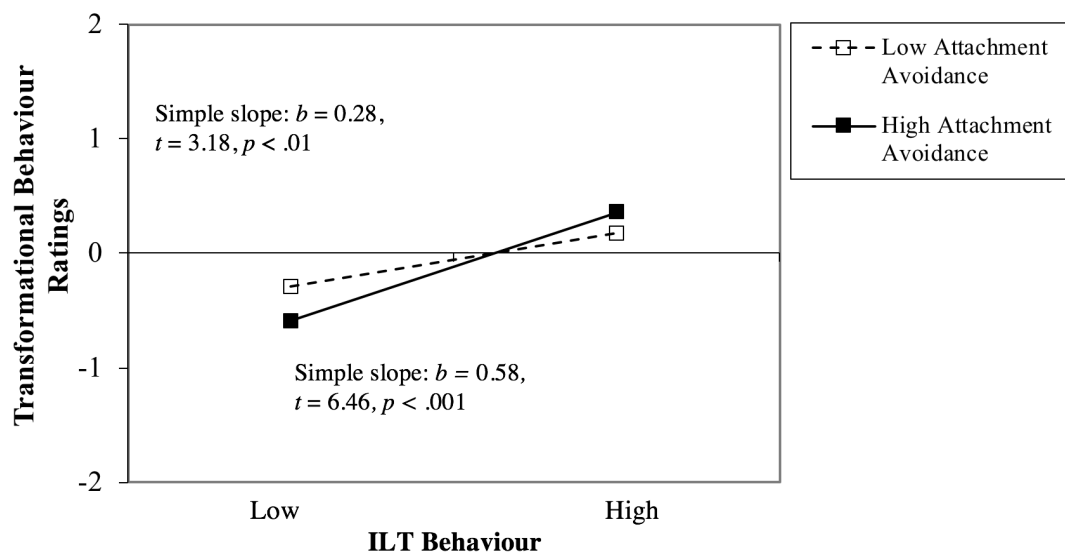


Figure 10. Study 2: Moderating role of attachment avoidance on the relationship between Implicit Theories about Transformational behaviour and Transformational Behaviour Ratings (Model 4). N = 217. ILT = Implicit Leadership Theory.

Moderation is significant at $p < .05$.

In sum, there was strong support for the moderating effect of attachment avoidance on use of ILTs in rating leadership. All four predicted relations were and remained significant, even when controlling for the second IV of interest. The higher participants' attachment avoidance, the more they relied on their ILTs when rating their own supervisor.

Further Observations

As in Study 1, there was a strong effect of ILTs on supervisor ratings. As such, the higher participants' ratings on general and transformational ILTs, the higher leadership ratings for their supervisor.

Mediating role of ILTs. We again considered the potential mediating role of ILTs in the relationship between attachment style and leadership perception. Although neither attachment anxiety nor attachment avoidance predicted leadership perception in the first place, implicit theories of transformational behaviour acted as a mediator between attachment avoidance and leadership perceptions (both indirect effects were statistically different from zero as indicated by the 95% bootstrap confidence intervals not including zero). As in Study 1, because we have included both, attachment style and ILTs, in the regressions when predicting leadership perception, we could focus on our hypothesised moderating effects of attachment style for our analyses.

Discussion

Overview

Similar to Study 1, the aim of Study 2 was to test our model that attachment anxiety or avoidance moderates the relationship between ILTs and leadership perception. This time, however, we asked participants to rate their own supervisor

rather than a fictitious leader (cf. Study 1), creating a more realistic situation for the participants where the leadership encoding demands and the motivation to manage relationships were both higher. Table 11 summarises whether or not the results support the hypotheses.

ILTs as Predictors for Leadership Perceptions

To summarise, regarding our first hypotheses, we replicated the findings from Study 1 which are also in line with results by Hansbrough and Schyns (under review): The variable measuring general leadership traits significantly predicted participants' ratings for transformational leadership behaviour of participants' supervisors. Moreover, implicit theories of transformational leadership behaviour also significantly predicted general leadership traits perceived in the own supervisor. Overall, both variables for general leadership traits (expected and perceived) as well as the measures for transformational leadership behaviour (expected and perceived) were closely related.

Role of Attachment Anxiety and Avoidance

For our second hypotheses, we tested whether attachment anxiety or attachment avoidance moderated the relationship between participants' ILTs for a typical leader and their leadership perception of their own supervisor. In Study 2, our results were more consistent than in Study 1. More specifically, attachment avoidance moderated the relationship between ILTs and leadership ratings: The higher participants attachment avoidance, the more they relied on the general leadership traits and transformational behaviour expected from a typical leader when rating their own supervisor.

Regarding attachment anxiety, we did not find any moderation effects. This could again be due to the previously mentioned role of motivation. As such, and reflecting their dilemma pointed out by Mikulincer (1997), the curiosity and hence motivation of people high in attachment anxiety might only be outstandingly high in a hypothetical context or when it comes to first impressions. This might also explain why in Study 1 the higher participants' attachment anxiety, the less they relied on their ILTs when making leadership ratings in some instances. When it comes to rating a person one is already more familiar with, employees might decrease their curiosity and motivation as they are afraid of the implications this might have on relationships (Mikulincer, 1997). In this situation, their heightened motivation and their lack of self-control capacity to overcome automatic schema-driven information processing might cancel each other out, which could explain why there was no moderating role of attachment anxiety in Study 2.

In contrast to that, participants high in attachment avoidance might have low motivation to accurately assess leadership as they aim to avoid closeness by maximising cognitive, emotional, or physical distance (Cassidy & Kobak, 1988). Alternatively, they might simply have low motivation to engage in social interactions in the first place. This would tie in with our findings regarding attachment avoidance. In Study 1, participants were not able to avoid the leader (unless they chose not to read the vignette properly) and results were inconsistent. In Study 2, participants high in attachment avoidance might have generally avoided their supervisor, therefore potentially leading to fewer social interactions and thus leading to less information acquired about the supervisor. This might have increased the likelihood of their ratings being based on stereotypes. We therefore assume that a heightened reliance on stereotypes in Study 2 not only occurred because of limited

cognitive resources but also because of a lack of information about the supervisor in the first place.

Related to that explanation, a higher degree in attachment avoidance might also result in a less clear affective relationship (due to avoidance) which could have been used to make ratings about the supervisor. Bono and Ilies (2006), for example, stress the importance of leaders' emotional expression on the formation of followers' perceptions of leader effectiveness, attraction to the leader, and followers' emotional lives and mood. Linking this to our results, if participants' high in attachment avoidance avoid their supervisors, they might also be less exposed to their emotional expressions and therefore might also be less likely to be affected by potential mood spill-overs by charismatic leaders.

Or, even if participants high in attachment avoidance were exposed to their supervisor's emotional expressions, they might have chosen to actively prevent the conscious experience of it (Cassidy, 1994). In sum, the question arises whether the reliance on ILTs are due to (1) limited cognitive resources, (2) lack of information due to actual avoidance of the supervisor, (3) lack affective relationships that can be used to inform ratings, or (4) a combination of those three factors. These explanations should be addressed in future studies, for example, by assessing or controlling for actual and perceived distance from the supervisor.

Missing Main Effects of Attachment Anxiety and Avoidance

Similar to Study 1, attachment anxiety alone did not predict leadership ratings and it was not correlated with either of our two measures for leadership ILTs or either of the two measures of leadership ratings. Again, these results are inconsistent with Hansbrough's (2012) results who found that attachment anxiety

predicted transformational leadership ratings. The interplay of accuracy motivation and cognitive capacity might explain these missing correlations and future studies need to address this observation systematically.

Results regarding the main effects for attachment avoidance were weak and attachment avoidance only correlated (negatively) with our two ILT measures. The non-existing correlations between attachment avoidance and leadership perception is contrary to what we would have expected based on Davidovitz et al. (2007), where soldiers' attachment avoidance was positively correlated with the appraisal of personalised and negatively correlated with the appraisal of socialised leadership qualities in their officers. It is also inconsistent with Hansbrough (2012) where attachment avoidance was negatively correlated with transformational leadership perception of a non-transformational leader. In both papers, the negative mental representations of others by people high in attachment avoidance was given as a possible reason for their findings, thus suggesting a mediation effect. Unfortunately, neither of the researchers had assessed participants' ILTs. In Study 2, however, although attachment avoidance was negatively correlated with ILTs about a typical leader, it was not correlated with leadership perceptions about the supervisor. Taken together we think that these results stress the importance of the interaction of participants' ILTs and attachment avoidance for understanding participants' leadership ratings.

Conclusion

In sum, when rating their own supervisor, the interaction of participants' there was no interplay between attachment anxiety and ILTs in predicting leadership ratings. Moreover, and contrary to Hansbrough's (2012) results, attachment anxiety

again did not correlate with our two measures of leadership ratings and this time it also did not correlate with our ILT measures.

Attachment avoidance, on the other hand, interacted with participants' ILTs about a typical leader in predicting leadership ratings: The higher participants' attachment avoidance the *more* they relied on their leadership stereotypes when rating their own supervisor. Moreover, attachment avoidance had a significant small negative correlation with both measures for ILTs (cf., Berson et al., 2006) but no significant correlation with any of the two measures for transformational leadership ratings, which is contrary to what we would have expected from previous studies (cf., Davidovitz et al., 2007; Hansbrough, 2012). There are no obvious reasons for this difference, and it may just reflect sampling errors. Together with results from Study 1, we conclude that attachment avoidance not only influences participants' ILTs but also the degree to which participants rely on them when rating their supervisor. Our take-home message from our second study is as follows: *When followers have to rate their own supervisor, participants' ILTs as well as their attachment avoidance should be taken into account to get an accurate understanding of their leadership ratings.*

Concluding Remarks

We would like to conclude this discussion by going back to our conceptual model presented in Chapter 1 on page 9 (Figure 1). Although we did not explicitly test for the role of state self-control in Study 1 and 2, our hypotheses for those studies were based on the assumption that an insecure attachment style is linked to non-constructive emotion regulation strategies which in turn deplete self-control resources. Based on this, we had expected that people high in either attachment

anxiety or avoidance have fewer self-control resources available needed for controlled social information processing needed for non-stereotypical perception. Therefore, we had expected that the higher participants score on attachment anxiety or avoidance, the more they would rely on their stereotypes when rating a fictitious leader or their own supervisor.

However, the concept of self-control and the effects of ego-depletion have been questioned in the literature recently (Carter et al., 2015; Inzlicht & Schmeichel, 2012) and replications of previous studies found a zero-effect for ego-depletion (Lurquin et al., 2016; Sripada, Kessler, & Jonides, 2016). Sripada et al. (2016) also mention the role of motivation and sustained attention as potential reasons as to why their previous effects could not be replicated by the *Perspectives on Psychological Science Replication Initiative*. Lurquin et al. (2016) also point out that often, there is no sufficient theoretical justification of why specific tasks (but not others) should require self-control and call for a better conceptual definition of self-control altogether.

These papers motivated us to go back to the drawing board and reconsider our conceptual model. Study 3 presents and examines our expanded conceptual model in more detail and also tries to capture the underlying processes that could explain the perceptual biases found in Study 1 and 2.

Chapter 3: Study 3 - Investigating the Mediating Role of Attentional Capacity and Accuracy Motivation in the Relationship Between Attachment Anxiety and Avoidance on Predicting Leadership Ratings and Memory Sensitivity

As Studies 1 and 2, this study focuses on the relationship between attachment style and leadership ratings. In Study 2, the higher participants' attachment avoidance, the more they relied on their ILTs when rating the leader, and we found a similar tendency in Study 1. A high degree of attachment anxiety, on the other hand, indicated more reliance on ILTs in one instance, and less reliance on ILTs in another instance in Study 1. As a possible explanation for these results pertaining to attachment anxiety, we suggested that the effect of accuracy motivation might have counteracted the effects of depleted cognitive resources. Study 3 examines this explanation. It again focuses on transformational leadership (TFL) ratings and aims to improve and expand our model by concentrating on the underlying processes between attachment style and TFL ratings. More specifically, we investigated the mediating role of attentional capacity (instead of self-control as proposed in Study 1 and 2) and accuracy motivation (see Figure 11) using a *Blockage Manipulation-of-Mediation Design* (Pirlott & MacKinnon, 2016).

In addition to that, we included *Memory Sensitivity* as our second dependent variable to test for participants' recognition accuracy (see Figure 11). As in Study 1 and 2, we were again interested in the degree to which attachment anxiety or avoidance influences the *use* of ILTs when rating a leader, that is, how much participants' ILTs influence their ratings. This time, however, we improved our approach by keeping both main information sources for rating a leader (i.e., participants' ILTs and the leader stimulus) constant, therefore making the interpretation of participants' TFL ratings and memory sensitivity scores clearer.

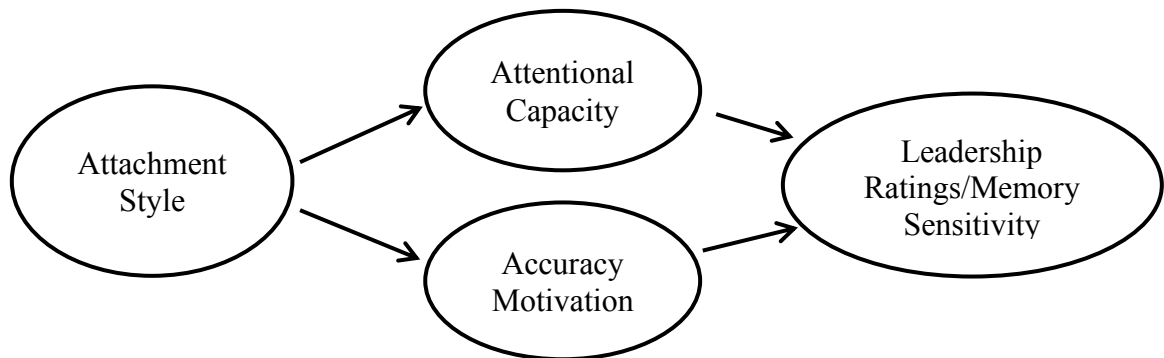


Figure 11. The proposed influence of attachment style on leadership ratings and memory sensitivity via attentional capacity and accuracy motivation.

The role of attentional capacity and accuracy motivation has been emphasised in the social cognition literature previously as playing an important role in stereotyping or individuating (e.g., Fiske & Neuberg, 1990). However, measuring these two aspects can be difficult or undesirable at times (e.g., interference of measurement, cf. Jacoby & Sassenberg, 2011). Our study (using a *blockage manipulation-of-mediation design*) can give other researchers new ideas on how to approach these two factors in their research about stereotype application in a systematic manner if the mediating variable cannot or ideally should not be measured. In the following, we will first explain how people generally form impressions before covering other aspects of our model.

Influence of Information Processing Tendencies on Leadership Ratings and Memory Sensitivity

When forming impressions about a person, there are two sources of information people rely on: (1) social categories and (2) actual features or behaviour of the person to be rated. Social categories help people to organise their expectations about concepts (such as people and social groups) by including the concept's

attributes and the relations among them (Fiske & Taylor, 2013). Categorical person perception relies on one's prior knowledge which is why these processes are referred to as top-down, conceptually driven, or theory-driven. People's sensitivity to the specific qualities of another individual, in contrast, is based on bottom-up, stimulus driven processes, or data driven processes (Abelson, 1981; Bobrow & Norman, 1975; Rumelhart & Ortony, 1982).

Moreover, stereotyping (i.e., schema-driven processes) is more likely to take place when cognitive resources are depleted by cognitive load as long as the behaviour of the target person is more or less consistent with the overall stereotypical impression (Sherman & Frost, 2000). Seeing or experiencing a few attributes of a category can activate this category and induce people to recall or recognize other attributes that belong to that category but that were not actually present. This effect implies that category-based thinking can create false memories because people might remember information that is consistent with the activated category, but that did not actually occur (Fiske & Taylor, 2013). Regarding individuating processes (i.e., data-driven processes), Neuberg and Fiske (1987) state that those processes either take place in case of non-categorisable attribute information or if the information is inconsistent with an available category label. Moreover, the information must be relevant to the category but also relevant to the judgment being made (see also Fiske & Neuberg, 1990).

Applied to the leadership context, when rating a leader, people can base their judgments either on the ILTs they hold about leaders (social category or schema) or the actual behaviour and features a leader shows (Lord, 1985). Foti and Hauenstein (1993) suggest that inferring mediating cognitive processes from judgment data (such as leadership ratings) alone is not recommended in order to understand the

rating process fully. Therefore, we also focused on participants' memory sensitivity, that is, their sensitivity to accurately detect behaviour that was present from behaviour that was not present. As such, participants who engage in top-down, schema-driven information processing (i.e., by relying on their ILTs) might be less capable and sensitive to differentiate between actual memories about the behaviour of the leader and conceptual "noise" created by their ILTs.

Influence of Attentional Capacity and Accuracy Motivation on Information Processing Tendencies

In the introduction of Study 1 and 2, we explained how stereotyping is a way of categorising people and that applying stereotypes requires fewer cognitive resources than controlled processes (Fiske & Neuberg, 1990). Together with research on the effect of cognitive load on stereotype usage, we had equated cognitive resources or capacity with self-control resources and based our assumptions on the self-control literature. However, several researchers questioned the widely tested ego-depletion effect (Carter et al., 2015; Inzlicht & Schmeichel, 2012; Lurquin et al., 2016; Sripatha et al., 2016) and it was suggested that the role of attention and motivation should be taken into consideration instead (Inzlicht & Schmeichel, 2012). Moreover, dual-process theories of impression formation also suggest that both, ability/capacity and motivation are relevant to an individuating process that often occurs after the initial category based impression was formed (Fiske & Neuberg, 1990; Hansbrough et al., 2015; Macrae & Bodenhausen, 2000).

Attentional capacity and information processing tendencies. Perceiver's attentional capacity is also referred to as cognitive resources (similar to self-control) and participant's attentional capacity was often manipulated by imposing a cognitive load or depleting this cognitive resource (Sherman, Macrae, & Bodenhausen, 2000).

However, findings by Macrae, Bodenhausen, Schloerscheidt, and Milne (1999) suggest that it is not the attentional depletion per se but the executive dysfunction (i.e., having to maintain and update a stimulus list whilst attending to a secondary task, such as under dual-task conditions; Engle & Kane, 2003) that impairs perceivers' ability to engage in inconsistency resolution and individuation in person perception (i.e. data-driven processes). Two of the four stages of the stereotyping process (categorisation, stereotype activation, stereotype application, and individuation and/or stereotype inhibition/correction; Sherman et al., 2000) are of main interest for the present study, namely *stereotype application* (to construe the target person) and *individuation and/or stereotype inhibition/correction*. In both stages, cognitive load generally tends to increase the influence of stereotypes on social judgments (Sherman et al., 2000).

Accuracy motivation and information processing tendencies. Neuberg and Fiske (1987) suggested that information inconsistency plus accuracy-driven (or motivated) attention results in individuating processes in impression formation. In their third experiment, they manipulated participants' attentional goal of forming an accurate impression of another person. Participants in the high impression accuracy condition engaged in more individuating processes compared to participants who did not get an accuracy goal instruction. Overall, the authors concluded that the combination of sufficient attentional resources plus the goal to form an accurate impression led to individuating processes. These results are in line with the notion that high accuracy motivation can undermine the use of stereotypes in judgment (Fiske, 1998; Macrae & Bodenhausen, 2000).

In conclusion, in order to investigate the underlying processes in the relationship between attachment style and leadership ratings/memory sensitivity, we

decided to replace the concept of self-control with attentional capacity and to also include accuracy motivation⁸ in our model (see Figure 11) as both capacity and motivation are needed for individuals to engage in individuating processes when perceiving others. We will only briefly discuss the path between attachment style and attentional capacity as the initial idea was presented in length in the introduction for Study 1 and 2. This will be followed by a brief recap of the link between attachment style and accuracy motivation, as a more detailed explanation has already been given in the General Discussion of Study 1 and 2.

Influence of Attachment Style on Attentional Capacity and Accuracy Motivation

We argue that both attachment anxiety and avoidance are linked to non-constructive ways of regulating emotions. We assume that this lowers their attentional capacity necessary to engage in data-driven social information processing. Turning to accuracy motivation, results by Green-Hennessy and Reis (1998) suggest that people high in attachment avoidance, but not those high in anxious attachment style, are less open to new information regarding a hypothetical person than secure participants. Consequently, they showed a less differentiated perception of him/her than secure people. Moreover, Mikulincer (1997) found that secure and anxious participants gave higher self-reported curiosity ratings and had a more positive attitude towards curiosity than avoidant participants. Taken together, these results indicate that people high in attachment anxiety might be more accuracy motivated than attachment avoidant people, and even more than secure people, as

⁸ We use the term accuracy motivation to describe the degree to which people are motivated to get an accurate picture of the other person, thus engaging in individuating (or data-driven) processes rather than stereotyping (or schema-driven) processes.

some results from our first study would also suggest, where the higher participants' attachment anxiety, the less they relied on the general leadership traits expected from a typical leader when rating the perceived transformational behaviour of the leader.

Hypotheses Development

For people high in attachment anxiety, we suggest that their tendency to engage in schema-driven information processing can either be increased due to their lowered attentional capacity or reduced due to their heightened accuracy motivation (compared to people high in attachment avoidance; Green-Hennessy & Reis, 1998; Mikulincer, 1997). For example, Hansbrough (2012) suggested that participants high in attachment anxiety gave higher transformational leadership rating for a non-transformational political leader because of their (assumed) transformational ILTs about an ideal leader. This would resemble a higher schema-driven tendency. Based on this result, we would expect a negative relationship between attachment anxiety and memory sensitivity, mediated by attentional capacity: The higher people's attachment anxiety, the lower their attentional capacity, the higher their tendency to engage in schema-driven information processing, and the lower their sensitivity to differentiate between behaviour that was present from behaviour that was not present.

Davidovitz et al. (2007), on the other hand, did not find any perception biases (in terms of personalised vs. socialised leadership or leading in both task-focused and emotion-focused situations) in anxiously attached followers. One reason for variability in ratings could be accuracy motivation. This variability could have been due to the different study designs, e.g., forming first impressions (Hansbrough, 2012) vs. rating an actual supervisor (Davidovitz et al., 2007). Variability in accuracy motivation could then have led to differences in schema-driven information

processing tendencies. Moreover, and as outlined in the General Discussion of Study 1 and 2, some research suggests that attachment anxiety is positively related to being highly attentive or hypervigilant to others (Cassidy & Berlin, 1994; Main, Kaplan, & Cassidy, 1985).

In line with that explanation, attachment anxiety was associated with relying less on ILTs in one instance in our first Study. Overall, we argue that attachment anxiety is negatively correlated with attentional capacity but that this influence on impression formation can be counteracted by the strong positive relationship between attachment anxiety and accuracy motivation. We propose that this leads to a more accurate perception the higher participants' attachment anxiety. We therefore expected the following (for detailed directional predictions, see Figure 12, top):

H1: The positive relationship between attachment anxiety and memory sensitivity will be jointly mediated by attentional capacity and accuracy motivation, with the effects of the two mediators working in opposite directions.

Individuals high in attachment avoidance, in contrast, do not seem to be highly curious or accuracy motivated when it comes to impression formation (Green-Hennessy & Reis 1998). They do, however, similar to people high in attachment anxiety, have a higher preference for cognitive closure and are less likely to rely on new information when making social judgments (Mikulincer, 1997). Moreover, they described themselves as less curious compared to anxious and secure people and preferred information search over social interaction. This might also mean that people high in attachment avoidance are not less accuracy motivated *per se* but only when it comes to *forming impressions about others or social interactions in general*. This should also show in participants' memory sensitivity score. Taken together,

and in line with results from Study 1, we propose the following (see Figure 12, bottom):

H2: The negative relationship between attachment avoidance and memory sensitivity will be jointly mediated by attentional capacity and accuracy motivation, with the effects of the two mediators working in the same direction.

Regarding leadership ratings and focusing again on transformational leadership (cf. Study 1 and 2), we will select participants based on their high TFL ILTs and present them a non-transformational leader (for a more detailed explanation, see the method section). As such, we interpret higher TFL ratings as an indicator for schema-driven information processing. Similar to our hypothesis for memory sensitivity (but in the opposite direction), we expected the following (for detailed directional predictions, see Figure 13):

H3: The negative relationship between attachment anxiety and TFL ratings will be jointly mediated by attentional capacity and accuracy motivation, with the effects of the two mediators working in opposite directions.

H4: The positive relationship between attachment avoidance and TFL ratings will be jointly mediated by attentional capacity and accuracy motivation, with the effects of the two mediators working in the same direction.

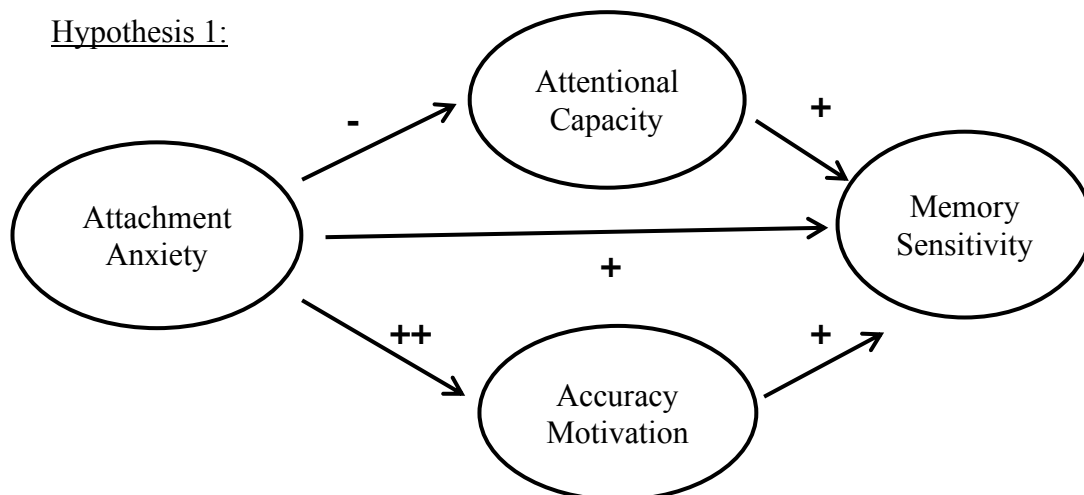
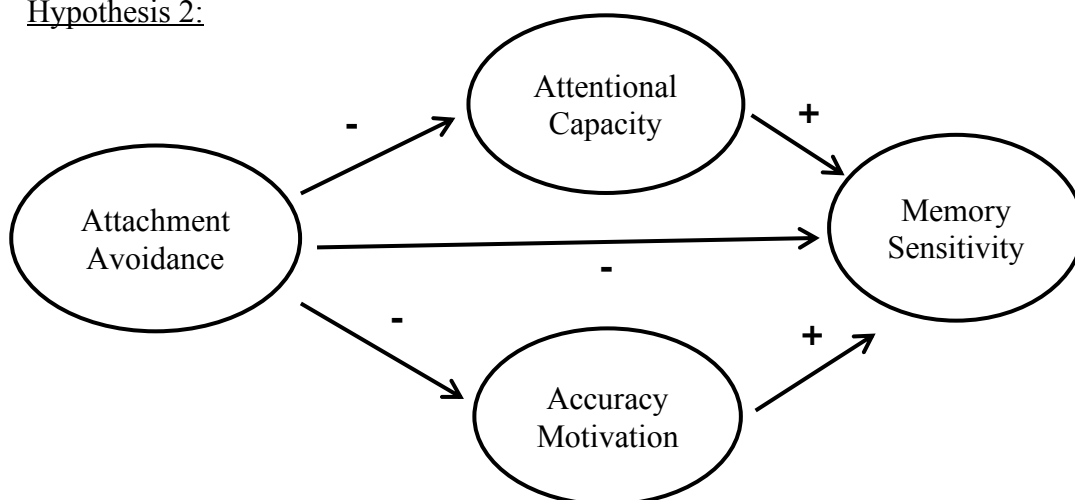
Hypothesis 1:Hypothesis 2:

Figure 12. The proposed relationships between attachment anxiety (top) or attachment avoidance (bottom) and memory sensitivity mediated by attentional capacity and accuracy motivation.

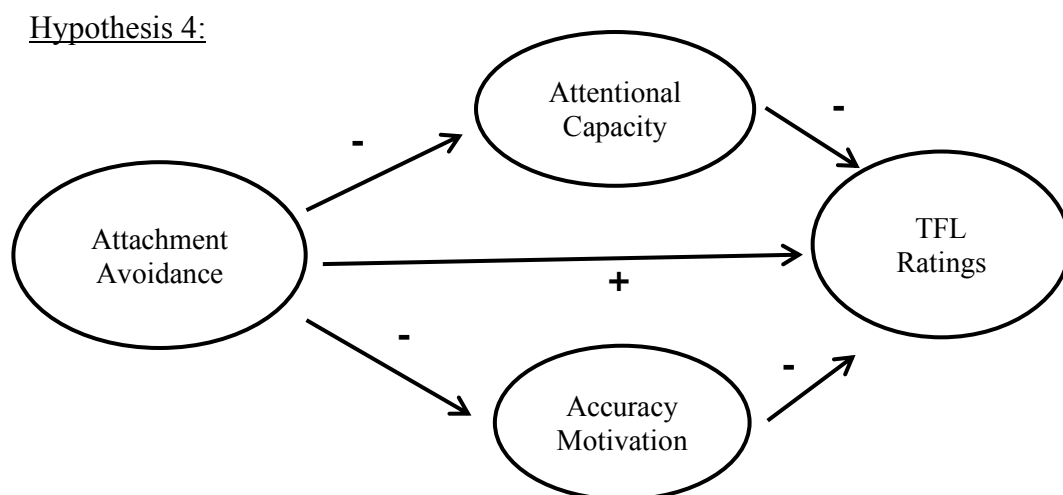
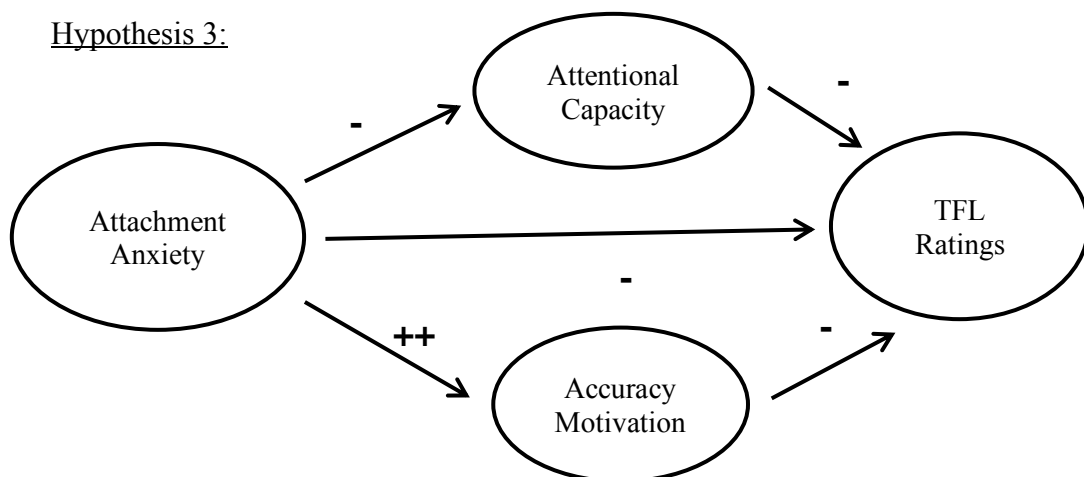


Figure 13. The proposed relationships between attachment anxiety (top) or attachment avoidance (bottom) and TFL ratings mediated by attentional capacity and accuracy motivation in a study setting where participants with high transformational implicit leadership theories are presented a non-transformational leader. TFL = transformational leadership.

Method

We used a fully-crossed, between-subjects, two-factor, high/low Working Memory Demands (WMD) by high/low Accuracy Goal Importance (AGI) design in Study 3. As explained at the end of this section, analyses followed a blockage manipulation-of-mediation design.

Sample and Procedure

Sample. Participants were recruited online in March 2017 via the platform *Prolific*, a crowdsourcing community and Oxford University Innovation Startup Incubator company that aims to bring together participants and researchers. Participants were paid GBP 6 in total for their participation. We pre-screened participants for their nationality and main residency (UK), their mother tongue (English), their full-time employment and having worked under a supervisor for at least six months. G*Power analysis (version 3.1.9.2; Faul, Erdfelder, & Buchner, 2007; Faul, Erdfelder, Buchner, & Lang, 2009) revealed a desired final sample size of $N = 210$ for a medium effect size $f = 0.25$, significance level $\alpha = 0.05$ and power level $(1 - \beta) = 0.95$. Taking into account a loss of approx. 35 % of participants when choosing participants with high transformational ILTs (as determined with data from Study 1 and 2), we aimed for a sample size of 330. Expecting a declining response rate over two measuring points in time and potential invalid cases, responses from $N = 437$ participants at Time 1 were collected.

In total, 372 participants completed all parts of the study (85 % of the 437 responses collected at Time 1). In order to be included in the final sample, participants had to pass various attention filter questions (for details, please see section “Secondary Measures”) at Time 1 and Time 2 and have had a minimum completion time of eight minutes for Time 1 and 22.5 minutes for Time 2. Cut-off

points regarding the completion times were derived from the medians of the completion times minus one standard deviation. Nine participants were excluded because they were thinking of their young child(ren) when answering the attachment style measure about their most important person. Some items of this measure are, however, not suitable in relation to very young children (e.g., “I usually discuss my problems and concerns with this person.”). One person was excluded because he thought of his cat as the most important person as no person was important enough for him, suggesting a highly avoidant attachment style towards humans. Four participants were excluded because they had experienced severe technical problems (e.g., video clips not loading properly).

This resulted in a sample of $N = 358$. Participants (74.8% male) were on average 36.3 years old ($SD = 9.7$) and have reported to their current supervisor for 3.9 years on average ($SD = 4.3$). Most of the participants had a Bachelor’s degree (46.1%), followed by a (British) College degree (or equivalent; qualification to enter higher education; 20.9%) and a Master’s degree (18.4 %). Approximately half of the participants were in the low WMD condition ($n = 178$ vs. $n = 180$ in the high WMD condition). Likewise, across the two WMD conditions, approximately half of the participants were in the low AGI condition ($n = 181$ vs. $n = 177$ in the high AGI condition).

Detecting further outliers. As in Study 1 and 2, the three statistics *Mahalanobis distance*, *leverage values*, and *studentized deleted residual* were used to detect outliers. For this, four regressions (either attachment anxiety or avoidance as independent variable and either TFL ratings or memory sensitivity as dependent variable) were run and the statistics saved. The resulting 12 variables were then examined using the explore function of IBM SPSS 20. Outliers in the boxplot

diagrams were recorded. One participant showed up as outlier five times and this was probably due to his high scores on attachment anxiety and avoidance.

Therefore, all cases were kept.

Determining subsample. To test our hypotheses, we only chose participants with relatively high transformational ILTs using an unstandardised unit weighted composite score of the transformational ILT dimensions (see section “Primary Measures” for more details). We interpreted high values as participants having highly transformational ILTs regarding the behaviour about an ideal leader. The cut-off point was determined prior to the data collection based on the data from Study 1 and 2. Choosing participants with a mean transformational ILT score of 5.5 or higher (which was 1.5 scale points higher than the scale mean of 4) eliminated participants with low transformational ILTs whilst still providing enough variance in the attachment anxiety and avoidance measure necessary to test our hypotheses. Applying this selection criteria resulted in a subsample of $n = 260$ (72.6% of the whole sample). Approximately half of the participants were in the low WMD condition ($n = 131$ vs. $n = 129$ in the high WMD condition). Likewise, across the two WMD conditions, approximately half of the participants were in the low AGI condition ($n = 134$ vs. $n = 126$ in the high AGI condition).

Procedure. The study was conducted entirely online over two measuring points in time (T1 and T2, with an average time difference of $M = 6.3$ days, $SD = 3.2$) to separate the measures. Participants could only access the surveys with a laptop or a desktop computer, but not with a mobile phone or tablet. The sequence of measures and manipulations is summarised in Table 21.

Important or lengthy instructions were also “read out” to the participants. Unannounced audio-only questions throughout the survey and experiment ensured

that participants had turned the sound on. The first part of the study assessed trait variables and demographics. In the second part of the study, participants were shown a video of a non-transformational team leader interacting with team members (Experimental Vignette Methodology, Aguinis & Bradley, 2014). Participants were asked to put themselves into the position of a team member and watch the video, followed by questions regarding the behaviour of the presented team leader.

Table 21

Study 3: Procedure: Sequence of the Measures and Manipulations

Time	Measure
T1	(1) Trait positive and negative affectivity
	(2) Attachment style towards most important person
	(3) Transformational ILTs about an ideal leader
	(4) Social desirability
	(5) Demographics
T2	(6) State positive and negative affectivity (pre-experiment)
	(7) Three practice trials for the dot-naming task: blank grey screen with a white dot repeatedly flashing in one of the four corners around the grey screen; participants had to indicate in irregular time intervals (between 15s and 25s) <ul style="list-style-type: none"> a. WMD low: where the last dot was b. WMD high: where the dot before the last dot was
	(8) [Three additional practice trials for participants in in WMD low and WMD high if participants answered one of the last two practice trials incorrectly; participants were redirected to the end of the survey if they answered one of the last two additional practice trials incorrectly]
	(9) Written and spoken background information for the video scenario, including a photo of the two team members Laura and Brian
	(10) Instructions: “While watching the video, your task is to attend to both, the content of the video and the position of the flashing dots.” <ul style="list-style-type: none"> a. AGI low: (no further instructions) b. AGI high: “It is extremely important that you make every effort to form an impression of the team leader that is as accurate as possible.”

Note. ILTs = implicit leadership theories. WMD = working memory demands. AGI = accuracy goal importance. TFL = transformational leadership.

The time difference between T1 and T2 was $M = 6.3$ days on average ($SD = 3.2$).

(continued)

Time	Measure
T2	<p>(11) Rating stimulus: video about a team meeting with a white dot repeatedly flashing in one of the four corners around the video screen; participants had to indicate in irregular time intervals (between 15s and 85s per sequence; eight sequences in total)</p> <ul style="list-style-type: none"> a. WMD low: where the last dot was b. WMD high: where the dot before the last dot was <p>(12) Filler task to avoid effects of short-term memory (Foti & Lord, 1987): Picture-Number Test MA-1 (Ekstrom, French, Harman, & Dermen, 1976)</p> <p>(13) In counterbalanced order: measures for (a) memory sensitivity and (b) TFL ratings</p> <p>(14) General leadership impression of the presented leader</p> <p>(15) State positive and negative affectivity (post-experiment)</p> <p>(16) Desire for more information (AGI manipulation check)</p> <p>(17) Attention check questions regarding the content of the video</p> <p>(18) Control questions regarding the test session (interruptions, technical problems etc.)</p>

Note. ILTs = implicit leadership theories. WMD = working memory demands. AGI = accuracy goal importance. TFL = transformational leadership.

The time difference between T1 and T2 was $M = 6.3$ days on average ($SD = 3.2$).

Rating Stimulus

In Study 3, we presented participants a video instead of a written vignette (cf. Study 1) to increase realism and the external validity of our study (Aguinis & Bradley, 2014). The video was based on a script by Sauer (2011) who originally differentiated between a high vs. low status leader and a participative vs. directive leadership style. For Study 3, we chose a medium status leader (e.g., dressed in a suit but without any extreme status symbols) and the directive leadership version. This leadership style was neither transformational nor transactional. The actors for the video were PhD students (aged 29 and 30, playing the team members)⁹ and a

⁹ Sauer (2011) had used fellow graduate students as well (personal communication).

former further education teacher with leadership experience (aged 36, playing the team leader), all dressed in appropriate business attire. The video was recorded in an executive conference room of Durham University Business School, ensuring high sound and image quality, and lasted approximately five minutes.

Participants had to imagine having been part of Synergetic Consulting, Inc. for the last two years, a small firm that specialises in providing management consulting in the high-tech manufacturing industry (see Appendix K). For the next project, they would be part of a consulting team trying to solve a complex decision-making task. The video, shot in the first-person perspective of the participant, showed the other two team members, Laura and Brian in a conference room, having an informal chat and exchanging information about the new team leader who was due to join them shortly. Matt Reynolds, the team leader, enters the room, introduces himself and exchanges pleasantries with the team members. The scene fades out and back in again, showing the team sitting with their laptops and phones at the table and working on the project. The task of the team was to develop a turnaround plan for a problematic production facility. The team leader Matt outlined the underlying problem and gave clear and directive instructions on what he wanted Laura and Brian to do. His behaviour was neither overly polite nor impolite but directive. Both Laura and Brian followed his instructions and reported back to him when required. A transcript of the video as well as a web link to access it are included in Appendix L.

Working Memory Demands Manipulation

Our Working Memory Demands (WMD) manipulation was inspired by the traditional complex Working Memory Capacity (WMC) span tasks and fulfilled the requirements to tax executive control (see Appendix J for details). We decided to

refer to our manipulation as Working Memory *Demands* (WMD) manipulation to avoid confusion with WMC tasks that are used to *measure* WMC. In order to tap into participants' capability for executive attention, participants have to maintain and update a stimulus list whilst attending to a secondary task (Engle & Kane, 2003). In our WMD manipulation, our "secondary task" (which was actually our main task) was the video of the team leader which participants in all conditions had to attend to. Our equivalent of a "stimulus list" was a white dot repeatedly flashing up in one of the four corners around the video screen while the video was playing. Details of the two conditions are presented in Table 21. Participants in the high WMD condition (but not those in the low WMD condition) constantly had to update their stimulus list (location of the last two dots) whilst paying attention to the content of the video, therefore lowering their WMC. Compared to ego-depletion studies, where participants have to perform the two tasks sequentially, participants in studies measuring working memory capacity have to perform the two tasks simultaneously.

Accuracy Goal Importance Manipulation

All participants received the instruction to attend to both, the content of the video and the position of the flashing dots. In order to manipulate the importance of accuracy goals (AGI), we emphasised the importance of getting an accurate impression of the team leader. As such, participants in the high AGI condition also received the following instruction: "It is extremely important that you make every effort to form an impression of the team leader that is as accurate as possible" (cf. Neuberg & Fiske, 1987). Participants in the low AGI condition received no further instructions (see Table 21).

Primary Measures

Implicit theories of transformational leadership behaviour (ideal leader).

In Study 1 and 2, participants' attachment anxiety was not correlated to their ILTs of a *typical* leader. However, linked to the *ideal* prototype of a leader, Hansbrough (2012) suggests that individuals high in attachment anxiety, due to their chronically activated attachment system, might be driven by their wish to find someone who can fulfil their attachment needs, also at work. Therefore, in order to link our research better to hers, we decided to focus on participants' ILTs of an *ideal* leader in Study 3.

This measure of participants' transformational ILTs was solely used to determine our subsample for testing our main hypotheses. We decided to only choose participants with relatively high transformational ILTs. This was aimed to create information inconsistency with the non-transformational leader presented in the video vignette to create a condition that potentially allows for individuation when rating the leader given a high enough motivation to do so (Neuberg & Fiske, 1987). Moreover, if we had included all participants, we would not have been able to determine whether low TFL ratings were due to accuracy or due to low TFL ILTs. As in Study 1 and 2, we assessed participants *Implicit Theories of Transformational Leadership Behaviour* using statements from the *Transformational Leadership Behavior Inventory* (Podsakoff et al., 1990) and a 7-point Likert-scale (1 = *Strongly disagree*, 7 = *Strongly agree*).

This time, however, participants had to rate the statements regarding transformational behaviour expected from an *ideal* leader (vs. a typical leader as in Study 1 and 2) (Offermann et al, 1994). Internal consistency for the single dimensions for an ideal leader were as follows: "Articulating a Vision" (five items):

$\alpha = .78$, “Providing Appropriate Model” (three items): $\alpha = .72$, “Fostering Acceptance Goals” (four items): $\alpha = .84$, “High Performance Expectations” (three items): $\alpha = .87$, “Individual Support” (four items): $\alpha = .68$, and “Intellectual Stimulation” (four items): $\alpha = .84$.

We created an unstandardised unit weighted composite score with values ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) and a mid-point of 4. A mean score of 7 therefore means that the participant, on average across all dimensions, strongly agrees that an ideal leader shows the transformational leadership behaviour presented in the items.

Attachment style. After closer consideration, we found the measure for attachment style used in Study 1 and 2 potentially confusing for participants as it sometimes referred to *partners* (plural; e.g., “I am very comfortable being close to romantic partners.”), sometimes to *partner* (singular; “I worry a fair amount about losing my partner.”) and sometimes did not have any specific reference to a person (e.g., “I worry about being abandoned.”). As such, one might have had negative experience with previous partners (e.g., activating an anxious attachment-style) but is now in a stable relationship (e.g., activating a secure attachment style). Therefore, in order to avoid confounding constructs and because not all participants might be in a relationship, we decided to test participants’ attachment anxiety and avoidance towards the most important person in their lives using the *Experiences in Close Relationships-Relationship Structures* questionnaire ECR-RS (Fraley et al., 2011)¹⁰. The ECR-RS consists of nine items assessing attachment avoidance (of which four

¹⁰ We also asked participants to indicate who they were thinking of for exploratory reasons. Moreover, participants who answered “Me” ($n = 18$) were asked to picture the most important person in their life that is somebody other than themselves prior to answering the attachment style items.

are reverse-coded, e.g., “It helps to turn to this person in times of need”, reverse coded) and three items assessing attachment anxiety (“I often worry that this person doesn't really care for me”). Items are rated on a 7-point Likert scale from *Strongly Disagree* to *Strongly Agree*. Average scores were computed for both avoidance and anxiety with higher scores indicating higher avoidance or anxiety. The internal consistency for attachment anxiety and avoidance was .87 and .89, respectively.

Memory sensitivity. To measure participants' memory sensitivity, we drew on signal detection theory (SDT), a theory widely accepted in psychology research, by using a yes/no task (Stanislaw & Todorov, 1999). For the present study, participants were presented with 8 items about the behaviour of the presented team leader and asked to indicate for each item whether or not the behaviour had been present (yes/no) and how confident they were of their answer (confidence rating; 7-point Likert-scale ranging from 1 = *not at all confident* to 7 = *extremely confident*; Foti & Lord, 1987). Items were derived with the help of the video script by Sauer (2011) and the items from the TLI for measuring transformational leadership behaviour¹¹. Four of the items were actually shown by the team leader (*signal trial*), whereas four of the items were not (*noise trial*). Sample items are “Got Laura and Brian to work individually on the same project” (signal trial) and “Got Laura and Brian to work together on the same project” (noise trial). We also measured

¹¹ In a pre-test, a group of n = 4 leadership researchers had rated a total of 12 items in advance (6 signal trials, 6 noise trials) according to their degree of transformational leadership behaviour. The four signal items with the lowest rating for transformational leadership (but at least with an average rating of less than 5.5) were chosen for the present study. All four corresponding noise items had an average transformational leadership rating of 6.8 or higher.

participants' reaction time to rate each item and reading speed was controlled by similar syllable length within signal/noise item-pairs (Foti and Lord, 1987)¹².

Correct *yes* responses on signal trials are called *hits (H)* and incorrect *yes* responses on noise trials are called *false alarms (FA)*. As such, the *hit rate* describes the probability of responding *yes* in a signal trial whereas the *false-alarm rate* describes the probability of responding *yes* in a noise trial. *Memory Sensitivity* (also called *recognition accuracy*), i.e., participants' ability to discriminate between items or behaviours that were actually present in the video and those that were not, was calculated using the discrimination index $Pr = H - FA$. This index is derived from the two-high threshold model of recognition memory after having applied the recommended correction for the hit and false-alarm rates (Snodgrass & Corwin, 1988). Values can range from -1.0 (recognition at chance) to 1.0 (perfect recognition accuracy) and ranged from -0.5 to 0.8 in the present study.

Transformational leadership ratings. To assess participants' perception of the team leader's transformational leadership, we again focused on the rating regarding his behaviour by using statements from the TLI (Podsakoff, Mackenzie, & Moorman, 1990). Participants had to imagine having to work with the presented workgroup on this project over the next few weeks. Participants were asked to indicate their impression about the team leader Matt by stating how much they agree or disagree with each statement. We explicitly decided for a near-future scenario as research has shown that the near future is more likely to be influenced by concrete

¹² Regarding confidence ratings and reaction time, we expected them to be another indicator for participants' schema-driven information processing: The lower the confidence ratings and the higher the reaction time for both absent and present items, the more they engage in schema-driven information processing (cf. Foti & Lord, 1987).

representations, whereas the distant future is more likely to be influenced by abstract representations (construal level theory; Trope & Liberman, 2003).

Or, to put it differently, according to the logic of construal level theory (CLT), stereotypes should guide ratings of near-future behaviours less than ratings of distant-future behaviours. Applied to the current study, people should rely less on their ILTs when rating the anticipated future behaviour of the presented team leader in a near-future setting compared to a distant-future setting. Creating a setting where individuation is likely gives us the possibility to detect potential variations in categorisation due to variations in attachment anxiety or avoidance. If we had presented them with a setting where categorisation was likely for *all* participants, it might have been harder to detect a relationship between attachment style and information processing tendencies.

Again, the transformational leadership behaviour dimensions “Articulating a Vision” (five items, $\alpha = .88$), “Providing Appropriate Model” (three items, $\alpha = .90$), “Fostering Acceptance Goals” (four items, $\alpha = .91$), “High Performance Expectations” (three items, $\alpha = .84$), “Individual Support” (four items, $\alpha = .79$), and “Intellectual Stimulation” (four items, $\alpha = .92$) were summarised into one variable ($\alpha = .96$) by standardising the dimensions first and then creating a unit weight composite score. As in Study 1 and 2, we called this variable *Transformational Behaviour Ratings*. Given that we selected participants according to their high TFL ILTs and given that the presented team leader did not show any transformational leadership behaviour, we interpreted low ratings on the transformational leadership behaviour scale as participants engaging in *data-driven* and high ratings as participants engaging in *schema-driven* social information processes. The measures

for transformational leadership ratings and memory sensitivity were counterbalanced in the study.

Secondary Measures

Several variables were considered as potential control variables: Trait positive and negative affectivity, state positive and negative affectivity, general leadership impression, and response bias¹³.

Trait positive and negative affectivity. Participants' trait positive and negative affectivity were measured in T1 using the *Positive and Negative Affect Schedule* (Watson, Clark, & Tellegen, 1988). Participants were presented with ten positive (e.g., "Interested", "Excited", and "Strong") and ten negative affect words (e.g., "Distressed", "Upset", and "Guilty"). For each word, they had to rate how they generally feel that way using a 5-point Likert-scale (1 = *Very slightly or not at all*, 5 = *Extremely*). The mean of the ten positive affect words formed the *Trait Positive Affectivity Scale* ($\alpha = .89$), the mean of the ten negative affect words the *Trait Negative Affectivity Scale* ($\alpha = .90$).

State positive and negative affectivity. We also assessed participants' state positive and negative affectivity using the same measure to determine whether this might have affected their performance on the tasks or ratings of the presented leader. This time, they had to rate how they felt *right now and at the present moment*. Participants had to make the ratings twice, before the experimental task at Time 2 and after answering the questions about the presented leader and his behaviour. This

¹³ We also assessed social desirability as a potential control variable using the same measure as in Study 1 and 2. However, this time, the social desirability items were not mixed with the attachment style items but presented separately. Participants had to indicate for each statement whether it was true or false. Scale reliabilities for the two dimensions *Attribution* and *Denial* were very low which is why we discarded social desirability from further analyses.

resulted in four state affectivity scales: *State Positive Affectivity* (pre-experiment) with $\alpha = .92$, *State Negative Affectivity* (pre-experiment) with $\alpha = .88$, *State Positive Affectivity* (post-experiment) with $\alpha = .93$, and *State Negative Affectivity* (post-experiment) with $\alpha = .87$.

General leadership impression. Participants were asked to indicate their general leadership impression about the presented leader using an adaption of the General Leadership Impression instrument consisting of five items developed by Cronshaw and Lord (1987). Sample items are “How much leadership does the presented team leader exhibit?” and “How willing would you be to choose the presented team leader as a formal leader?” with 5-point Likert scales as answering format. Scale’s Cronbach’s alpha was $\alpha = .85$ and the mean score was used for subsequent analyses.

Response Bias. Participants’ response bias was assessed by drawing again on SDT, this time using the Bias index Br with $Br = FA / [1 - (H - FA)]$ (Snodgrass & Corwin, 1988), with a value equal to 0.5 indicating neutral bias, a value greater than 0.5 indicating liberal bias (tendency to say “yes” when uncertain), and a value less than 0.5 indicates conservative bias (tendency to say “no” when uncertain). In the present study, values for Br ranged from 0.1 to 0.9.

Attention filter measures. Attention filter questions were used at Time 1 and 2 to check whether participants had read the items of the survey and paid attention to the rating stimulus. This was a mix of written items (e.g., “This is an attention question. Please select ‘2 Slightly Disagree’”), audio only questions (e.g., “Please select the digit 2.”), click count, and time spent on the page when presenting the rating stimulus, overall completion time, as well as three questions about the content of the video of the team meeting (pre-tested with the group of experts in

leadership research), e.g., “Who was Laura?” (correct answer: a team member).

Participants had to pass two of the three questions in order to be included in the final sample.

Manipulation check WMD. The amount of correct answers in the dot-naming task was taken as a manipulation check for WMD. Participants in the high WMD condition were expected to have fewer correct answers compared to participants in the low WMD condition.

Manipulation check AGI. We used participants’ desire for more information about the presented leader as manipulation check for AGI. Participants were lead to believe that, due to the study set-up, half of the participants would receive more information about the team leader and the project itself. Participants were asked to state how many pieces of information they would want about each, with the total amount adding up to ten pieces of information. We expected that the higher participants’ accuracy motivation to get an accurate impression of the team leader, the higher their desire for more information about the leader¹⁴.

Blockage Manipulation-of-Mediation Design

Overview. To test for proposed mediations, we used a *Blockage Manipulation-of-Mediation Design* (Pirlott & MacKinnon, 2016; also called *Testing-a-Process-hypothesis-by-an-Interaction-Strategy* by Jacoby & Sassenberg, 2011, or *moderation-of-process design* by Spencer, Zanna, & Fong, 2005). This design translates a theoretical mediation into a statistical moderation and is especially useful if the mediating process of interest is hard to measure but easy to manipulate. A

¹⁴ We had also considered participants’ reaction time as potential manipulation check variables. However, as this was an online study where participants used their own devices (including touch screens) with varying internet speed, the recorded reaction time did not always reflect participants’ actual reaction time and was hence discarded from further analyses.

detailed explanation of how a mediation is traditionally tested, how the blockage manipulation-of-mediation design works, and why we decided to use this design for Study 3 is given in Appendix J.

In summary, for attentional capacity, for example, we propose that attachment anxiety and avoidance both lead to reduced attentional capacity, potentially resulting in more schema-driven information processing. Instead of *measuring* how participants' attentional capacity varies due to their attachment anxiety or avoidance and subsequently affects participants' schema-driven information processing, we investigated its influence by *blocking* it in two of the four conditions our participants were in. If attentional capacity was indeed mediating the relationship between attachment anxiety/avoidance and schema-driven information processing, then this mediating influence should disappear when being blocked.

We blocked the influence of attentional capacity by increasing participants' working memory demands in two experimental conditions (high and low accuracy goal importance conditions). Consequently, every participant in these groups, independent of their attachment style, was expected to have lowered attentional capacity. Therefore, in this blockage condition, there should be no relationship between the independent variable and the dependent variable. In the control condition (low working memory demands), on the other hand, there should be a positive relationship between attachment anxiety/avoidance and schema-driven information processing. *Because the only difference between the two conditions is the blockage of the mediator attentional capacity, the statistical moderation of the relationship between attachment anxiety/avoidance and schema-driven information*

processing by the experimental factor (blocking vs. not blocking the mediator) can potentially indicate a theoretical mediation relationship.

More technically speaking, the blockage manipulation neutralises the effects of the (conceptually proposed) *transmitting variable TV* (mediator), resulting in a decreased effect of the transmitting variable TV on the dependent variable Y. Therefore, the effect of the independent variable (attachment anxiety or avoidance) on the dependent variable (memory sensitivity or TFL ratings) via the proposed mediating variables (attentional capacity) should only be found in the control condition. Thus, the “manipulated mediator” actually moderates the relationship between the independent and dependent variable by reducing variability associated with attachment anxiety and avoidance and information processing.

Strictly speaking, however, it is not the mediator that is being manipulated but the blockage manipulation is created by a *factor B*, a technical factor but not a theoretical variable (Jacoby & Sassenberg, 2011). As such, the TV of interest and the factor B might be correlated but they are conceptually not identical. For example, we were interested in attentional *capacity* as a TV but blocked its influence by imposing attentional *demands* (factor B) onto half of our participants. Overall, we created two blockage conditions (one for each proposed mediator) by manipulating participants’ *working memory demands* (WMD; low vs. high) to test for the mediating role of attentional capacity, and their *accuracy goal importance* (AGI; low vs. high) to test for the mediating role of accuracy motivation, resulting in a 2×2 between-subject design.

Further, we would expect that the proposed positive relationship between attachment anxiety and accuracy motivation might be able to counteract the proposed negative relationship between attachment anxiety and attentional capacity.

This expectation was based on our findings from Study 1, where the higher participants' attachment anxiety, the less they relied on their ILTs when rating a fictitious leader. We argued that participants high in attachment anxiety might have higher accuracy motivation that would help them overcome their proposed limited attentional capacity due to their insecure attachment style. We therefore expected our two factors to interact with each other in moderating the relationship between attachment anxiety/avoidance and the dependent variables (moderated moderation, Hayes, 2013). This would be indicated by a significant three-way interaction $\text{Anxiety (Avoidance)} \times \text{WMD} \times \text{AGI}$.

Expected Patterns

Expected patterns for memory sensitivity as dependent variable are shown in Figure 14. In H1, we propose that the positive relationship between attachment anxiety and memory sensitivity will be jointly mediated by attentional capacity and accuracy motivation, with the effects of the two mediators working in opposite directions. The initial positive relationship between attachment anxiety and memory sensitivity is expected to show in the control conditions AGI low in combination with WMD low (see Figure 14, Graph I, white circles). Here, both attentional capacity and accuracy motivation can vary freely as a function of attachment anxiety. As we expect the effects of accuracy motivation to outweigh the effects of attentional capacity, we overall expect that the higher attachment anxiety, the higher participants' memory sensitivity (as a consequence of less schema-driven information processing due accuracy motivation being higher than the lack in attentional capacity).

Once the influence of attentional capacity is blocked (high WMD; see Figure 14, Graph I, black circles), we expect all participants to have the same low levels of

attentional capacity, hence their perception is more schema-driven, resulting in generally lower memory sensitivity. As only the influence of accuracy motivation can vary freely as a function of attachment anxiety, the higher the attachment anxiety, the higher participants' memory sensitivity. As the influence of the proposed negative relationship between attachment anxiety and attentional capacity is blocked, the relationship between attachment anxiety and memory sensitivity is slightly stronger than we would expect it to be in the low WMD condition.

When, on the other hand, the influence of accuracy motivation is blocked and the influence of attentional capacity can vary freely as a function of attachment anxiety (high AGI/low WMD, see Figure 14, Graph II, white circles), we expect the relationship between attachment anxiety and memory sensitivity to be negative: The higher attachment anxiety, the lower participants' memory sensitivity due to their lower attentional capacity. The proposed positive relationship between attachment anxiety and accuracy motivation cannot show in this combination as the influence of accuracy motivation is blocked.

In the full blockage condition (high WMD/high AGI, see Figure 14, Graph II, black circles), we expect a nil-relationship between attachment anxiety and memory sensitivity because the influences of both, attentional capacity and accuracy motivation due to attachment anxiety are blocked and therefore cannot vary freely as a function of attachment anxiety.

Moving on to our second hypothesis, we expected attachment avoidance to be negatively related to memory sensitivity due to the joint mediation of attentional capacity and motivation. In contrast to attachment anxiety, we expected this relationship to be stronger due to the effects of the two mediators adding up (see Figure 14, Graph III, white circles). Blocking the influence of attentional capacity

(high WMD, black circles) should weaken the relationship between attachment avoidance and memory sensitivity. If attentional capacity can vary freely as a function of attachment avoidance and the influence of accuracy motivation is blocked (low WMD/high AGI, Graph IV, white circles), we would expect a similarly strong negative relationship between attachment avoidance and memory sensitivity. If the influence of both mediators is blocked (high WMD/high AGI; Graph IV, black circles), we yet again expected a nil-relationship between attachment avoidance and memory sensitivity due to reasons given above.

For TFL ratings as dependent variable, we expected the same pattern but in the opposite direction. For ease of comparing and discussing our expectations with our results, we have explicitly depicted them as well in Figure 15.

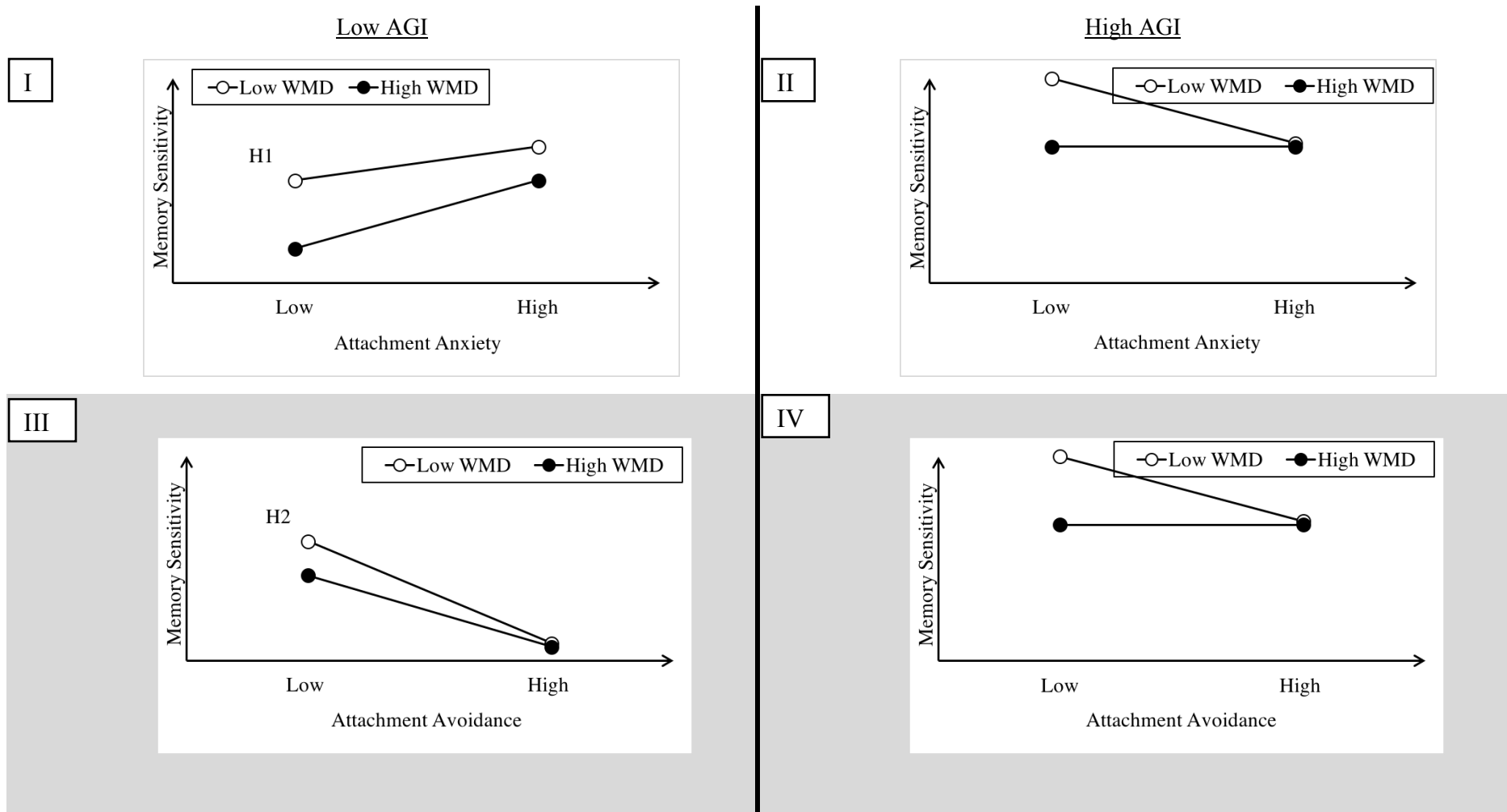


Figure 14. Expected moderating role of the interaction between working memory demands (WMD) and accuracy goal importance (AGI; left: AGI low; right: AGI high) on the relationship between attachment anxiety (top, I and II) or avoidance (bottom, grey shaded, III and IV) and memory sensitivity.

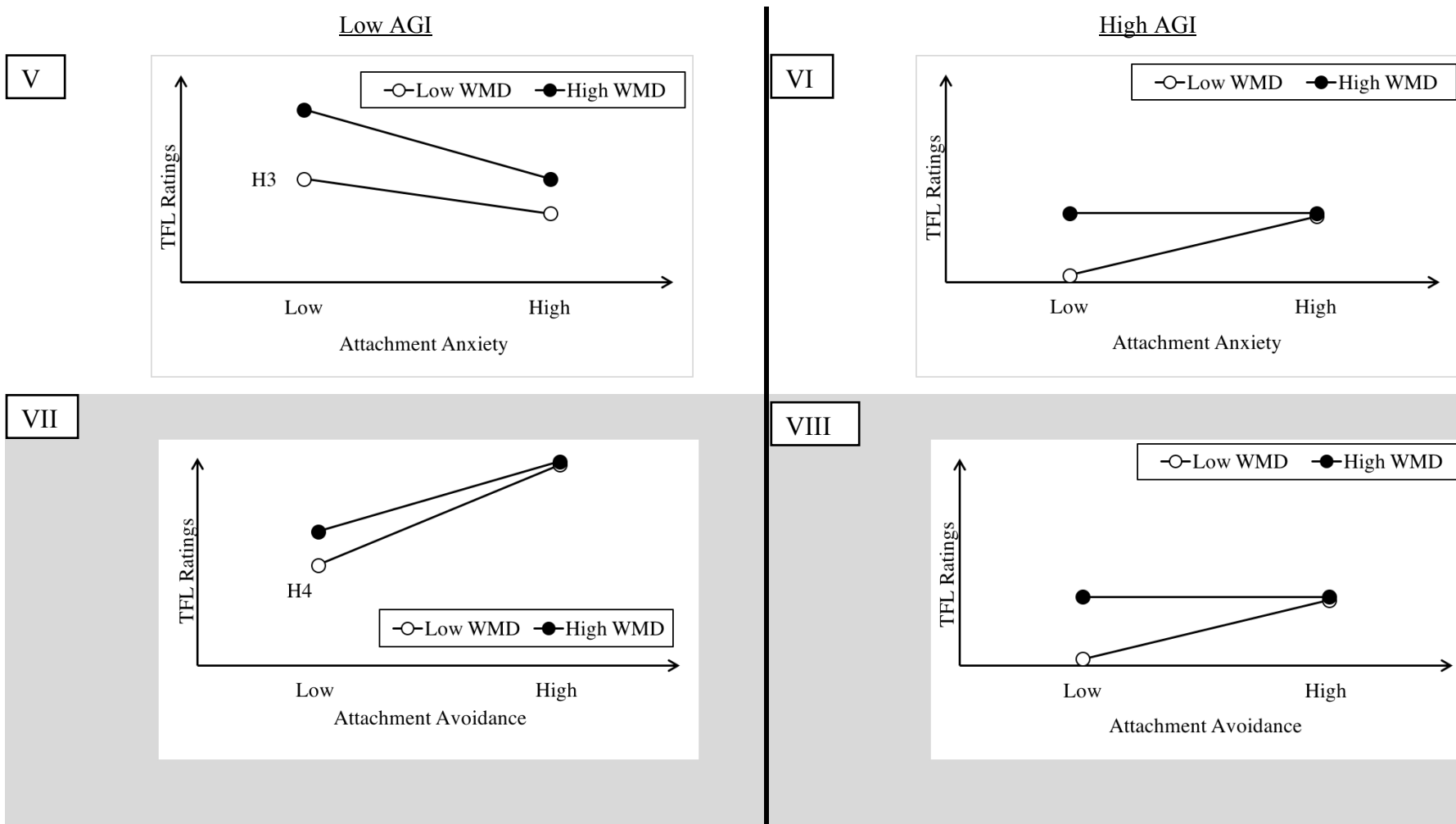


Figure 15. Expected moderating role of the interaction between working memory demands (WMD) and accuracy goal importance (AGI; left: AGI low; right: AGI high) on the relationship between attachment anxiety (top, I and II) or avoidance (bottom, grey shaded, III and IV) and TFL ratings.

Results

All analyses were done using IBM® SPSS® Statistics 20. To test for multicollinearity of the predictors, regression models used to test the four hypotheses were checked using collinearity diagnostics produced by IBM® SPSS® when running the regressions. The variance inflation factor (VIF) should be below 10 and the tolerance statistic ($1/\text{VIF}$) above 0.1 but ideally above 0.2 (Field, 2009). This was always the case and we therefore did not expect multicollinearity to be a potential problem for our interpretations.

Descriptive Statistics

Table 22 shows means, standard deviations, alphas, and correlations of the variables for the whole sample (below diagonal, $N = 358$) as well as the subsample (shaded and above diagonal, $n = 260$). Similar to Study 1 and 2, attachment anxiety was positively correlated with attachment avoidance in both the whole sample and the subsample ($r = .29, p < .01$, two-tailed and $r = .30, p < .01$, two-tailed, respectively)¹⁵. Moreover, attachment anxiety and attachment avoidance were both negatively correlated with TFL ILTs in the whole sample ($r = -.15, p < .01$, two-tailed and $r = -.31, p < .01$, two-tailed, respectively). There was no correlation with attachment anxiety or avoidance and memory sensitivity or TFL ratings, neither in the whole sample nor in the subsample. The mean for the variable TFL ratings was zero ($SD = 0.81$) in the whole sample as it was a unit weighted composite score. For the subsample, its mean was $M = 0.07$ with $SD = 0.84$.

¹⁵ Controlling for the attachment dimension that was not used as an independent variable did not change the obtained results.

Due to its correlation with memory sensitivity and TFL ratings, response bias was used as control variable for both dependent variables¹⁶. With this, we wanted to ensure that the proposed differences in memory sensitivity and TFL ratings due to our WMD and AGI manipulation are based on differences in schema-driven information processing (i.e., relying on high TFL ILTs) rather than changes in the tendency to say “yes” or “no” when uncertain (i.e., response bias), both of which could be increased in the high WMD condition.

Also, leadership ratings can be influenced by differences in raters’ decision criteria (Lord, 1985). Response bias was neither correlated with attachment anxiety nor avoidance. Hence, controlling for response bias might simplify the interpretation of results without eliminating the individual differences effects. Moreover, for TFL ratings as dependent variable, pre-experimental state positive affectivity was used as a control variable (next to the presentation order of the two dependent variables and response bias) due to its correlation with TFL ratings.

Manipulation check WMD and AGI. As expected, a MANOVA revealed that, compared to participants in the low WMD condition, participants in the high WMD condition had fewer correct answers in the dot-naming task (low WMD: $M = 7.75$, $SD = 0.57$; high WMD: $M = 7.14$, $SD = 1.09$; $F(1, 354) = 43.87$, $p < .001$, $\omega^2 = .11$), indicating a successful manipulation of WMD. Contrary to expectations, for AGI, participants in the low AGI condition did not differ from participants in the high AGI condition regarding their desire for more information about the presented

¹⁶ We suspect that the correlation between the two independent constructs memory sensitivity and response bias (Snodgrass and Corwin, 1988) is due to our WMD manipulation, with less attentional capacity available potentially resulting in a higher response bias. The correlation between memory sensitivity and response bias was $r = -.11$ (*ns*) in the low WMD condition and $r = -.19$ ($p < .05$) in the high WMD condition. However, the WMD \times response bias interaction was not significant in predicting memory sensitivity. The correlation between response bias and TFL ratings could be due to a lower threshold to say yes when uncertain for participants with a high response bias and therefore giving higher TFL scores when rating the leader.

leader (low AGI: $M = 4.46$, $SD = 2.00$; high AGI: $M = 4.70$, $SD = 2.00$; $F(1, 354) = 1.25$, ns , $\omega^2 = .00$). Considering that AGI had a main effect on TFL ratings in the main analyses, we assume that the unsuccessful manipulation check is due to an inadequate measure. Moreover, there was no significant main effect for WMD on the desire for more information about the presented leader and no significant main effect for AGI on the score of the dot-naming task. Moreover, the interaction term of $WMD \times AGI$ on the two variables was not significant either.

Table 22

Study 3: Means, Standard Deviations, Alphas, and Correlations of Variables for the Whole Sample (below diagonal, N = 358) and the High Transformational ILT Subsample (shaded and above diagonal, n = 260)

	1	2	3	4	5	6	7	8	9	10
1. TFL ILT	(.89)	-.51	.07	-.08	-.17**	.08	.05	.07	.03	-.06
2. TFL Ratings (UWC)	.10	-	-.37**	-0.11	0.03	.23**	.39**	-.25**	0.08	-.14*
3. Sensitivity	.02	-.34**	-	0	0.08	0	-.19**	0.02	-0.01	0.08
4. Anxiety	-.15**	-.10	.01	(.87)	.30**	-0.06	0	0.05	-0.01	0.03
5. Avoidance	-.31**	.00	.01	.29**	(.89)	0.03	0.03	-0.12	0.06	-0.03
6. PA Pre	.14**	.27**	.00	-.06	-.01	(.92)	.13*	-0.11	0.06	0.01
7. Response Bias	.04	.39**	-.16**	.01	.01	.11*	-	-0.03	0	-0.06
8. Presentation Order	.00	-.23**	.00	.02	-.11*	-.01	-.08	-	0.01	0.02
9. WMD	.01	.07	.03	-.02	.04	.10	.01	-.01	-	.04
10. AGI	-.07	-.12*	.04	.06	.04	-.02	-.04	.01	.01	-
M (N = 358)	5.85	0.00	0.32	2.15	2.16	2.83	0.58	1.51	0.50	0.49
SD (N = 358)	0.56	0.81	0.25	1.36	1.11	0.79	0.19	0.50	0.50	0.50
M (n = 260)	6.11	0.07	0.32	2.02	1.97	2.88	0.58	1.49	0.50	0.48
SD (n = 260)	0.38	0.84	0.26	1.32	1.01	0.81	0.18	0.50	0.50	0.50

Note. TFL = Transformational Leadership. ILT = Implicit Leadership Theory. UWC = standardised unit weighted composite variable. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance. PA Pre = Positive Affect pre-experiment. Presentation Order: 1 TFL Ratings first, 2 = Memory Sensitivity first. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Order effects. Participants were presented the measures for the two dependent variables memory sensitivity and TFL ratings in counterbalanced order. The order of the measures had no significant effect on participants' scores for memory sensitivity, but for participants' TFL ratings. Participants who were presented to the measure for memory sensitivity first had significantly lower TFL ratings ($M = -0.18$, $SD = 0.77$) compared to participants who had to give their TFL ratings first ($M = 0.19$, $SD = 0.81$), $F(1, 356) = 19.87$, $p < .001$, $\omega^2 = .05$. We therefore controlled for presentation order in subsequent analyses with TFL ratings as dependent variable¹⁷.

Main Analyses

As mentioned above, we tested the hypothesised mediating role of attentional capacity and accuracy motivation using a blockage manipulation-of-mediation design by testing the moderating role of our two manipulations *Working Memory Demands* (WMD: low vs. high) and *Accuracy Goal Importance* (AGI: low vs. high). As we expected the relationship between attachment anxiety/avoidance and memory sensitivity/TFL ratings to be moderated by the interaction of AGI \times WMD, we tested for a moderated moderation (Hayes, 2013). We used separate multiple regression for our two dependent variables memory sensitivity and TFL ratings as well as when testing for attachment anxiety or avoidance as independent variables, resulting in four different multiple regressions. When reporting the results, we will first interpret them following the logic of the blockage manipulation-of-mediation design, before turning to a more conventional way of interpreting them.

¹⁷ We had first included the presentation order variable as an additional factor in our regression analyses. As this made no notable difference to our main findings and to enhance readability, we only included it as a control variable for the presented analyses.

Memory sensitivity. For memory sensitivity as dependent variable, we first entered response bias as control variable due to its correlation with memory sensitivity and TFL ratings¹⁸. In the second step, we entered either attachment anxiety (Anxiety) or avoidance (Avoidance; centred variables), followed by the third step where we entered working memory demands (WMD; 0 = low and 1 = high) and accuracy goal importance (AGI; 0 = low and 1 = high). In the fourth step, we entered the interaction terms Anxiety (Avoidance) \times WMD, Anxiety (Avoidance) \times AGI, and WMD \times AGI. In the last step, we entered the three-way interaction term Anxiety (Avoidance) \times WMD \times AGI. As the last step never lead to a significant increase in R^2 and due to parsimony reasons, it is not displayed in the regression tables.

Our first hypothesis involving the positive relationship between attachment anxiety and memory sensitivity being jointly mediated by attentional capacity and accuracy motivation was not supported as there was only a significant main effect for response bias. More specifically, the main effect for response bias remained significant even in the last model ($\beta = -.18, p < .01$, see Table 23): The more liberal participants' response bias (i.e., the higher their tendency to say "yes" when uncertain), the lower their sensitivity (i.e., their recognition accuracy). In other words, participants with a tendency to say "yes" when uncertain showed lower levels of recognition accuracy.

¹⁸ Results were similar to results when not controlling for response bias, and these regression tables are given in Appendix O.

Table 23

Study 3: Hierarchical Multiple Regression Predicting Memory Sensitivity from Attachment Anxiety with AGI and WMD as Potential Moderators

Predictors	Memory Sensitivity			
	Beta			
	Model 1	Model 2	Model 3	Model 4
Response Bias	-.19**	-.19**	-.18***	-.18**
Anxiety		-.01	-.01	-.12
AGI			.07	.13
WMD			-.01	.05
Anxiety × AGI				.05
Anxiety × WMD				.11
AGI × WMD				-.11
R^2	.04	.04	.04	.05
Change in R^2	.04**	.00	.01	.01

Note. N = 260. Anxiety = Attachment Anxiety. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Our second hypothesis involving the negative relationship between attachment avoidance and memory sensitivity being jointly mediated by attentional capacity and accuracy motivation was partially supported. Response bias was again a significant predictor even in the last model ($\beta = -.18, p < .01$, see Table 24, Model 4) and the Avoidance × WMD interaction term significantly predicted memory sensitivity ($\beta = .23, p < .05$, see Table 24, Model 4). More specifically, for

participants in the low WMD condition, where participants' attentional capacity could vary freely as a function of attachment avoidance, attachment avoidance did not significantly predict memory sensitivity (simple slope: $b = -0.04$, $t = -1.14$, *ns*; see Figure 16).

Table 24

Study 3: Hierarchical Multiple Regression Predicting Memory Sensitivity from Attachment Avoidance with AGI and WMD as Potential Moderators

Predictors	Memory Sensitivity			
	Beta			
	Model 1	Model 2	Model 3	Model 4
Response Bias	-.18**	-.19**	-.19**	-.18**
Avoidance		.08	.09	-.14
AGI			.07	.14
WMD			-.02	.07
Avoidance × AGI				.07
Avoidance × WMD				.23*
AGI × WMD				-.10
R^2	.04	.04	.05	.07
Change in R^2	.04**	.01	.01	.03†

Note. N = 260. Avoidance = Attachment Avoidance. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

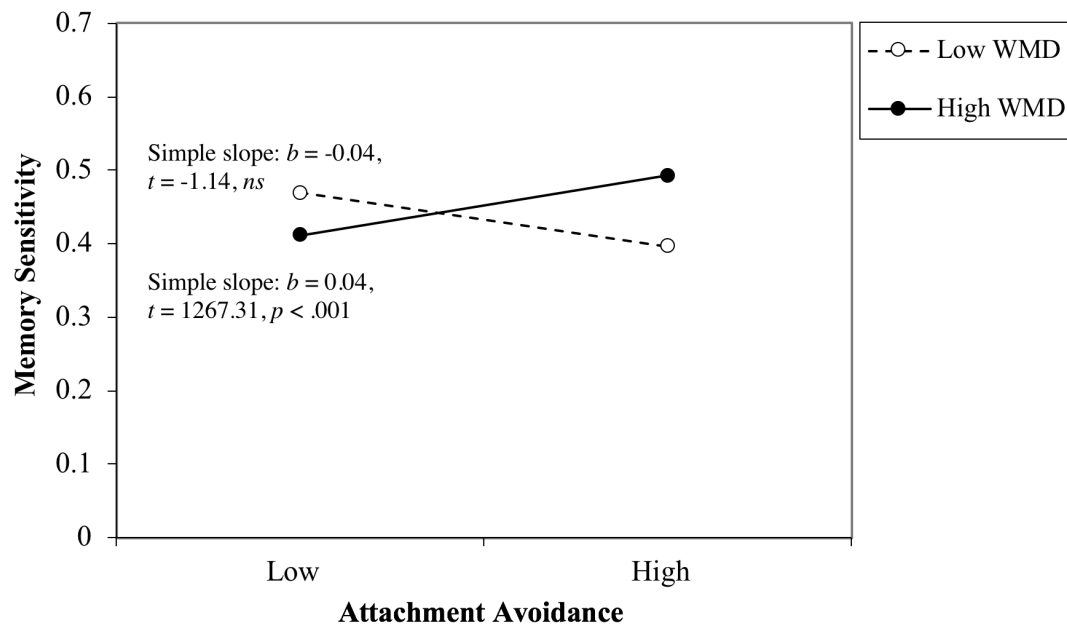


Figure 16. Moderating effect of the WMD manipulation on the relationship between attachment avoidance and memory sensitivity. Moderation was significant at $p < .05$.

For participants in the high WMD condition, where the influence of individual differences in attentional capacity due to attachment avoidance should have been blocked, the higher the attachment avoidance, the higher their memory sensitivity (simple slope: $b = 0.04$, $t = 1267.31$, $p < .001$), indicating that a higher degree of attachment avoidance resulted in a more accurate recognition of the leader's behaviour. Or, seeing it from a different angle, when (additional) working memory demand is put upon participants, a higher degree of attachment avoidance resulted in a more accurate recognition of the leader's behaviour. In this case, this result appears counter-intuitive at first.

However, as we will describe in the *Discussion* in more detail, additional working memory demands can cause an ironic break-down of the defense-mechanism in participants high in attachment avoidance (Edelstein & Gillath, 2008; Mikulincer, Dolev, & Shaver, 2004). Under normal circumstances, participants high

in attachment avoidance are said to block out social cues or information (Fraley et al., 2000; Mikulincer et al., 2003). When additional working memory demands are imposed, this attention control system can break down, allowing social information to capture their attention, producing an “ironic” effect (also see the theory of ironic processes of mental control, Wegner, 1994). In short, the effects of attachment avoidance reflect a social avoidance strategy that breaks down under high memory demands.

Overall, we see our second hypothesis as partially supported as there was only indirect support for attentional capacity (but not accuracy motivation) acting as a mediator in the relationship between attachment avoidance and memory sensitivity.

TFL ratings. We interpreted participants’ higher TFL ratings as higher tendency to rely on transformational ILTs when rating the non-transformational leader and hence as being less accurate when forming an impression about him. Thus, the signs for analogous effects would be the opposite to those for memory sensitivity. To analyse TFL ratings as dependent variable, we entered response bias¹⁹, pre-experimental positive affect, and the presentation order variable as control variables. The remaining steps were identical to the steps for memory sensitivity. Again, the last step (entering the three-way interaction) never lead to a significant increase in R^2 which is why it is not displayed in the regression tables.

As shown in Table 25, all three control variables remained significant predictors for participants’ TFL ratings until and including the last step (pre-experimental positive affect: $\beta = .19, p < .005$; response bias: $\beta = .35, p < .001$; presentation order: $\beta = -.22, p < .001$). The higher participants’ pre-experimental

¹⁹ Results were similar to results when not controlling for response bias and the regression tables are given in Appendix P.

positive affect, the higher TFL ratings they gave the presented leader. The more liberal participants' response bias (i.e., tendency to say "yes" when uncertain), the higher their TFL ratings. Regarding presentation order, as pointed out in the preliminary analysis section, participants who were presented to the measure for memory sensitivity first had significantly lower TFL ratings compared to participants who had to give their TFL ratings first.

Turning to Hypothesis 3, which posited the negative relationship between attachment anxiety and TFL ratings being jointly mediated by attentional capacity and accuracy motivation, in Model 3, AGI had a significant main effect on TFL ratings ($\beta = -.12, p < .05$), indicating that people in the high AGI condition reported lower TFL ratings compared to people in the low AGI condition. However, this became non-significant when entering the Anxiety \times WMD interaction term in Model 4. The interaction term itself was a significant predictor for TFL ratings ($\beta = -.19, p < .05$), driving the overall improvement from Model 3 to Model 4 (i.e., including the three two-way interaction terms) which was marginally significant ($\Delta R^2 = .02, p < .10$).

Table 25

Study 3: Hierarchical Multiple Regression Predicting TFL Ratings from Attachment Anxiety with AGI and WMD as Potential Moderators

Predictors	TFL Ratings			
	Beta			
	Model 1	Model 2	Model 3	Model 4
PA Pre	.16**	.16**	.15**	.15**
Response Bias	.36***	.36***	.36***	.35***
Presentation Order	-.23***	-.22***	-.22***	-.22***
Anxiety		-.10†	-.09†	.03
AGI			-.12*	-.11
WMD			.08	.08
Anxiety × AGI				.02
Anxiety × WMD				-.19*
AGI × WMD				-.02
R^2	.23	.24	.26	.28
Change in R^2	.23***	.01†	.02*	.02†

Note. N = 260. TFL = Transformational Leadership. PA Pre = Positive Affect pre-experiment. Presentation Order: 1 TFL Ratings first, 2 = Memory Sensitivity first. Anxiety = Attachment Anxiety. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

As shown in Figure 17 which plots the Anxiety \times WMD interaction, when participants' working memory capacity could vary freely as a function of attachment anxiety (low WMD, white circles), attachment anxiety did not significantly predict TFL ratings (simple slope: $b = 0.02$, $t = 0.27$, *ns*). When the variability of participants' working memory capacity should have been blocked (high WMD, black circles), the relationship between attachment anxiety and TFL ratings was negative (simple slope: $b = -0.16$, $t = 2.87$, $p < .01$): The higher the attachment anxiety, the lower and hence more accurate the TFL ratings. Or, in relation to the slope of low WMD, for participants put under high WMD, the lower the attachment anxiety, the higher and therefore less accurate participants' TFL ratings. As such, the higher the attachment anxiety, the lower the influence of additional working memory demands on participants' leadership ratings.

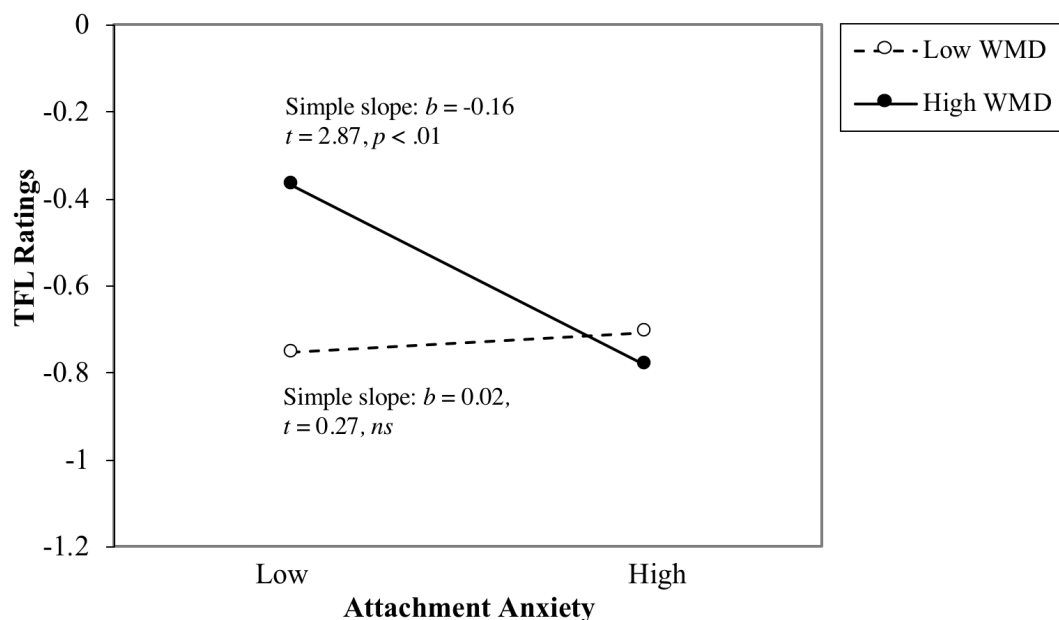


Figure 17. Moderating effect of the WMD manipulation on the relationship between attachment anxiety and TFL ratings. Moderation was significant at $p < .05$.

There are three possible explanations for this pattern. Firstly, the higher participants' attachment anxiety, the better they might have been in ignoring the dot-naming task so they can focus on the presented leader (resource *re-allocation*). This should have shown in lower scores on the dot-naming task for participants the higher participants' attachment anxiety when in the high WMD condition. However, this was not the case (see "Exploratory Analyses") as there was no interaction effects but only a main effect for WMD on the score of the dot-naming task. A second explanation could be that the higher participants' attachment anxiety, the lower their TFL ILTs. Hence a low TFL rating would not necessarily reflect accuracy but their usage of their low TFL ILTs (both because of their trait and/or because of the WMD manipulation). However, as attachment anxiety was not related to TFL ILTs in the subsample (see Table 22), we discard this as a possible explanation. A more likely explanation is that high attachment anxious participants chronically detect social stimuli and thus are more skilled in encoding behaviour and consequently use less attentional resources. This detection of social stimuli might have indeed been originally driven by a higher motivation to perceive others in an accurate manner.

Overall, we see our third hypothesis, that the negative relationship between attachment anxiety and TFL ratings is jointly mediated by attentional capacity and accuracy motivation as partially supported. Although the pattern of results was not as expected, the data suggests that the higher attachment anxiety, the better participants are in activating additional resources in order to maintain their good impression formation performance. This skill could have developed due to a general high accuracy motivation in person perception, counteracting the effects of additional working memory demands.

In testing Hypothesis 4, which posited a positive relationship between attachment avoidance and TFL ratings being jointly mediated by attentional capacity and accuracy motivation, as shown in Table 26, all three control variables again remained significant predictors for participants' TFL ratings through the last model (pre-experimental positive affect: $\beta = .16, p < .01$; response bias: $\beta = .36, p < .001$; presentation order: $\beta = -.21, p < .001$) with the same directions as for attachment anxiety as independent variable. In Model 3, AGI had a significant main effect on TFL ratings ($\beta = -.12, p < .05$), again indicating that people in the high AGI condition reported lower TFL ratings compared to people in the low AGI condition. However, this main effect was qualified by the interaction with attachment avoidance, as in Model 4, the Avoidance \times AGI interaction term was a significant predictor for TFL ratings ($\beta = .22, p < .01$) which was driving the overall significant improvement from Model 3 to Model 4 ($\Delta R^2 = .03, p < .05$).

As shown in Figure 18 which plots the Avoidance \times AGI interaction, when participants' accuracy goal importance could vary freely as a function of attachment avoidance (low AGI, white squares), attachment avoidance did not significantly predict TFL ratings (simple slope: $b = -0.08, t = -0.97, ns$). When the variability of participants' accuracy goal importance should have been blocked (high AGI, black squares), the relationship between attachment avoidance and TFL ratings was positive (simple slope: $b = 0.18, t = 2.25, p < .05$): The higher the attachment avoidance, the higher and hence less accurate the TFL ratings. Or, in relation to the slope of low AGI, for participants in the high AGI condition, the lower the attachment avoidance, the lower and therefore more accurate participants' TFL ratings. As such, the higher the attachment avoidance, the lower the influence of the accuracy goal importance manipulation on participants' leadership ratings.

Table 26

Study 3: Hierarchical Multiple Regression Predicting TFL Ratings from Attachment Avoidance with AGI and WMD as Potential Moderators

Predictors	TFL Ratings			
	Beta			
	Model 1	Model 2	Model 3	Model 4
PA Pre	.16**	.16**	.16**	.16**
Response Bias	.36***	.36***	.36***	.36***
Presentation Order	-.23***	-.22***	-.22***	-.21***
Avoidance		-.01	-.02	-.09
AGI			-.12*	-.07
WMD			.08	.10
Avoidance × AGI				.22**
Avoidance × WMD				-.09
AGI × WMD				-.05
R^2	.23	.23	.25	.28
Change in R^2	.23***	.00	.02*	.03*

Note. N = 260. TFL = Transformational Leadership. PA Pre = Positive Affect pre-experiment. Presentation Order: 1 TFL Ratings first, 2 = Memory Sensitivity first. Avoidance = Attachment Avoidance. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† p < .10. * p < .05. ** p < .01. *** p < .001.

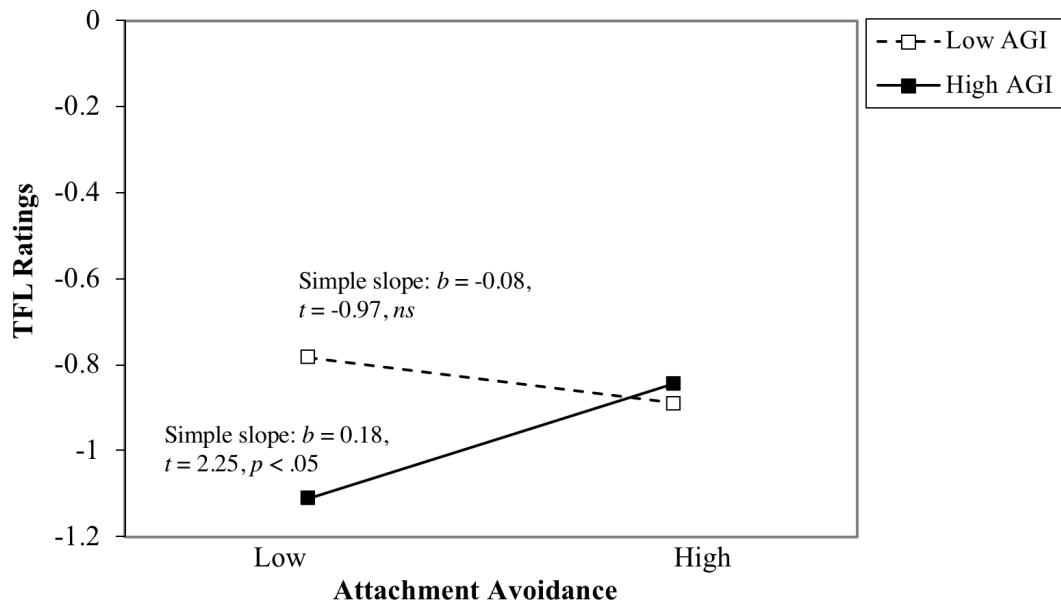


Figure 18. Moderating effect of the AGI manipulation on the relationship between attachment avoidance and TFL ratings. Moderation was significant at $p < .01$.

Although the pattern of results was not as expected we see our fourth hypothesis as partially supported. The higher attachment avoidance, the less receptive participants were to instructions that helped them give more accurate ratings for the leader. Taking into account results regarding their dot-naming task (see section “Exploratory Analyses”), one could argue that the higher participants’ attachment avoidance, they more they shield themselves from social information, redirecting their attention to non-social tasks and this might be due to an underlying motivational reason.

Exploratory Analyses

To better understand our main results and to see whether a shift in attention might have taken place in participants (from impression formation to dot-naming task), we also ran two regression analyses where participants’ score on the dot-naming task was the dependent variable (possible scores ranging from 0 to 8). We

first entered either attachment anxiety or avoidance into the regression, followed by AGI and WMD in Step 2. In Step 3, we entered the three two-way interaction terms. The three-way interaction term Anxiety (Avoidance) \times WMD \times AGI was entered in the last step but never significant and hence is not reported.

Attachment anxiety and score on the dot-naming task. Regarding the relationship between attachment anxiety and score on the dot-naming task, the WMD manipulation was the only predictor that was and remained significant even in the last model ($\beta = -.30, p < .001$, see Table 27). As expected, participants in the low WMD condition had significantly higher scores on the dot-naming task than participants in the high WMD condition. This was the case across both AGI conditions. There were no other significant main or interaction effects. These results indicate that the Anxiety \times WMD interaction predicting TFL ratings is linked to resource *activation* rather than the *re-allocation* of resources. The higher participants' attachment anxiety. If it was associated with resource re-allocation, participants in the high WMD condition should have scored lower on the dot-naming task the higher their attachment anxiety (indicated by a significant Anxiety \times WMD interaction on dot score) as they are now using their resources for the impression-formation. However, this was not the case.

Table 27

Study 3: Hierarchical Multiple Regression Predicting Score on the Dot-Naming Task from Attachment Anxiety with AGI and WMD as Moderators

Predictors	Dot Score		
	Beta		
	Model 1	Model 2	Model 3
Anxiety	-.04	-.04	-.10
AGI		-.06	.02
WMD		-.37***	-.29***
Anxiety × AGI			.10
Anxiety × WMD			-.01
AGI × WMD			-.12
R^2	.04	.37	.39
Change in R^2	.00	.14***	.01

Note. N = 260. Anxiety = Attachment Anxiety. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Attachment avoidance and score on the dot-naming task. Regarding the relationship between attachment avoidance and TFL ratings, we suggested that the higher participants' attachment avoidance, the less comfortable they might be with and receptive to picking up social information. This might have then resulted in being less influenced by the AGI manipulation with regards to their TFL scores. If participants' in the high AGI condition indeed turned their attention away from the social stimuli (the leader) and towards a non-social stimulus (flashing dot) the higher

their attachment avoidance, this should show in a moderating role of AGI between attachment avoidance and dot score. This would mean that participants redirected the imposed accuracy motivation to the dot-naming task rather than the impression formation task (as instructed in the AGI high condition).

As shown in Table 28, the significant main effect for WMD ($\beta = -.36$, $p < .001$, Model 2), reflected the successful WMD manipulation. Participants in the low WMD condition scored higher on the dot-naming task than participants in the high WMD condition. Moreover, there was a significant Avoidance \times AGI interaction ($\beta = -.19$, $p < .05$, Model 3). Figure 19 shows that in the low AGI condition, the higher participants' attachment avoidance, the lower their score on the dot-naming task. However, simple slope analyses indicated that this positive relationship was only marginal significant, $b = -0.18$, $t = -1.75$, $p < .10$. The higher participants' attachment avoidance, the lower their score on the dot-naming task. In the high AGI condition, on the other hand, the relationship between attachment avoidance and participants' dot-score was reversed but simple slope analyses indicated that this negative relationship was not significant, $b = 0.08$, $t = 0.77$, *ns*. The marginal significant and non-marginal simple slopes together with a missing main effect for AGI suggest that this significant Avoidance \times AGI interaction is a cross-over interaction, meaning that the relationship between the attachment avoidance and dot-score changed to the opposite direction based on what AGI condition participants were in without any of the simple slopes being significantly different from zero. As such, there is evidence that the direction of the relationship changed based on the AGI condition, suggesting that there might have been a shift in attention. Ideally, further evidence would fully support our idea that attachment avoidance was positively related to a shift in attention from the leader towards the

dot-naming task when being instructed to get an impression of the leader that is as accurate as possible.

Table 28

Study 3: Hierarchical Multiple Regression Predicting Score on the Dot-Naming Task from Attachment Avoidance with AGI and WMD as Moderators

Predictors	Dot Score		
	Beta		
	Model 1	Model 2	Model 3
Avoidance	-.11†	-.09	-.19†
AGI		-.06	.05
WMD		-.36***	-.28***
Avoidance × AGI			.19*
Avoidance × WMD			-.04
AGI × WMD			-.15
R^2	.11	.38	.41
Change in R^2	.01	.13***	.03†

Note. N = 260. Avoidance = Attachment Avoidance. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

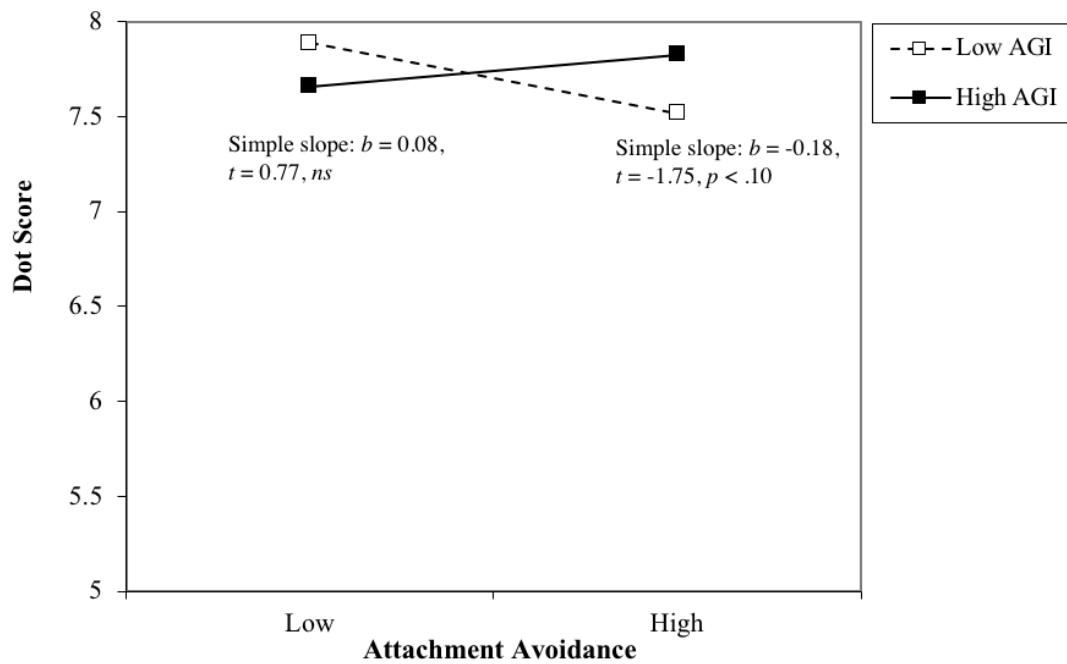


Figure 19. Moderating effect of the AGI manipulation on the relationship between attachment avoidance and the score on the dot-naming task. Possible scores ranging from 0 to 8. Moderation significant at $p < .05$.

Taken together, these results complement findings regarding participants' TFL Ratings. The higher participants' attachment avoidance, the more they appear less receptive to instructions to pay close attention to the leader. However, it appears that it is mainly the *social* element of the instructions they are (consciously or unconsciously) ignoring. This suggests that they are paying indeed closer attention to something, but the higher their attachment avoidance, the more their attention appears to shift from the impression-formation task to the dot-naming task, possibly due to underlying motivational reasons.

Discussion

Overview

The present study aimed to test our hypotheses that the relationship between attachment anxiety or avoidance and participants' memory sensitivity and the transformational leadership ratings they give a non-transformational leader in a video vignette would be mediated by their attentional capacity as well as their accuracy motivation. We tested our theoretical mediations with statistical moderations using a blockage manipulation-of-mediation design (Pirlott & MacKinnon, 2016). We did this by attempting to block the influence of attentional capacity and accuracy motivation by imposing either high working memory demands (WMD) or high accuracy goal importance (AGI) onto participants. However, we suggested that the high WMD condition activated certain behaviours rather than blocking the influence of attentional capacity. With regards to AGI, we wondered whether the manipulation might have been too weak to eliminate all variations in accuracy motivation due to attachment anxiety. Taken together, the role of attentional capacity and accuracy motivation in the relationship between attachment style and schema-driven information processing might be due to the ability of resource activation and re-direction of attention.

Attachment Anxiety and Leadership Perception

Regarding the relationship between attachment anxiety and transformational leadership ratings, when under high working memory demands, the higher participants' attachment anxiety, the more accurate their leadership ratings. Together with participants' performance on the dot-naming task which was not influenced by their degree of attachment anxiety, we suggest that the higher participants' attachment anxiety, the higher their capability to activate additional

attentional capacity under high working memory demands to maintain their level of accuracy in impression formation (potentially driven by higher accuracy motivation). We suggest that participants scoring high on attachment anxiety might have previously acquired a skill to maintain a certain amount of attention towards social stimuli even when faced with additional working memory demands. This process might have been facilitated through a heightened level of accuracy motivation towards person perception, as high attachment anxiety is linked with a chronic hyperactivation of the attachment system (Main, 1990; Mikulincer et al., 2000; Mikulincer et al., 2002, 2003), also leading to minimisation of cognitive, emotional, or physical distance from attachment figure in an overdependent way (Shaver & Hazan, 1993).

As such, participants high in attachment anxiety might have been able to automate the monitoring of the other person which is why this monitoring skill was unaffected by additional working memory demands (cf. automaticity view of emotion regulation, Richards & Gross, 2000 and theory of ironic processes of mental control, Wegner, 1994). Because of the unpredictability of the caregiver, understanding him/her (and later, other people) might have developed to one of the highest priorities for people high in attachment anxiety and made prominent even if attentional resources are limited. Whereas studies by Green-Hennessy and Reis (1998) and Mikulincer (1997) suggest that people high in attachment anxiety have similar high levels of openness to new information and curiosity as people with a secure attachment style, we wonder whether the inferiority of their performance only shows when people are put under high working memory demands.

Regarding the relationship between attachment anxiety and memory sensitivity, there was no indication that this was mediated by attentional capacity or

accuracy motivation. Whereas the measure to assess the degree of memory sensitivity focused on the actual behaviour shown in the video (stimulus based), the measure to assess transformational leadership ratings was based on an anticipation of what the team leader's behaviour might be like when working with him in the near future (based on general impression). For increasing participants' accuracy goal importance, the instructions read "It is extremely important that you make every effort to form an impression of the team leader that is as accurate as possible.", hence focusing on the impression of the leader rather than the actual behaviour. Therefore, the reason why we did not find any indication that attentional capacity or accuracy motivation mediated the relationship between attachment anxiety and memory sensitivity might simply be down to the instructions focusing on a general impression and the measure for memory sensitivity focusing on concrete behaviour. However, more research is needed to confirm this interpretation.

Attachment Avoidance and Leadership Perception

Regarding the relationship between attachment avoidance and memory sensitivity, for participants that were not put under additional working memory demands and where the degree of memory sensitivity could vary freely as a function of attachment avoidance, attachment avoidance was not related to memory sensitivity regarding the behaviour of the leader (i.e., recognising which of the presented behaviours was actually shown by the leader). This result is in opposite to our expectations derived from the stereotype and attachment style literature. Assuming that higher attachment avoidance comes with non-constructive ways of emotion-regulation (Epstein & Meier, 1989; Mikulincer et al., 2003; Shaver & Mikulincer, 2002) that could lead to lower attentional capacity (Richards & Gross, 2000), making schema-driven information processing more likely (Sherman et al.,

2000) we assumed that attachment avoidance would be related to lower memory sensitivity.

Participants who were put under additional working memory demands, on the other hand, our results suggest that this *triggered* attentional capacity differences related to attachment avoidance rather than *blocking* them. As such the higher the attachment avoidance, the higher their memory sensitivity, indicating a more accurate perception of the leader. We suggested that this unexpected result is due to the defense-mechanisms of participants scoring high on attachment avoidance. Whereas they normally block out social information in order to protect themselves (Fraley et al., 2000; Mikulincer et al., 2003), ironically this defense-mechanism breaks down once additional WMD is added (Edelstein & Gillath, 2008; Mikulincer, Dolev, & Shaver, 2004). This might have then heightened the availability of social information to them, resulting in perceiving (probably unintentionally) more information about the leader, leading to more memory sensitivity which was assessed asking for concrete behaviour shown in the video.

This ironic mechanism could also be explained with Wegner's (1994) theory of ironic processes of mental control. According to him, two processes work together in order to control the mind. The monitoring process is looking for the contents that are to be avoided (such as social information) and requires relatively little cognitive capacity. The operating process then blocks out unwanted stimuli detected through the monitoring process. In situations where cognitive capacity is limited (such as in the high WMD condition in the present study), the operating process might fail to function, but the monitoring process might be left unaffected, leading to a higher sensitivity towards the content that was originally intended to be

blocked out (i.e., a breakdown in the defense-mechanism of participants high in attachment avoidance).

Both attachment avoidance and attachment anxiety seem to be positively related to an engagement in the monitoring process of others and potential attachment related threats. For people high in attachment anxiety, this might be due to their need to minimise cognitive, emotional, or physical distance from (originally) their attachment figure (Shaver & Hazan, 1993). For people high in attachment avoidance, this might be due to their need to increase this distance (Cassidy & Kobak, 1988) by turning their attention away from possible attachment system activating stimuli (Mikulincer et al., 2003). Despite a different underlying motivation, this heightened monitoring process might then result in a higher accessibility when additional working memory demands are imposed on participants and resources for the operating process are low.

Unfortunately, results regarding a potential breakdown of a defense-mechanism could not be replicated when looking at participants' transformational leadership ratings. This might again be due to the different nature of the measures (stimulus based for the memory sensitivity measure and impression based for the transformational leadership ratings). As such, the breakdown of the defense-mechanism might only be measurable when focusing on information participants' high in attachment avoidance are trying to block out (i.e., concrete information about leader's behaviour as measured with the memory sensitivity measure).

Instead, it appeared that the higher participants' attachment avoidance, the less receptive they were to the instructions to get an accurate impression of the team leader. As such, when instructed to form an impression of the leader that is as accurate as possible, the higher participants attachment avoidance, the less accurate

their leadership ratings. Together with participants' performance in the dot-naming task (a task not involving social stimuli), we suggest that the higher participants attachment avoidance, the higher their tendency to re-direct their attentional resources to the dot-naming task. We suggest that this is due to their aforementioned tendency to turn their attention away from possible attachment system activating stimuli (Mikulincer et al., 2003) or, in this case, instructions to pay close attention to the leader, in order to protect themselves as their caregivers were consistently unresponsive in the past (Ainsworth et al., 2015). By suggesting that attachment avoidance could act as a moderator, this finding adds to results by Neuberg and Fiske (1987), where participants in the high accuracy condition *generally* engaged in more individuating processes.

Taken together, we found some indirect support that attachment anxiety is related to heightened accuracy motivation. However, the effects of accuracy motivation might only show under conditions where additional working memory demands are imposed upon participants and where attachment anxiety was positively related to the accuracy of leadership ratings. We suggested that this might be due to their ability to activate additional attentional resources. Regarding attachment avoidance, we found some indirect support that the higher participants' attachment avoidance, the higher their tendency to block out social stimuli. This defense-mechanism might break down once additional working memory demands are added, leading to a more accurate perception of the leader. Moreover, attachment avoidance seems to be positively related to the tendency to block out instructions to form an impression of the leader that is as accurate as possible.

Exploratory Findings

In this section, we would like to address general observations. One of them was the negative correlation between attachment anxiety and participants' transformational ILTs about an ideal leader. Whereas a negative relationship was expected for attachment *avoidance*, we would have expected a positive relationship for attachment *anxiety* based on results by Hansbrough (2012). She had suggested that participants scoring high on attachment anxiety saw transformational leadership even when it is not shown, and she explained her findings with a potential link to participants' more transformational ILTs about an ideal leader. However, we could not replicate her finding or suggestion in the present study. One reason for this could be that it is not their transformational ILT that leads participants high in attachment anxiety to see transformational leadership where there is none, but rather their tendency to encode social information more holistically based on the dimensions *warmth* and *competence* (Cuddy, Fiske, and Glick, 2008), two dimensions which might have parallels with the transformational leadership style as well as the parenting style of a secure attachment figure. As such, warmth consists of "good-natured, trustworthy, tolerant, friendly, and sincere" and competence of "capable, skillful, intelligent, and confident" (p. 65, Cuddy, Fiske, and Glick, 2008). Future research is needed to clarify this relationship.

Pre-experimental positive affect significantly predicted participants' accuracy on leadership ratings. The higher the positive affect, the less accurate they were and the more they relied on their ILTs when rating the leader. This is in line with general findings that positive affect makes stereotype-usage more likely (Bless, Schwarz, & Kimmelmeier, 1996).

Unsuccessful Blockage Manipulation-of-Mediation Design

The basic idea of the blockage manipulation-of-mediation design is that a theoretical mediation can be shown with the help of a statistical moderation. Whereas the relationship between the IV, the mediator, and the DV can exist “naturally” in a control condition, the influence of the IV on the DV via the mediator is blocked by creating a state where all participants are, for example, high on the mediator. In our study, we wanted to create the blockage of the variations of attentional capacity due to attachment insecurity by imposing working memory demands on participants and making all participants equally low in attentional capacity. In the case of attachment avoidance and memory sensitivity, however, we assume that this lead to a break-down of their self-control system instead of simply ensuring all participants were low on attentional capacity.

In sum, whereas the idea of blocking the influence of attentional capacity by imposing working memory demands on participants might have worked with participants with average attachment avoidance scores, it was unsuitable for the mediation we were trying to show with regards to attachment avoidance. Their attentional capacity might have already been so limited that imposing additional memory demands then lead to a breakdown of their control system rather than creating an equal state of limited working memory capacity amongst all participants.

Regarding our attempt to block the influence of accuracy motivation by imposing accuracy goal importance on half of our participants, we suggest that this did not work because participants high in attachment avoidance tended to ignore the AGI manipulation, probably again due to their protective self-control system. Regarding participants' attachment anxiety, we wonder whether our manipulation was too weak to increase all participants' level of accuracy motivation to be as high

as the (anticipated) high level of participants high in attachment anxiety in order to remove variations in accuracy motivation due to attachment anxiety. We suspect that the reason why the higher participants attachment anxiety, the less they seemed to be affected by the WMD manipulation was because of the activation of additional resources. As such, we would have expected a three-way interaction of Anxiety \times AGI \times WMD in predicting accuracy of leadership ratings mirroring the activation of additional resources. However, this was not the case which is why we wonder whether we would have needed a stronger AGI manipulation.

Limitations and Strengths

In addition to the unsuccessful blockage manipulation-of-mediation design as intended, there are other limitations to this study. First, according to the literature on blockage manipulation-of-mediation design (e.g., Pirlot and MacKinnon, 2016), our independent variables (here, attachment anxiety and avoidance) should have been manipulated as well to ensure causality between the independent variable and the mediator. We were, however, interested in attachment anxiety and avoidance as a dispositional trait. We saw causality as given, as attachment style is developed early in life and as we measured it on average six days before our actual experiment. Second, we have used an online set-up as well as an online sample for a design that might have been better tested in the laboratory. Results might therefore differ if factors such as environment and equipment were controlled. Although we did stress towards participants that it is important to be in a quiet environment and to finish the task in one go, we cannot rule out that they might have checked their emails or spoken to somebody else whilst doing the study.

Another weakness relates to the rating stimulus (video) we have used with the aim to present a leader that was neither transformational nor transactional.

However, the directive leadership style (as opposed to the participative leadership style; cf. Sauer, 2011) chosen for the present study, as well as the neutral to serious facial expressions of the actor playing the team leader, could have been perceived as rather cold and intimidating, especially for participants high in attachment anxiety. This could have potentially increased non-constructive emotion regulation, as attachment anxiety is associated with heightened monitoring and sensibility of threats (Shaver & Mikulincer, 2002) and a chronic activation of the attachment system (Mikulincer, et al., 2000; Mikulincer, et al., 2002; Mikulincer et al., 2003). As such, and specifically linking attachment style to the decoding of facial expressions, higher attachment anxiety was linked to the tendency to decode anger in other's peoples facial expression (Magai, Distel, & Liker, 1995) as well as a the ability to perceive the onset and offset of facial expressions of emotions earlier than lower levels of attachment anxiety (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006). Future studies investigating the role of attachment style and leader ratings should pay careful attention to and measure the overall impression or pleasantness, and non-verbal cues of the leader presented in a video and ensure that differences in leader ratings are not due to unwanted stimulus effects. Alternatively, two versions of the same team meeting (pleasant vs. unpleasant leader) with the same dialogues could be contrasted to test for the effects of non-verbal communication on participants' leader ratings based on their attachment styles.

Moreover, there are debates regarding the validity and quality of online samples (e.g., Harms & DeSimone, 2015). For the present study, however, we explicitly decided to recruit our participants via *Prolific*. Participants from this platform are said to produce high quality data, be diverse, and attentive (Peer, Brandimarte, Samat, & Acquisti, 2017). Additionally, we administered further

strategies to ensure high quality data. All in all, making use of an online sample to investigate this research question seemed again to be the best solution given our limited resources.

One weakness regarding the interpretability of our results stems from the differentiation between on-line versus memory-based judgments (Hastie & Park, 1986). These two conditions can be created experimentally by either informing the participants about the judgment task before (on-line) or after the stimulus (memory-based). Regarding the present study, one could argue that the low vs. high AGI conditions not only differed regarding their accuracy goal importance, but also with respect to on-line vs. memory-based judgments. In the low AGI condition, participants were only told to “attend to both, the content of the video and the position of the flashing dots” without any indication that they will have to rate the leader specifically, potentially triggering memory-based judgments afterwards. Participants in the high AGI condition, on the other hand, also received the following instructions “It is extremely important that you make every effort to form an impression of the team leader that is as accurate as possible.” This could have given an indication that they will have to judge the leader in particular afterwards (perception-based, on-line judgment). Although we do not think that this would change the interpretation of our results, future research will have to ensure to control for that by amending the instructions for participants accordingly.

Moving on to the strengths of our study, the diversity of our online sample has the advantage that it increases the external validity of our results. Moreover, all the questions were “read out” to the participants and the visual layout of the online survey and experiment was optimised to ensure capturing participants attention as much as possible. The vignette used in our study was pertained to a team meeting

where participants could see the team leader interact with members to yet again increase external validity. Attention questions filtered out inattentive respondents. All in all, we consider our data quality as very high. The experimental set-up adds to the internal validity of our design. Participants' attachment styles and ILTs were assessed around six days in advance to ensure they did not influence the leadership ratings after the experimental task in an undesirable way. Moreover, rather than trying to *measure* the proposed underlying processes, we approached our research question with a design that is unusual in organisational research but from which other researchers can benefit when investigating similar, hard to measure processes. In addition to that, we kept both information sources for rating a leader (i.e., participants' ILTs and the leader stimulus) constant to decrease the amount of alternative interpretations of our results.

Theoretical and Practical Implications

Study 3 adds to the literature on attachment theory and leadership, as well as the social cognition literature in several ways. First, the leadership literature benefits from our contribution as it highlights an important factor (i.e., people's attachment styles) that might influence the degree to which followers rely on their stereotypes about leaders or supervisors when rating their own supervisors. Second, although studies have addressed cognitive processing differences related to attachment styles, the effects of people's attachment style on stereotype use has not been investigated before. This knowledge, however, can have important implications for the literature on stereotype use in general as well as for research into the different expectations people hold about others (called *working models of others* in the attachment theory literature) depending on attachment styles. Attachment styles might not only

influence the content of the working models but also how much or little people rely on them when judging or perceiving others.

Adding to our results from Study 1 and 2, Study 3 yet again emphasises the importance of considering followers' attachment styles when assessing leadership ratings. In addition to that, Study 3 also stresses two other factors that determine whether or not followers might rely on their stereotypes when rating a leader: accuracy goal importance and working memory demands. As such, under high working memory demands, followers high in attachment anxiety might still be perfectly capable to deliver a more accurate rating of a leader compared to followers low in attachment anxiety because of their greater social skills. Having followers high in attachment anxiety might thus be of advantage for this specific task. On the other hand, interventions with the aim to overcome the usage of ILTs and increase the accuracy of leadership ratings in followers, such as emphasising the importance of getting an impression of the leader that is as accurate as possible (cf., Fiske & Neuberg, 1990), might only be successful for followers low in attachment avoidance, as those high in attachment avoidance might ignore such instructions. Instead, frame-of-reference trainings, originally aimed at job performance (Bernardin & Buckley, 1981) as well as addressing implicit theories, might also be applicable to implicit leadership theories and result in more accurate leadership ratings.

Moreover, whereas we focused on ILTs and leadership ratings in this study, similar effects could be possible for supervisors having to rate their followers. Some might rely more on their implicit followership theories than others, depending on their degree of attachment anxiety or avoidance and depending on whether or not they are under high working memory demands or motivated to be accurate in their ratings.

Using a blockage manipulation-of-mediation design to tackle this problem in an unusual way might inspire other leadership researchers to investigate their research question in a similar way. Likewise, researchers investigating stereotype usage might find our ideas helpful, too. Even though this design did not work the way it was intended, we nevertheless obtained valuable results on the interplay of attachment style, accuracy goal importance, working memory demands, and leadership perception.

Future Research

Future research will need to further investigate the role of accuracy motivation in the relationship between attachment style and leadership ratings. We suspect that our AGI manipulation was not strong enough to mimic the high accuracy motivation of high attachment anxious participants, so we would advise to work on a stronger manipulation. Adding to suggestions by Inzlicht and Schmeichel (2012) to include attention and motivation when looking at ego-depletion effects, our results suggest that people high in attachment anxiety have indeed the ability to activate additional attentional resources when faced with (additional) working memory demands. Whether this is in fact due to their heightened accuracy motivation warrants further research.

Another interesting aspect to look at would be how AGI and WMD manipulations influence followers' leadership ratings depending on the information processing stage (i.e., encoding vs. retrieval vs. judgment) or different stages of the stereotyping process (categorisation, stereotype activation, stereotype application, and individuation and/or stereotype inhibition/correction; Sherman et al., 2000). Future research could also explicitly differentiate between conditions for on-line versus memory-based judgments (Hastie & Park, 1986). As such, one could create a

condition in which memory-judgment is more likely, e.g., by showing participants the video about the team meeting without prior instructions to pay attention to the leader but then asking them to judge the leader or recognise behaviour. In the on-line condition, all participants could be prepared for the subsequent rating tasks, therefore creating anticipation.

In an attempt to increase external validity, one could look at how employees react to an accuracy goal importance manipulation given before meeting their new team leader or supervisor. Working memory demands could be recreated by imposing an additional task (e.g., such as writing meeting minutes) onto followers whilst being in the first team meeting.

Chapter 4: General Discussion

Summary

This thesis investigated factors that influence the accuracy of leadership ratings. More specifically, it focused on participants' attachment style as a person-level influence on leadership perception. This was inspired by previous research that suggested a bias in leadership perception due to attachment insecurity and hence differences in implicit leadership theories (Davidovitz et al., 2007; Hansbrough, 2012). Whereas former research implied a mediating role of implicit leadership theories in the relationship between attachment style and leadership perception, we proposed that differences in attachment style lead to differences in information processing strategies, leading to differences in the *degree* to which participants rely on their ILTs when perceiving and rating a leader. This expectation was based on the assumption that differences in attachment style lead to differences in emotion regulation and therefore differences in self-control resources (in the revised model: to differences in attentional capacity and accuracy motivation). It was tested in a variety of ways using experimental vignettes (Study 1), supervisor ratings (Study 2), and experimental manipulations of accuracy motivation and memory demands (Study 3).

Main Findings

Results regarding attachment avoidance were inconsistent in Study 1 (rating a fictitious leader) but consistent in Study 2 (rating the own supervisor): The higher participants' attachment avoidance, the more they relied on their ILTs when rating the presented their supervisor. This moderating relationship could have possibly also been due to an actual avoidance of the supervisor. This might have then reduced the information about the supervisor available to them, hence increasing the need to rely on their ILTs.

The moderating role of attachment anxiety was inconsistent in Study 1 and non-existing in Study 2. In Study 1, some results suggested that the *higher* participants' attachment anxiety, the *less* they relied on their ILTs when rating the presented leader. This was especially the case when being presented to the transformational leader, where there was information consistency between the rating stimulus and the measured ILTs. Hence, higher transformational ratings could have been due to the transformational vignette or due to a greater reliance on transformational ILTs when rating the leader.

The inconsistent perceptual biases found due to attachment anxiety inspired us to revise our theoretical model and investigate the potential mediating role of attentional capacity and accuracy motivation in Study 3. Results from Study 3 suggest that the higher participants' attachment anxiety, the more they are capable of maintaining an accurate impression of the presented leader when put under high working memory demands. We suggested that this might be due to an ability to activate additional attentional capacity, driven by an underlying accuracy motivation. This would be in line with the notion that accuracy motivation can counteract the use of stereotypes in judgment (Macrae & Bodenhausen, 2000, Fiske, 1998). Whereas previous research suggested that attachment anxious people are as open to new information and as curious as attachment secure people (Green-Hennessy & Reis, 1998; Mikulincer, 1997), we wonder whether their heightened accuracy motivation particularly shows under high working memory demands. A positive relationship with accuracy motivation might also explain why attachment anxiety did not moderate the relationship between ILTs and leadership perception in Study 2. Here, the lack of attentional capacity might have been counteracted by their heightened levels of accuracy motivation.

Regarding attachment avoidance, results from Study 3 suggest that it is negatively related to participants' receptiveness to social stimuli, leading to less accurate leadership perception the higher the attachment avoidance when instructed to form an accurate impression of the leader. Another interesting finding was that once working memory demands were imposed onto participants, a positive relationship between attachment avoidance and memory sensitivity emerged, possibly due to an ironic breakdown of their defense-mechanism (Edelstein & Gillath, 2008; Mikulincer, Dolev, & Shaver, 2004). This might have resulted in an inability to block out social stimuli and as a consequence, participants unintentionally paid *more* attention to the leader presented in the video. We also see this as an indirect indicator for a negative relationship between attachment avoidance and attentional capacity. As such, we think that the moderating role of attachment avoidance in the relationship between ILTs and leadership perception found in Study 1 and 2 is due to their reduced capacity to attend to social stimuli. However, it might also have been caused by the actual avoidance of their supervisor.

To summarise, the present three studies found perceptual biases in leadership perception due to attachment anxiety or avoidance. This might be caused by a lack of attentional capacity and increased accuracy motivation the higher participants' attachment anxiety, and a lack of attentional capacity for social stimuli and the actual avoidance of their supervisor the higher participants' attachment avoidance.

Limitations and Strengths

The usage of "convenience samples" (such as Amazon MTurk or Prolific) could be seen as one of the main limitations and the advantages and disadvantages of doing so has been in researchers' centre of attention recently. Although

“convenient” does not necessarily mean “bad”, it is nevertheless important to be aware of the range restrictions and omitted variable biases of each sampling method (Landers & Behrend, 2015). Harms and DeSimone (2015) strongly question the usefulness of online samples (such as Amazon MTurk), also because little is known about the real characteristics of the participants regarding employment as well as how much attention those participants actually pay to the online survey. Regarding the latter criticism, Ramsey, Thompson, McKenzie, Rosenbaum (2016) compared how much attention participants from different samples paid to the instructions and found that participants from Amazon MTurk did far better than students on-campus or students off-campus. The researchers conclude that those results increased their confidence in using online samples. Comparing different online samples, participants from Prolific were found to produce high quality data, be diverse, and attentive (Peer et al., 2017). Despite this evidence, we would recommend replicating the findings from our studies using different samples, such as a student sample, or an organisational sample.

Regarding our third study, the blockage manipulation-of-mediation design did not work completely as anticipated. However, it nevertheless allowed for conclusions relevant to our research questions, such as a potential strong negative relationship between attachment avoidance and attentional capacity which might have been the reason for a breakdown of the defense-mechanism the higher participants' attachment avoidance.

Regarding Study 1 and 2, assessing predictor and criterion variables at the same point in time and thus creating a potential source of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) is one of the main limitations of these studies. This could have artificially increased the correlation between these

variables. Likewise, an item priming effect could have occurred. As such, measuring participants' implicit leadership theories before presenting participants to the written vignette (Study 1) or the leadership ratings measures (Study 1 and 2) could have made these traits and behaviours more salient to participants, thus again creating an inflated correlation with the dependent variables. According to Evans (1985), however, correlated error cannot create artificial interactions, and it was interactions we were interested in in all three studies.

Nevertheless, in an explicit attempt to minimise common method bias and therefore representing one of the strengths of our research, in Study 3, we had explicitly separated trait measures from the experimental part of the study by six days on average. Another strength of our research was the use of two very different experimental designs (Study 1 and Study 3). Experimental designs tend to be underutilised in organizational research according Highhouse (2009). This was buttressed by a field study (Study 2) that asked participants to rate their own supervisors, thus increasing external validity. Moreover, our studies were conducted with both an American/Indian as well as a British sample. In all three samples, participants were from various backgrounds, yet again increasing external validity as well as the generalisability of our results.

Theoretical and Practical Implications

The current work shifts the attention to the *use* rather than *content* of ILTs, and shows that ILT use depends on attachment style. More specifically, the focus of this work was on how differences in attachment styles might lead to differences in information processing *strategies* and thus differences in the degree of relying on stereotypes when judging a leader or supervisor. Therefore, this work contributes to research focusing on ILTs as well as stereotype usage in general and emphasises the

importance of considering participants' attachment styles in ILT research. It also addresses underlying mechanisms that explain perceptual biases due to attachment insecurity. Our results can be useful for researchers focusing on leadership perception, but also for those interested in social perception differences due to attachment style, as well as those investigating the role of stereotypes in person perception.

There are several practical implications. For example, employees' ratings about their supervisors could depend on their ILTs and attachment styles, and whether they are currently facing additional working memory demands or received an external motivation to be accurate in their ratings. The same could apply for managers rating their employees and basing their ratings on their implicit followership theories (IFTs) - either more or less, depending on their attachment style. This might not only be limited to the concept of transformational leadership but could also apply to prejudice towards female leaders (due to the incongruence between the female gender role and leadership roles, e.g., Eagly & Karau, 2002) or certain ethnic minorities in the workplace. As such, employees high in attachment avoidance might base their ratings regarding the leadership competency of their female managers more on their expectations about women (which are incongruent to the leadership role), potentially resulting in lower leadership ratings. Employees high in attachment anxiety, on the other hand, might feel more motivated to base their ratings on the actual performance. These effects might be amplified in new leader-follower-relationships as well as in distant leadership, where attributions are more likely (Shamir, 1995) compared to established relationships or close leadership. Providing employees in all positions with appropriate training to become aware of

their attachment style as well as resulting perceptual biases might help to counteract potential negative effects.

Moreover, the degree of power or status of the leader or follower could influence the degree to which followers or leaders engage in stereotyping in the workplace. For example, people with more power are said to be more vulnerable to stereotyping due to various reasons such as attention overload or lack of willingness to attend (Fiske, 1993) and research found that subordinates paid more attention to individuating information compared to their managers (Guinote & Phillips, 2010). Applied to the findings of the current research, this could mean that the moderating role of attachment avoidance might be especially relevant for high-power managers or leaders. As such, the relationship between attachment avoidance and reliance on IFTs/ILTs might be even stronger in high-power leaders compared to low-power leaders or followers.

Future Research

Future research should try to replicate our findings and further investigate the role of attentional capacity and accuracy motivation. For example, did the additional working memory demands really lead to a breakdown in defense-mechanisms for participants high in attachment avoidance or might there be a better explanation for their more accurate leadership ratings in this condition? What ILTs influence people's leadership perception more, ILTs about a typical or an ideal leader? Is attachment anxiety indeed related to the ability to activate additional attentional resources?

Moreover, one could address the possibility of counteracting perceptual biases in leadership ratings due to attachment insecurity by repeated security priming (subliminal and supraliminal). Gillath, Selcuk, and Shaver (2008) concluded that

this intervention could lead to a higher sense of security regardless of the person's dispositional attachment style. Future studies would need to investigate whether temporarily activating participants' attachment security is strong enough to result in controlled social information processing and how this intervention could be applied in practice. Would security priming reduce high accuracy motivation associated with high attachment anxiety, leading to less reliance on stereotypes when rating the supervisor?

This aspect becomes even more relevant when considering that the transformational leadership style has been associated with a secure attachment figure. For example, Popper, Maysel, and Castelnovo (2000) found a positive correlation between ratings of attachment security (assessed both via self-report and other-report) and transformational leadership (again, assessed both via self-report and other-report), but not transactional leadership, indicating that a secure attachment style is not merely associated with any positively rated leadership style. Therefore, other questions could be whether a transformational leader evokes lower accuracy motivation in attachment anxious followers. Or whether a transformational leader simply counteracts limited attentional capacity, resulting in an even more accurate perception of the supervisor. These and other questions could be of interest for servant leadership as well, which specifically tries to address follower needs (van Dierendonck, 2010).

Addressing the role of power in leaders and followers, future research could test or control for the (potentially moderating) role of power when investigating the link between attachment style and reliance on IFTs or ILTs when rating a follower or leader by measuring or manipulating participants' degree of power (Wisse & Rus, 2012).

In Study 3 and in line with research on affect and information processing (Bless et al., 1996), the higher participants' pre-experimental positive affect, the less accurate participants' leadership ratings. Moreover, research suggests that negative affect is related to more controlled information processing (as opposed to automatic information processing) such as elaborating individuating information about a person rather than engaging in stereotyping (e.g., Bless et al., 1996). As such, with attachment insecurity being associated with non-constructive emotion regulation strategies (Mikulincer & Shaver, 2007) and negative mood (Wei et al., 2005), and research linking the priming of secure base representation to positive affective reactions to neutral stimuli (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001), one could argue that there should be a *negative* relationship (as opposed to a positive relationship, as argued in the present research) between attachment insecurity and reliance on stereotypes, possibly mediated by negative affect. As such, future research could contrast these two views, investigate potential interaction effects, and expand on both theoretical models in order to provide a more comprehensive understanding of the relationship between attachment styles, affect (regulation), attentional capacity, and information processing.

External validity could be increased by investigating real work groups. Whereas this might be hard to achieve in an organisational setting, focusing on small student groups in seminars or project groups in organisations might be more feasible. If one wanted to keep the influence of the leader constant, virtual work groups where leader responses are standardised or recorded in advance might be a better option. Future studies could also ask participants to visualise and write about their supervisor first before rating him or her to clearly activate the leadership category. This might then evoke certain emotions or thoughts in participants (especially in

those high in attachment anxiety), potentially leading to cognitive load and therefore to stronger perceptual biases the higher participants' attachment anxiety or avoidance.

Conclusion

In their conceptual paper, Hansbrough et al. (2015) summarised what factors can influence the accuracy of follower leadership ratings as well as the degree to which individuals rely on their ILTs when giving leadership ratings. We see our paper as a valuable addition to their thoughts and encourage other researchers to take into account participants' ILTs of an ideal as well as typical leader, their use of ILTs in social perceptions, their attachment styles, as well as their motivation when researchers investigate the accuracy of follower leadership ratings.

Although well recognised in personality research, attachment theory still has not gained enough attention in workplace research (Harms, 2011). We are, however, delighted to see more and more leadership researchers including attachment style in their work. Being just at the beginning of realising how people's attachment style influences their interpersonal perception, we hope that we could inspire other colleagues to follow us on this journey.

Appendices

Appendix A. Study 1: Leadership Vignettes.

Transactional Leadership Vignette

Please imagine that you are in the following situation:

You are just starting with a 3-month trainee program in a big company that produces paper (BKC). Together with other trainees and employees of this company, you are going to work on a current project called “Paper for People”. The CEO who is going to lead this project himself holds a short speech to welcome you and the other trainees and provides an introduction into the project. Here is what he says:

“Good morning, Ladies and Gentlemen. Today is the kick-off of BKC’s “Paper for People” project. We have a tight deadline and we need to be finished in 2 months. I expect you to be ready to go and flexible as far as your working hours are concerned. Of course, we will pay for any overtime you may need to work. If there are any questions or problems during this project, ask me directly and I will take care of them. If there are any delays, I will help you find a way to meet the deadline. Since we don’t have any time to waste, I’m making it my job to control that we are within the time schedule. Also, I am going to check regularly whether we are meeting our quality standards. We can only keep on schedule if we detect any deviations as early as possible. I have worked out a plan of what needs to be done, what the deadlines are, and who is responsible for what. If I am satisfied with your performance, there will be a bonus for you. Now, before we start, let me give you some technical background that will be important for the project.

About 80% of our jobs are printed on high-grade, machine-coated paper while the remainders are printed on high-grade, long-grain paper that is similar to what most people use in copy machines. Because our business revolves around paper for the pages, and cardboard for the binders, I would like to tell you a little bit about the process of making paper. The process begins with trees. After bark is removed, logs are fed into a “chipper” which cuts the logs into wood chips. These chips are then ground up using water and an abrasive stone. At this stage, the ground-up chips are called “mechanical pulp”. Next, the pulp undergoes mild chemical treatment, usually consisting of a sodium sulphite solution buffered with sodium carbonate. These chemicals are called the “cooking liquor”. The pulp is cooked in the liquor under high temperatures and pressures. The cooking process eliminates the noncellulose fibers from the wood components. Next, the pulp is bleached to produce white fibers. After

the bleaching is complete, the pulp fibers are washed to remove chemicals and impurities. They are then given a mechanical treatment called “refining”, which makes the fibers stronger. Rosin and alum are added to increase water resistance so that the paper is suitable for pen-and-ink writing. At this stage, pigments and dyes are added if colored paper is desired. The machine drains the water using suctioning devices as the fibers go through. The result is a wet web of paper that is carried on a conveyor belt to a pressing machine that smooths and dries the paper. By now, the paper is over 20 ft. wide and on large rolls. If desired, coating materials are added that produce a smooth or special surface. It is ready to be cut to size and finished for shipment. The rolls are trimmed, sorted, counted, and packaged. The paper is then transported to the customer, in this case, BKC Printing.

But now I am going to explain the first steps...”

Transformational Leadership Vignette

Please imagine that you are in the following situation:

You are just starting with a 3-month trainee program in a big company that produces paper (BKC). Together with other trainees and employees of this company, you are going to work on a current project called “Paper for People”. The CEO who is going to lead this project himself holds a short speech to welcome you and the other trainees and provides an introduction into the project. Here is what he says:

“Good morning, Ladies and Gentlemen. Today is the kick-off of BKC’s “Paper for People” project. With this enterprise we can set an industry milestone for the protection of ecological resources. This project is a real challenge for BKC and will require your complete dedication and effort. I have picked you to participate in this project because you have the necessary qualifications and because I am convinced that you will give your best. As you participate in this innovative enterprise, you will gain valuable experience for your personal and professional careers. I expect you to take the initiative and to act independently, to rise to the challenge and to solve problems with your team. I am available whenever you need my assistance or advice. I will spend time on training and coaching with you to help you solve any problem you may encounter. It is of great importance for BKC and for me personally that “Paper for People” will be a success. If each of you gives his or her best efforts, we will all be

proud of what we have achieved. With this project, BKC will further increase our high standards of quality for our customers.

At BKC, we make a pledge that our customers will receive high-quality printing and binding. Let me explain my vision for BKC. This vision describes my long-term and ideal goals for BKC- it is the direction we will be heading well into the next century. From the first day of business, I have prided myself on the fact that BKC strives to give the customer a quality product. In the early days of the company when I had only a handful of employees, I would often help assemble the binders on large orders. One time we had completed an entire order when the customer called and told us that they had rewritten a set of pages. They needed us to insert the new pages right away. We were under a lot of pressure with other orders, so I explained to my employees that BKC is here to assemble quality products and that we will do whatever the customer wants. The customer was amazed that we made the changes so quickly and accurately. In fact, just a few months ago, a large order of 30,000 binders was due to be shipped out one Friday afternoon. While packing the binders in boxes, a supervisor found that many of the binders had errors. Well, the supervisor got together with the binder employees and they decided that they would work into the night and even come in over the weekend to fix the mistakes. They made sure that the binders “meant quality” ...To sum up in a vision statement “BKC is bound for quality!” ... I know that this task is pretty difficult, but I really think that you can do well. It has been my experience that business students like yourselves pick up the task pretty quickly and are able to turn out the high-quality binders that BKC is known for. We’re counting on you and I think you’ll do a super job.

But now I am going to explain the first steps...”

Appendix B. Study 1 and 2: Primary Measures

General Leadership Traits Expected From a Typical Leader (Epitropaki & Martin, 2004; Offermann et al., 1994)

Instructions: Please indicate how characteristic you think each of the following traits is for *a typical leader*.

1	2	3	4	5	6	7	8	9
Not at all characteristic							Extremely characteristic	

1. Understanding
2. Helpful
3. Sincere
4. Intelligent
5. Knowledgeable
6. Clever
7. Educated
8. Dedicated
9. Motivated
10. Hard-working
11. Energetic
12. Strong
13. Dynamic
14. Domineering
15. Pushy
16. Manipulative
17. Loud
18. Selfish
19. Conceited
20. Masculine
21. Male

Transformational Behaviour Expected From a Typical Leader: Transformational Leadership Behavior Inventory (Podsakoff, Mackenzie, & Moorman, 1990)

Instructions: Please indicate how much you agree or disagree with each statement.

A typical leader...

1 2 3 4 5 6 7

Strongly
Disagree

Strongly
Agree

1. Has a clear understanding of where we are going.
2. Paints an interesting picture of the future for our group.
3. Is always seeking new opportunities for the organization.
4. Inspires others with his/her plans for the future.
5. Is able to get others committed to his/her dream.
6. Leads by “doing” rather than simply by “telling”.
7. Provides a good model for me to follow.
8. Leads by example.
9. Fosters collaboration among work groups.
10. Encourages employees to be “team players”.
11. Gets the group to work together for the same goal.
12. Develops a team attitude and spirit among employees.
13. Shows us that he/she expects a lot from us.
14. Insists on only the best performance.
15. Will not settle for second best.
16. Acts without considering my feelings.
17. Shows respect for my personal feelings.
18. Behaves in a manner thoughtful of my personal needs.
19. Treats me without considering my personal feelings.
20. Challenges me to think about old problems in new ways.
21. Asks questions that prompt me to think.
22. Has stimulated me to rethink the way I do things.
23. Has ideas that have challenged me to re-examine some of basic assumptions about my work.

General Leadership Traits Perceived in the Presented Leader (Epitropaki & Martin, 2004; Offermann et al., 1994)²⁰

Instructions: Please indicate how characteristic you think each of the following traits is for *the presented leader*.

1	2	3	4	5	6	7	8	9	
Not at all characteristic									Extremely characteristic
1. Understanding									
2. Helpful									
3. Sincere									
4. Intelligent									
5. Knowledgeable									
6. Clever									
7. Educated									
8. Dedicated									
9. Motivated									
10. Hard-working									
11. Energetic									
12. Strong									
13. Dynamic									
14. Domineering									
15. Pushy									
16. Manipulative									
17. Loud									
18. Selfish									
19. Conceited									
20. Masculine									
21. Male									

²⁰ For Study 2, participants rated “My supervisor” instead of “The presented leader”.

Behaviour Perceived in the Presented Leader: Transformational Leadership Behavior Inventory (Podsakoff, Mackenzie, & Moorman, 1990)²¹

Instructions: Please indicate how much you agree or disagree with each statement.

The presented leader...

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. Has a clear understanding of where we are going.
2. Paints an interesting picture of the future for our group.
3. Is always seeking new opportunities for the organization.
4. Inspires others with his/her plans for the future.
5. Is able to get others committed to his/her dream.
6. Leads by “doing” rather than simply by “telling”.
7. Provides a good model for me to follow.
8. Leads by example.
9. Fosters collaboration among work groups.
10. Encourages employees to be “team players”.
11. Gets the group to work together for the same goal.
12. Develops a team attitude and spirit among employees.
13. Shows us that he/she expects a lot from us.
14. Insists on only the best performance.
15. Will not settle for second best.
16. Acts without considering my feelings.
17. Shows respect for my personal feelings.
18. Behaves in a manner thoughtful of my personal needs.
19. Treats me without considering my personal feelings.
20. Challenges me to think about old problems in new ways.
21. Asks questions that prompt me to think.
22. Has stimulated me to rethink the way I do things.
23. Has ideas that have challenged me to re-examine some of basic assumptions about my work.

²¹ For Study 2, participants rated “My supervisor” instead of “The presented leader”.

Attachment Style: Experience of Close Relationships Scale (Brennan, Clark, & Shaver, 1998)

Instructions: The following statements concern **how you feel in close relationships**. The statements focus on how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it.

1	2	3	4	5	6	7
Strongly Disagree			Neutral/ Mixed			Strongly Agree

1. I prefer not to show a partner how I feel deep down.
2. I worry about being abandoned.
3. I am very comfortable being close to romantic partners.
4. I worry a lot about my relationships.
5. Just when my partner starts to get close to me I find myself pulling away.
6. I worry that romantic partners won't care about me as much as I care about them.
7. I get uncomfortable when a romantic partner wants to be very close.
8. I worry a fair amount about losing my partner.
9. I don't feel comfortable opening up to romantic partners.
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
11. I want to get close to my partner, but I keep pulling back.
12. I often want to merge completely with romantic partners, and this sometimes scares them away.
13. I am nervous when partners get too close to me.
14. I worry about being alone.
15. I feel comfortable sharing my private thoughts and feelings with my partner.
16. My desire to be very close sometimes scares people away.
17. I try to avoid getting too close to my partner.
18. I need a lot of reassurance that I am loved by my partner.
19. I find it relatively easy to get close to my partner.
20. Sometimes I feel that I force my partners to show more feeling, more commitment.

21. I find it difficult to allow myself to depend on romantic partners.
22. I do not often worry about being abandoned.
23. I prefer not to be too close to romantic partners.
24. If I can't get my partner to show interest in me, I get upset or angry.
25. I tell my partner just about everything.
26. I find that my partner(s) don't want to get as close as I would like.
27. I usually discuss my problems and concerns with my partner.
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
29. I feel comfortable depending on romantic partners.
30. I get frustrated when my partner is not around as much as I would like.
31. I don't mind asking romantic partners for comfort, advice, or help.
32. I get frustrated if romantic partners are not available when I need them.
33. It helps to turn to my romantic partner in times of need.
34. When romantic partners disapprove of me, I feel really bad about myself.
35. I turn to my partner for many things, including comfort and reassurance.
36. I resent it when my partner spends time away from me.

Appendix C. Study 1 and 2: Secondary Measures

Social Desirability Short Form X1 (Strahan & Gerbasi, 1972)
(mixed with the items of the *Experience of Close Relationships Scale*)

1. I like to gossip at times.
2. There have been occasions when I took advantage of someone.
3. I'm always willing to admit it when I make a mistake.
4. I always try to practice what I preach.
5. I sometimes try to get even rather than forgive and forget.
6. At times I have really insisted on having things my own way.
7. There have been occasions when I felt like smashing things.
8. I never resent being asked to return a favor.
9. I have never been irked when people expressed ideas very different from my own.
10. I have never deliberately said something that hurt someone's feelings.

Appendix D. Study 1 and 2: Measures Assessed but not Reported

Self-Control Scale (Tangney et al., 2004)

Instructions: Using the scale provided, please indicate how much each of the following statements reflect how you are in general.

1	2	3	4	5
Not at all				Very much

1. I am good at resisting temptation.
2. I have a hard time breaking bad habits.
3. I am lazy.
4. I say inappropriate things.
5. I never allow myself to lose control.
6. I do certain things that are bad for me, if they are fun.
7. People can count on me to keep on schedule.
8. Getting up in the morning is hard for me.
9. I have trouble saying no.
10. I change my mind fairly often.
11. I blurt out whatever is on my mind.
12. People would describe me as impulsive.
13. I refuse things that are bad for me.
14. I spend too much money.
15. I keep everything neat.
16. I am self-indulgent at times.
17. I wish I had more self-discipline.
18. I am reliable.
19. I get carried away by my feelings.
20. I do many things on the spur of the moment.
21. I don't keep secrets very well.
22. People would say that I have iron self-discipline.
23. I have worked or studied all night at the last minute.
24. I'm not easily discouraged.
25. I'd be better off if I stopped to think before acting.

26. I engage in healthy practices.
27. I eat healthy foods.
28. Pleasure and fun sometimes keep me from getting work done.
29. I have trouble concentrating.
30. I am able to work effectively toward long-term goals.
31. Sometimes I can't stop myself from doing something, even if I know it is wrong.
32. I often act without thinking through all the alternatives.
33. I lose my temper too easily.
34. I often interrupt people.
35. I sometimes drink or use drugs to excess.
36. I am always on time.

Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988)

Instructions: Below, please find words that describe different feelings and emotions. Read each item and indicate to what extent you generally feel this way, that is, how you feel on average.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

- | | |
|------------------|----------------|
| 1. Interested | 2. Irritable |
| 3. Distressed | 4. Alert |
| 5. Excited | 6. Ashamed |
| 7. Upset | 8. Inspired |
| 9. Strong | 10. Nervous |
| 11. Guilty | 12. Determined |
| 13. Scared | 14. Attentive |
| 15. Hostile | 16. Jittery |
| 17. Enthusiastic | 18. Active |
| 19. Proud | 20. Afraid |

Appendix E. Study 1 and 2: Additional Correlation Tables

Table 29
Study 1: Means, Standard Deviations, Alphas, and Correlations of the Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	-																
2. Gender	.10	-															
3. Nationality	.29***	.24***	-														
4. Positive Affect	-.16*	-.14*	-.43***	(.90)													
5. Negative Affect	-.23***	-.00	-.19**	-.06	(.91)												
6. Social Desirability	.23***	.01	.05	.19**	.32***	(.71)											
7. Anxiety	-.28***	-.06	-.25***	.01	.50***	-.49***	(.94)										
8. Avoidance	-.03	.03	.03	-.16*	.42***	-.37***	.40***	(.95)									
9. Self-Control	.27***	.06	.06	.12	.50***	.67***	-.56***	-.41***	(.94)								

Note. N = 218. Values given in brackets are reliabilities. Nationality: 0 = Not American, 1 = American. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance.

* p < .05, two-tailed. ** p < .01, two-tailed. *** p < .001, two-tailed.

(continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
10. ILT Traits (UWC)	-.09	.01	-.17*	.35***	-.18*	.11	-.12	-.32***	.22***	(.90)							
11. ILT Behaviour (UWC)	-.03	.01	.00	.22**	-.23***	.12	-.16*	-.30***	.22***	.71***	(.95)						
12. Trait Ratings (UWC)	-.05	-.04	-.20**	.31**	-.09	.02	-.02	-.28***	.16*	.56***	.51***	(.92)					
13. TFL Behaviour Ratings (UWC)	-.02	-.08	-.10	.25***	-.16*	.05	-.05	-.29***	.12	.45***	.48***	.85***	(.95)				
14. Condition Vignette	-.06	-.05	-.04	.10	-.02	-.04	.03	.07	-.12	-.09	-.04	.07	.17*	-			
15. Work experience in organisation	.50***	-.05	.18**	-.10	-.20	.19**	-.24***	-.12	.18**	.01	.03	.01	.09	-.05	-		
16. Work experience with a supervisor	.79***	.11	.45***	-.26***	-.20**	.10	-.23***	.01	.16*	.03	-.07	.03	.01	-.07	.51***	-	
17. Working hours per week	-.02	-.22**	-.10	.11	.04	.06	-.01	.03	-.01	-.04	.02	.00	-.01	-.02	.10	.01	-
M	33.77	1.46	0.66	3.60	1.60	4.43	3.49	2.69	3.48	0.00	0.00	0.00	0.00	0.50	5.56	10.89	42.29
SD	10.06	0.50	0.48	0.77	0.67	0.90	1.27	1.12	0.65	0.89	0.80	0.90	0.81	0.50	5.08	9.11	7.51

Note. N = 218. Values given in brackets are reliabilities. Nationality: 0 = Not American, 1 = American. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance. UWC = Unit weighted composite variable. ILT = Implicit Leadership Theory. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour. TFL = Transformational. Vignette: 0 = Transactional Vignette, 1 = Transformational Vignette.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table 30

Study 2: Means, Standard Deviations, Alphas, and Correlations of the Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	-															
2. Gender	.17*	-														
3. Nationality	.28***	.19**	-													
4. Positive Affect	-.14*	-.16*	-.42***	(.93)												
5. Negative Affect	-.22**	.003	-.23***	-.01	(.91)											
6. Social Desirability	.20**	.04	.05	.19**	-.31	(.67)										
7. Anxiety	-.17*	.11	-.30***	.04	.39***	-.36***	(.93)									
8. Avoidance	-.12	.01	-.06	-.10	.35***	-.28***	.38***	(.94)								
9. Self-Control	.28***	-.01	.16*	.16*	-.43***	.51***	-.55***	-.36***	(.91)							

Note. N = 217. Values given in brackets are reliabilities. Nationality: 0 = Not American, 1 = American. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

(continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10. ILT Traits (UWC)	-.10	.03	-.14*	.38***	-.11	.16*	.07	-.13*	.09	(.87)						
11. ILT Behaviour (UWC)	-.07	.04	.05	.27***	-.17*	.20**	-.03	-.19**	.13	.75***	(.95)					
12. Trait Ratings (UWC)	-.08	-.01	-.22**	.38***	-.15*	.12	-.02	-.08	.11	.44***	.30***	(.95)				
13. TFL Behaviour Ratings (UWC)	-.09	.03	-.16*	.31***	-.13	.12	-.03	-.11	.11	.42***	.43***	.89***	(.97)			
14. Work experience in organisation	.53***	-.03	.12	.03	-.14*	.14*	-.24***	-.20**	.28***	.04	.06	-.04	-.07	-		
15. Work experience with current supervisor	.41***	-.01	.04	.04	-.10	.17*	-.24***	-.14*	.25***	.03	.03	.08	.04	.70***	-	
16. Working hours per week	-.11	-.01	-.09	.20**	-.17*	-.12	.09	.07	-.07	.12	.11	.05	.03	.02	-.05	-
M	34.68	1.43	0.65	3.57	1.60	4.39	3.50	2.80	3.51	0.00	0.00	0.00	0.00	5.75	3.60	42.64
SD	11.15	0.50	0.48	0.85	0.65	0.85	1.24	1.16	0.56	0.87	0.82	0.94	0.86	5.53	3.96	9.31

Note. N = 217. Values given in brackets are reliabilities. Nationality: 0 = Not American, 1 = American. Anxiety = Attachment Anxiety. Avoidance = Attachment Avoidance. UWC = Unit weighted composite variable. ILT = Implicit Leadership Theory. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour. TFL = Transformational.
 * p < .05, two-tailed. ** p < .01, two-tailed. *** p < .001, two-tailed.

Appendix F. Study 1: Additional Regression Models, Controlling for the Other Independent Variable

Table 31

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits with Attachment Anxiety as Moderator

Predictors	Trait Ratings						
	Beta						
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
ILT Behaviour	.51***	.51***	.22**	.23**	.23**	.23**	.26**
Vignette		.09	.12*	.12*	.11†	.11	.09
ILT Traits			.42***	.42***	.43***	.46***	.43***
Anxiety				.10	.19*	.19*	.11
Anxiety × ILT Traits					-.11†	-.11†	.05
Anxiety × Vignette					-.05	-.06	.02
ILT Traits × Vignette						-.05	-.03
Anxiety × ILT Traits × Vignette							-.21*
R^2	.26	.27	.35	.36	.37	.37	.39
Change in R^2	.26***	.01	.09***	.01	.01	.00	.02*

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory. † p < .10. * p < .05. ** p < .01. *** p < .001.

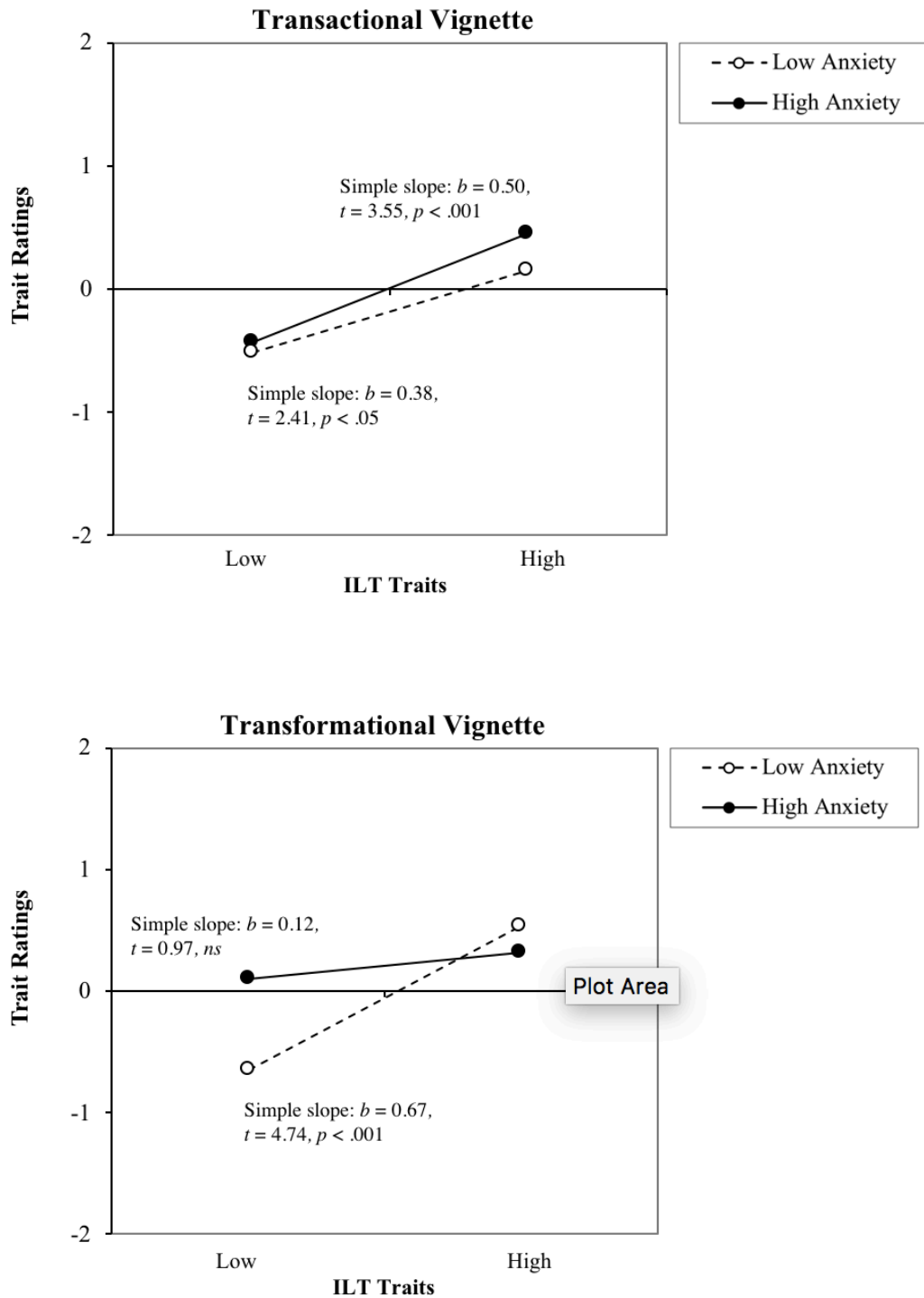


Figure 20. Study 1: Moderating role of Attachment Anxiety on the relationship between ILT Traits and Trait Ratings (Model 8) depending on the experimental condition (top: transactional vignette, slope difference not significant, $t = 0.52$, *ns*; bottom: transformational vignette, significant slope difference, $t = -3.04$, $p < .01$) when controlling for ILT Behaviour. $N = 218$.

Table 32

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits with Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
ILT Behaviour	.47***	.48***	.31***	.31***	.32***
Vignette		.19**	.20***	.20***	.19**
ILT Traits			.24*	.24**	.25**
Anxiety				.02	.16†
Anxiety × ILT Traits					-.18**
Anxiety × Vignette					-.10
R^2	.22	.26	.28	.28	.31
Change in R^2	.22***	.04**	.03**	.00	.03*

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette.

Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 33

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Anxiety as Moderator

Predictors	Trait Ratings						
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
ILT Traits	.56***	.58***	.42***	.42***	.42***	.42***	.42***
Vignette		.13*	.12*	.12*	.12*	.12*	.09†
ILT Behaviour			.22**	.23**	.22**	.28**	.32**
Anxiety				.10	.14†	.15†	.11
Anxiety × ILT Behaviour					-.06	-.05	.11
Anxiety × Vignette					-.04	-.05	.02
ILT Behaviour × Vignette						-.08	-.08
Anxiety × ILT Behaviour × Vignette							-.23**
R^2	.31	.33	.35	.36	.36	.37	.39
Change in R^2	.31***	.02*	.02**	.01	.00	.00	.02**

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 34

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
ILT Traits	.44***	.46***	.24**	.24**	.24**
Vignette		.21***	.20***	.20***	.20***
ILT Behaviour			.31***	.31***	.31***
Anxiety				.02	.10
Anxiety × ILT Behaviour					-.09
Anxiety × Vignette					-.07
R^2	.19	.24	.28	.28	.29
Change in R^2	.19***	.05***	.05***	.00	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Table 35

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from ILT Traits with Attachment Avoidance as Moderator

Predictors	Trait Ratings						
	Beta						
	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
ILT Behaviour	.51***	.51***	.22**	.20*	.20*	.20*	.20*
Vignette		.09	.12*	.12*	.12*	.12*	.08
ILT Traits			.42***	.39***	.39***	.46***	.43***
Avoidance				-.13*	-.09	-.07	-.10
Avoidance × ILT Traits					.01	.01	.17*
Avoidance × Vignette					-.06	-.09	-.07
ILT Traits × Vignette						-.10	-.04
Avoidance × ILT Traits × Vignette							-.23**
R^2	.26	.27	.35	.37	.37	.37	.39
Change in R^2	.26***	.01	.09***	.01*	.00	.00	.02**

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Table 36

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from ILT Traits with Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
ILT Behaviour	.47***	.48***	.31***	.29***	.29***
Vignette		.19**	.20***	.21***	.21***
ILT Traits			.24**	.20*	.20*
Avoidance				-.18**	-.09
Avoidance × ILT Traits					-.01
Avoidance × Vignette					-.12
R^2	.22	.26	.28	.31	.31
Change in R^2	.22***	.04**	.03**	.03**	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 37

Study 1: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Avoidance as Moderator

Predictors	Trait Ratings				
	Model 2	Model 3	Model 4	Model 5	Model 6
ILT Traits	.56***	.58***	.42***	.39***	.38***
Vignette		.13*	.12*	.12*	.12*
ILT Behaviour			.22**	.20*	.20*
Avoidance				-.13*	-.10
Avoidance × ILT Behaviour					.14*
Avoidance × Vignette					-.03
R^2	.31	.33	.35	.37	.39
Change in R^2	.31***	.02*	.02**	.01*	.02*

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

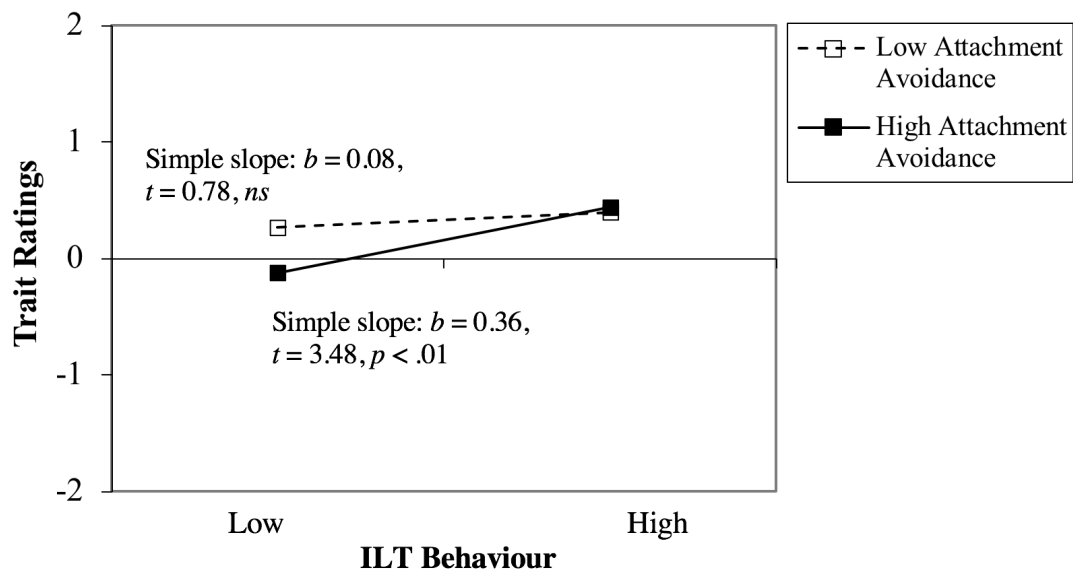


Figure 21. Study 1: Moderating role of Attachment Avoidance on the relationship between Implicit Theories of Transformational Behaviour and Trait Ratings (Model 6). $N = 218$.

Moderation is significant at $p < .05$.

Table 38

Study 1: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour with Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
ILT Traits	.44***	.46***	.24**	.20*	.19*
Vignette		.21***	.20***	.21***	.21***
ILT Behaviour			.31***	.29***	.28***
Avoidance				-.18**	-.10
Avoidance × ILT Behaviour					.08
Avoidance × Vignette					-.10
R^2	.19	.24	.28	.31	.32
Change in R^2	.19***	.05***	.05***	.02**	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Appendix G. Study 1: Additional Regression Models, Single Trait Dimensions

Table 39

Study 1: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Presented Leader from Sensitivity Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Sensitivity				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.06	.09	.09	.09	.07
ILT Intelligence		.17	.04	.04	.02
ILT Dedication		.12	.04	.04	.09
ILT Dynamism		.16	.08	.09	.09
ILT Tyranny		-.10	-.03	-.06	-.04
ILT Masculinity		.13†	.14*	.16*	.16*
Predictors					
ILT Sensitivity			.36***	.35***	.34***
Anxiety				.12†	.23*
ILT Sensitivity × Anxiety					-.15*
Anxiety × Vignette					-.09
R^2	.00	.20	.25	.26	.28
Change in R^2	.00	.20***	.05***	.01†	.02†

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

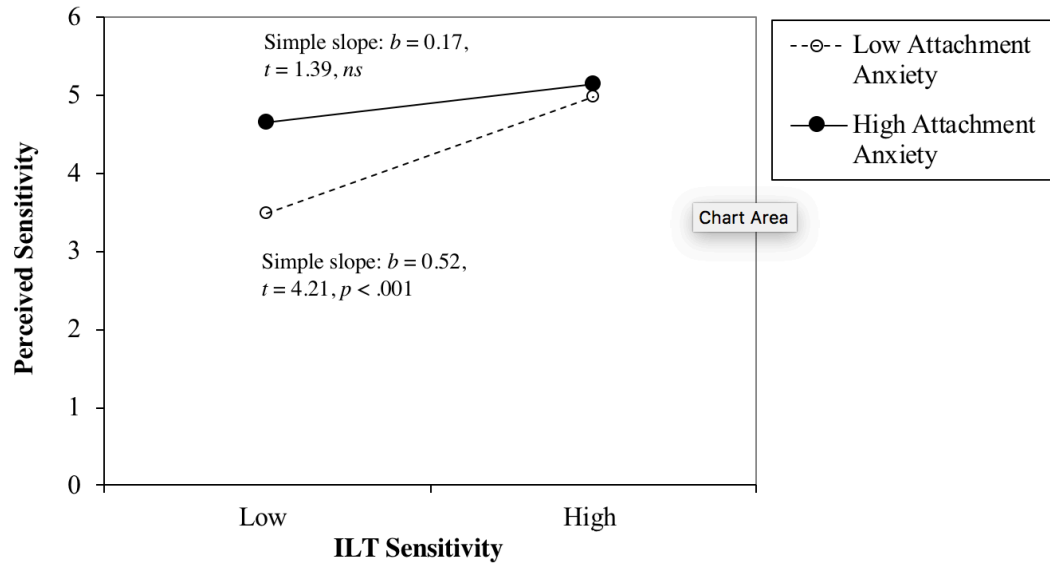


Figure 22. Study 1: Moderating role of attachment anxiety on the relationship between the sensitivity expected from a typical leader and perceived sensitivity in the leader (Model 6). $N = 218$.

Moderation is significant at $p < .05$.

Table 40

Study 1: Hierarchical Multiple Regression Predicting Perceived Intelligence in the Presented Leader from Intelligence Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Intelligence				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.02	.02	.03	.03	.03
ILT Sensitivity		.29**	.16†	.16†	.15
ILT Dedication		.13	-.03	-.03	-.03
ILT Dynamism		.19*	.05	.05	.05
ILT Tyranny		.07	.06	.06	.06
ILT Masculinity		.07	.04	.05	.05
Predictors					
ILT Intelligence			.47***	.47***	.47***
Anxiety				.03	.05
ILT Intelligence × Anxiety					.01
Anxiety × Vignette					.03
R^2	.00	.30	.36	.36	.36
Change in R^2	.00	.30***	.06***	.00	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 41

Study 1: Hierarchical Multiple Regression Predicting Perceived Dedication in the Presented Leader from Dedication Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Dedication				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.07	.10†	.12*	.12*	.12*
ILT Sensitivity		.05	-.02	-.02	-.02
ILT Intelligence		.33**	.19†	.20†	.17
ILT Dynamism		.15	.02	.03	.03
ILT Tyranny		.06	.08	.07	.08
ILT Masculinity		.03	.05	.06	.05
Predictors					
ILT Dedication			.37***	.37***	.42***
Anxiety				.04	.10
ILT Dedication × Anxiety					-.12†
Anxiety × Vignette					.00
R^2	.01	.25	.29	.29	.30
Change in R^2	.01	.24***	.04***	.00	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 42

Study 1: Hierarchical Multiple Regression Predicting Perceived Dynamism in the Presented Leader from Dynamism Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Dynamism				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.15*	.21***	.19**	.19**	.19**
ILT Sensitivity		.10	.06	.05	.04
ILT Intelligence		.27**	.20*	.21†	.20†
ILT Dedication		.21*	.14	.14	.16
ILT Tyranny		.10	.08	.06	.06
ILT Masculinity		.06	.04	.05	.05
Predictors					
ILT Dynamism			.20†	.20*	.21*
Anxiety				.11†	.16†
ILT Dynamism × Anxiety					-.05
Anxiety × Vignette					-.04
R^2	.02	.30	.31	.32	.32
Change in R^2	.02*	.27***	.01†	.01†	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 43

Study 1: Hierarchical Multiple Regression Predicting Perceived Tyranny in the Presented Leader from Tyranny Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Tyranny				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.09	-.12†	-.09	-.09	-.09
ILT Sensitivity		.17†	.34***	.33***	.36***
ILT Intelligence		-.11	-.12	-.12	-.11
ILT Dedication		-.20†	-.13	-.13	-.15
ILT Dynamism		.08	.01	.02	.02
ILT Masculinity		.21**	-.04	-.03	-.03
Predictors					
ILT Tyranny			.55***	.53***	.52***
Anxiety				.10	-.02
ILT Tyranny × Anxiety					-.10
Anxiety × Vignette					.16†
R^2	.04	.11	.30	.31	.33
Change in R^2	.01	.07**	.19***	.01	.02†

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 44

Study 1: Hierarchical Multiple Regression Predicting Perceived Masculinity in the Presented Leader from Masculinity Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Masculinity				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.03	-.03	-.06	-.06	-.06
ILT Sensitivity		-.09	-.06	-.06	-.05
ILT Intelligence		.06	-.01	.00	-.01
ILT Dedication		.01	.07	.07	.06
ILT Dynamism		.19	.09	.09	.09
ILT Tyranny		.15†	-.09	-.09	-.10
Predictors					
ILT Masculinity			.46***	.46***	.47***
Anxiety				.02	.02
ILT Masculinity × Anxiety					-.06
Anxiety × Vignette					-.01
R^2	.00	.06	.20	.20	.21
Change in R^2	.00	.06*	.15***	.00	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 45

Study 1: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Presented Leader from Sensitivity Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Sensitivity				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.06	.09	.09	.10	.10
ILT Intelligence		.17	.04	.03	.05
ILT Dedication		.12	.04	-.01	-.05
ILT Dynamism		.16	.08	.11	.14
ILT Tyranny		-.10	-.03	-.02	-.01
ILT Masculinity		.13†	.14*	.12	.10
Predictors					
ILT Sensitivity			.36***	.34***	.31**
Avoidance				-.19**	-.07
ILT Sensitivity × Avoidance					.03
Avoidance × Vignette					-.17†
R^2	.00	.20	.25	.28	.29
Change in R^2	.00	.20***	.05***	.03**	.02

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 46

Study 1: Hierarchical Multiple Regression Predicting Perceived Intelligence in the Presented Leader from Intelligence Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Intelligence				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.02	.02	.03	.03	.03
ILT Sensitivity		.29**	.16†	.14	.13
ILT Dedication		.13	-.03	-.08	-.09
ILT Dynamism		.19*	.05	.07	.09
ILT Tyranny		.07	.06	.07	.08
ILT Masculinity		.07	.04	.02	.01
Predictors					
ILT Intelligence			.47***	.47***	.47***
Avoidance				-.16*	-.08
ILT Intelligence × Avoidance					-.02
Avoidance × Vignette					-.11
R^2	.00	.30	.36	.38	.39
Change in R^2	.00	.30***	.06***	.02*	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 47

Study 1: Hierarchical Multiple Regression Predicting Perceived Dedication in the Presented Leader from Dedication Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Dedication				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.07	.10†	.12*	.13*	.13*
ILT Sensitivity		.05	-.02	-.03	-.03
ILT Intelligence		.33**	.19†	.19†	.20†
ILT Dynamism		.15	.02	.04	.03
ILT Tyranny		.06	.08	.09	.08
ILT Masculinity		.03	.05	.04	.05
Predictors					
ILT Dedication			.37***	.34**	.31**
Avoidance				-.12†	-.16†
ILT Dedication × Avoidance					.05
Avoidance × Vignette					.05
R^2	.01	.25	.29	.30	.30
Change in R^2	.01	.24***	.04***	.01†	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 48

Study 1: Hierarchical Multiple Regression Predicting Perceived Dynamism in the Presented Leader from Dynamism Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Dynamism				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	.15*	.21***	.19**	.19**	.19**
ILT Sensitivity		.10	.06	.06	.06
ILT Intelligence		.27**	.20†	.20†	.20†
ILT Dedication		.21*	.14	.13	.12
ILT Tyranny		.10	.08	.09	.09
ILT Masculinity		.06	.04	.03	.03
Predictors					
ILT Dynamism			.20†	.20*	.20*
Avoidance				-.05	-.04
ILT Dynamism × Avoidance					.02
Avoidance × Vignette					-.01
R^2	.02	.30	.31	.31	.31
Change in R^2	.02	.27***	.01†	.00	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 49

Study 1: Hierarchical Multiple Regression Predicting Perceived Tyranny in the Presented Leader from Tyranny Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Tyranny				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.09	-.12†	-.09	-.09	-.09
ILT Sensitivity		.17†	.34***	.35***	.37***
ILT Intelligence		-.11	-.12	-.12	-.13
ILT Dedication		-.20†	-.13	-.10	-.08
ILT Dynamism		.08	.01	.00	-.03
ILT Masculinity		.21**	-.04	-.02	.00
Predictors					
ILT Tyranny			.55***	.55***	.53***
Avoidance				.11	-.01
ILT Tyranny × Avoidance					.02
Avoidance × Vignette					.17*
R^2	.04	.11	.30	.31	.32
Change in R^2	.01	.07**	.19***	.01	.01

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

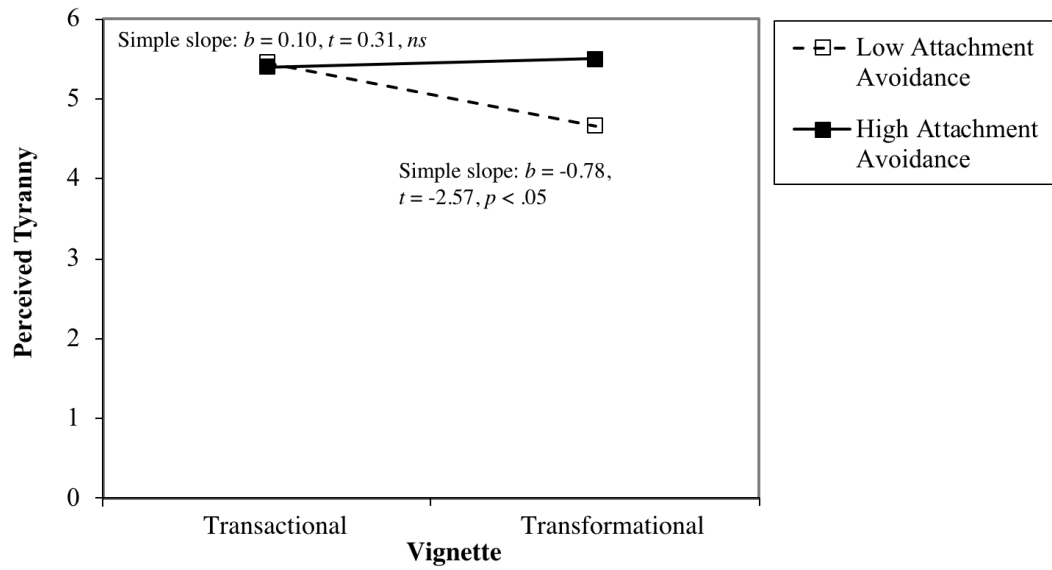


Figure 23. Study 1: Moderating role of attachment avoidance on the relationship between the leader input stimuli (vignette: transactional vs. transformational) and perceived tyranny in the leader (Model 6). $N = 218$.

Moderation is significant at $p < .05$.

Table 50

Study 1: Hierarchical Multiple Regression Predicting Perceived Masculinity in the Presented Leader from Masculinity Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Masculinity				
	Beta				
	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables					
Vignette	-.03	-.03	-.06	-.06	-.06
ILT Sensitivity		-.09	-.06	-.06	-.06
ILT Intelligence		.06	-.01	-.01	-.01
ILT Dedication		.01	.07	.06	.06
ILT Dynamism		.19	.09	.10	.09
ILT Tyranny		.15†	-.09	-.09	-.09
Predictors					
ILT Masculinity			.46***	.45***	.46***
Avoidance				-.06	-.08
ILT Masculinity × Avoidance					-.03
Avoidance × Vignette					.02
R^2	.00	.06	.20	.21	.21
Change in R^2	.00	.06*	.15***	.00	.00

Note. N = 218. Vignette: 0 = Transactional Vignette. 1 = Transformational Vignette. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix H. Study 2: Additional Regression Models, Controlling for the Other Independent Variable

Table 51

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Leadership Theory Traits With Attachment Anxiety as Moderator

Predictors	Trait Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Behaviour	.29***	-.07	-.07	-.07
ILT Traits		.49***	.50***	.50***
Anxiety			-.05	-.05
Anxiety × ILT Traits				.08
R^2	.10	.20	.20	.20
Change in R^2	.08***	.11***	.00	.01

Note. N = 217. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 52

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Leadership Theory Traits With Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Behaviour	.42***	.26**	.26**	.26**
ILT Traits		.21*	.22*	.23*
Anxiety			-.03	-.04
Anxiety × ILT Traits				.03
R^2	.19	.21	.21	.21
Change in R^2	.17***	.02*	.00	.00

Note. N = 217. Anxiety = Attachment Anxiety. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 53

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Anxiety as Moderator

Predictors	Trait Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Traits	.44***	.49***	.50***	.52***
ILT Behaviour		-.07	-.08	-.08
Anxiety			-.05	-.06
Anxiety × ILT Behaviour				.11†
R^2	.20	.20	.20	.21
Change in R^2	.19***	.00	.00	.01†

Note. N = 217. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 54

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Anxiety as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Traits	.41***	.22*	.22*	.24*
ILT Behaviour		.26**	.26**	.26**
Anxiety			-.03	-.04
Anxiety × ILT Behaviour				.06
R^2	.18	.21	.21	.21
Change in R^2	.16***	.03**	.00	.00

Note. N = 217. Anxiety = Attachment Anxiety. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Table 55

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Leadership Theory Traits With Attachment Avoidance as Moderator

Predictors	Trait Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Behaviour	.29***	-.07	-.08	-.07
ILT Traits		.49***	.49***	.47***
Avoidance			-.02	-.03
Avoidance × ILT Traits				.19**
R^2	.10	.20	.20	.24
Change in R^2	.08***	.10***	.00	.04**

Note. N = 217. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 56

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Leadership Theory Traits With Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Behaviour	.42***	.26**	.26**	.26**
ILT Traits		.22*	.22*	.20*
Avoidance			-.02	-.03
Avoidance × ILT Traits				.14*
R^2	.19	.21	.21	.23
Change in R^2	.17***	.02*	.00	.02*

Note. N = 217. Avoidance = Attachment Avoidance. ILT = Implicit Leadership Theory.
 † p < .10. * p < .05. ** p < .01. *** p < .001.

Table 57

Study 2: Hierarchical Multiple Regression Predicting Trait Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Avoidance as Moderator

Predictors	Trait Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Traits	.44***	.49***	.49***	.50***
ILT Behaviour		-.07	-.08	-.10
Avoidance			-.02	-.04
Avoidance × ILT Behaviour				.21***
R^2	.20	.20	.20	.25
Change in R^2	.19***	.00	.00	.05***

Note. N = 217. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Table 58

Study 2: Hierarchical Multiple Regression Predicting Transformational Behaviour Ratings from Implicit Theories of Transformational Leadership Behaviour With Attachment Avoidance as Moderator

Predictors	Transformational Behaviour Ratings			
	Beta			
	Model 2	Model 3	Model 4	Model 5
ILT Traits	.41***	.22*	.22*	.23*
ILT Behaviour		.26**	.26**	.24*
Avoidance			-.02	-.04
Avoidance × ILT Behaviour				.16*
R^2	.18	.21	.21	.21
Change in R^2	.16***	.03**	.00	.02*

Note. N = 217. Avoidance = Attachment Avoidance. ILT Behaviour = Implicit Theories of Transformational Leadership Behaviour.

† p < .10. * p < .05. ** p < .01. *** p < .001.

Appendix I. Study 2: Additional Regression Models, Single Trait Dimensions

Table 59

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Sensitivity Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Sensitivity			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Intelligence	.14	.00	.00	.00
ILT Dedication	.33**	.27*	.26*	.26*
ILT Dynamism	-.04	-.05	-.04	-.04
ILT Tyranny	-.13†	-.07	-.06	-.05
ILT Masculinity	.06	.07	.06	.06
Predictors				
ILT Sensitivity		.28**	.29**	.29**
Anxiety			-.03	-.03
ILT Sensitivity × Anxiety				-.01
R^2	.20	.24	.24	.24
Change in R^2	.19***	.03**	.00	.00

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 60

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Intelligence Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Intelligence			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.18*	.10	.13	.12
ILT Dedication	.20†	.13	.11	.12
ILT Dynamism	.07	.03	.04	.04
ILT Tyranny	.04	.00	.03	.02
ILT Masculinity	.08	.07	.06	.07
Predictors				
ILT Intelligence		.20†	.19†	.19†
Anxiety			-.06	-.06
ILT Intelligence × Anxiety				.05
R^2	.16	.17	.18	.18
Change in R^2	.15***	.01†	.00	.00

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 61

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Dedication Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Dedication			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.06	.01	.03	.03
ILT Intelligence	.20*	.10	.09	.12
ILT Dynamism	.17†	-.03	-.02	-.02
ILT Tyranny	-.04	.01	.02	-.01
ILT Masculinity	.07	.06	.06	.07
Predictors				
ILT Dedication		.37**	.36**	.35**
Anxiety			-.03	-.04
ILT Dedication × Anxiety				.12†
R^2	.17	.21	.21	.22
Change in R^2	.15***	.04**	.00	.01†

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 62

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Dynamism Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Dynamism			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.24*	.24*	.25*	.25*
ILT Intelligence	.10	.06	.06	.07
ILT Dedication	.10	-.04	-.05	-.06
ILT Tyranny	.05	.05	.06	.04
ILT Masculinity	.13†	.12	.11	.12
Predictors				
ILT Dynamism		.21†	.22*	.23*
Anxiety			-.03	-.03
ILT Dynamism × Anxiety				.11†
R^2	.17	.18	.18	.19
Change in R^2	.16***	.02†	.00	.01†

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 63

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Tyranny Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Tyranny			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	-.03	.16†	.11	.10
ILT Intelligence	-.01	-.19*	-.18*	-.18†
ILT Dedication	-.22†	-.05	-.01	-.02
ILT Dynamism	.20†	.18†	.14	.14
ILT Masculinity	.35***	.06	.09	.08
Predictors				
ILT Tyranny		.62***	.57***	.57***
Anxiety			.12†	.13*
ILT Tyranny × Anxiety				.05
R^2	.16	.38	.39	.39
Change in R^2	.16***	.22***	.01†	.00

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 64

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Masculinity Expected from a Typical Leader with Attachment Anxiety as Moderator

Predictors	Perceived Masculinity			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.12	.15	.17†	.19†
ILT Intelligence	-.03	-.04	-.05	-.06
ILT Dedication	.04	.03	.02	.02
ILT Dynamism	.10	.06	.07	.07
ILT Tyranny	.18*	-.02	.00	.00
Predictors				
ILT Masculinity		.37***	.36***	.36***
Anxiety			-.06	-.06
ILT Masculinity × Anxiety				-.10
R^2	.06	.15	.15	.16
Change in R^2	.05*	.09***	.00	.01

Note. N = 217. ILT = Implicit Leadership Theory. Anxiety = Attachment Anxiety.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 65

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Sensitivity Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Sensitivity			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Intelligence	.14	.00	.00	-.01
ILT Dedication	.33**	.27*	.28*	.27*
ILT Dynamism	-.04	-.05	-.05	-.05
ILT Tyranny	-.13†	-.07	-.07	-.06
ILT Masculinity	.06	.07	-.07	.07
Predictors				
ILT Sensitivity		.28**	.27**	.29**
Avoidance			.01	.01
ILT Sensitivity × Avoidance				.08
R^2	.20	.24	.24	.24
Change in R^2	.19***	.03**	.00	.01

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 66

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Intelligence Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Intelligence			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.18*	.10	.11	.14
ILT Dedication	.20†	.13	.13	.08
ILT Dynamism	.07	.03	.03	.10
ILT Tyranny	.04	.00	.00	.03
ILT Masculinity	.08	.07	.07	.05
Predictors				
ILT Intelligence		.20†	.20†	.13
Avoidance			-.01	-.04
ILT Intelligence × Avoidance				.20**
R^2	.16	.17	.17	.21
Change in R^2	.15***	.01	.00†	.03**

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

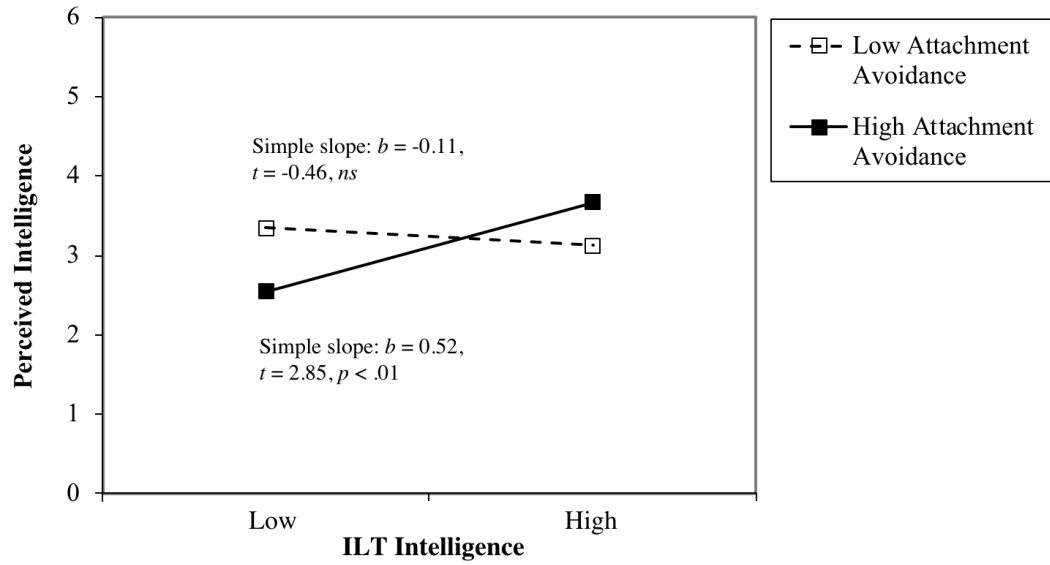


Figure 24. Study 2: Moderating role of attachment avoidance on the relationship between the intelligence expected from a typical leader and perceived intelligence in the own supervisor (Model 5). $N = 217$.

Moderation is significant at $p < .01$.

Table 67

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Dedication Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Dedication			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.06	.01	.01	.06
ILT Intelligence	.20*	.10	.10	.11
ILT Dynamism	.17†	-.03	-.03	.00
ILT Tyranny	-.04	.01	.01	-.02
ILT Masculinity	.07	.06	.06	.05
Predictors				
ILT Dedication		.37**	.37**	.25*
Avoidance			.00	-.02
ILT Dedication × Avoidance				.27***
R^2	.17	.21	.21	.28
Change in R^2	.15***	.04**	.00	.07***

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

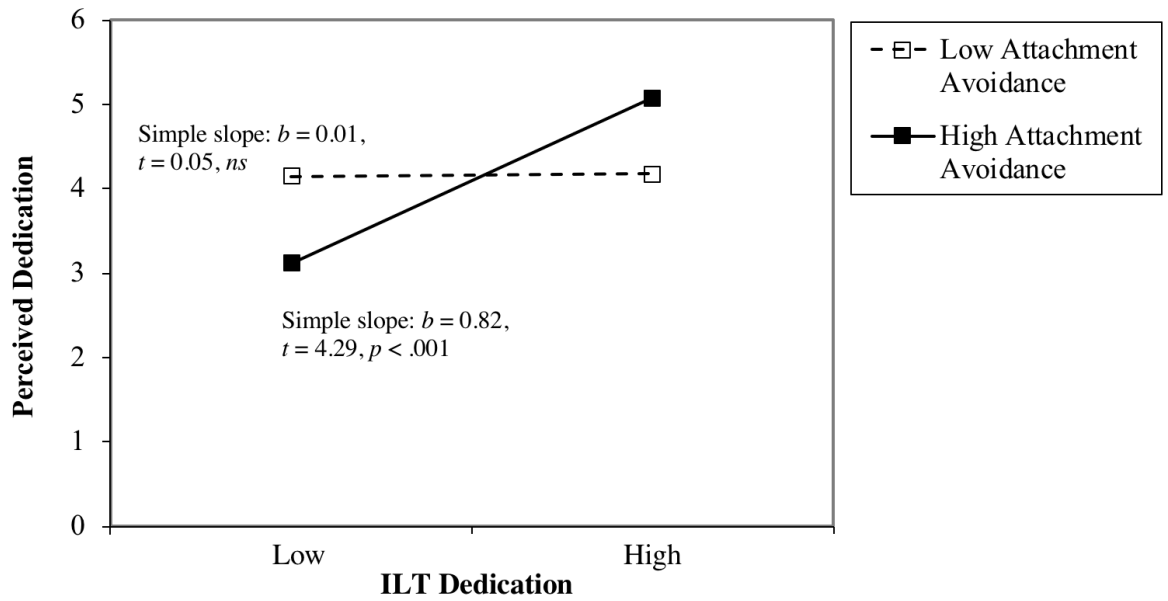


Figure 25. Study 2: Moderating role of attachment avoidance on the relationship between the dedication expected from a typical leader and perceived dedication in the own supervisor (Model 5). $N = 217$.

Moderation is significant at $p < .001$.

Table 68

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Dynamism Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Dynamism			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.24*	.24*	.24*	.25**
ILT Intelligence	.10	.06	.06	.07
ILT Dedication	.10	-.04	-.05	-.09
ILT Tyranny	.05	.05	.05	.04
ILT Masculinity	.13†	.12	.12	.11
Predictors				
ILT Dynamism		.21†	.22*	.24*
Avoidance			-.03	-.03
ILT Dynamism × Avoidance				.09
R^2	.17	.18	.18	.19
Change in R^2	.16***	.02†	.00	.01

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 69

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Tyranny Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Tyranny			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	-.03	.16†	.16†	.15†
ILT Intelligence	-.01	-.19*	-.20*	-.18†
ILT Dedication	-.22†	-.05	-.06	-.07
ILT Dynamism	.20†	.18†	.18†	.18†
ILT Masculinity	.35***	.06	.06	.06
Predictors				
ILT Tyranny		.62***	.62***	.61***
Avoidance			-.03	-.02
ILT Tyranny × Avoidance				.05
R^2	.16	.38	.38	.38
Change in R^2	.16***	.22***	.00	.00

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 70

Study 2: Hierarchical Multiple Regression Predicting Perceived Sensitivity in the Own Supervisor from Masculinity Expected from a Typical Leader with Attachment Avoidance as Moderator

Predictors	Perceived Masculinity			
	Beta			
	Model 2	Model 3	Model 4	Model 5
Control Variables				
ILT Sensitivity	.12	.15	.17†	.17†
ILT Intelligence	-.03	-.04	-.07	-.07
ILT Dedication	.04	.03	.00	.00
ILT Dynamism	.10	.06	.09	.09
ILT Tyranny	.18*	-.02	-.01	-.01
Predictors				
ILT Masculinity		.37***	.36***	.36***
Avoidance			-.11	-.11
ILT Masculinity × Avoidance				-.01
R^2	.06	.15	.16	.16
Change in R^2	.05*	.09***	.01	.00

Note. N = 217. ILT = Implicit Leadership Theory. Avoidance = Attachment Avoidance.

As social desirability was never significant by itself and showed relatively stable effects across the various models, simplified versions of regression models are shown, starting from Model 2.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix J. Study 3: Testing a Mediation with a Moderation

In order to test our proposed process hypotheses, we used an analysis strategy that might seem counterintuitive at first by including moderating variables. In the following, we will briefly describe how a theoretical mediation was traditionally tested and present an alternative approach to testing the role of a mediator. We will then outline why the traditional approach of testing a mediation did not seem suitable for *attentional capacity* and *accuracy motivation* and how we applied the alternative approach to our study.

Traditional Mediation Analysis

Using a mediation, researchers usually want to investigate a psychological process, i.e., how an independent variable influences a dependent variable via a mediator M (or transmitting variable TV; Jacoby & Sassenberg, 2011). In the present study, we wanted to know whether the relationship between attachment style and leadership ratings or memory sensitivity is mediated by attentional capacity and accuracy motivation.

The traditional way of testing a mediation according to Baron and Kenny (1986) is to manipulate the independent variable X and measure the mediating variable M/transmitting variable TV as well as the dependent variable Y²². This approach is also called *measurement-of-mediation design* (Spencer et al., 2005) and translates the *theoretical* mediation into a *statistical* mediation. This design is then tested with three regression models to check whether the effect of the independent

²² Jacoby and Sassenberg (2011) refer to the measured mediator as the measured transmitting construct operationalised as the transmitting variable TV. We will adopt this terminology as it will help to differentiate more clearly that the transmitting construct (the proposed mediator) is different to the factor B used to block the effect of TV to show a mediation in a manipulation-of-mediation design (as outlined in more detail shortly).

variable X on the dependent variable Y is smaller when accounting for the transmitting variable TV compared to when not accounting for TV. Here, a factual state (statistically not controlling for TV) is compared to a counterfactual state (statistically controlling for TV). We refer to Hayes (2013) for current practices in mediation analysis.

According to Jacoby and Sassenberg (2011), there are two main pitfalls with the traditional measurement-of-mediation approach²³: (1) the assumed causal relation between the (measured) mediator and the (measured) dependent variable and (2) the interference of the measurement itself (measuring the TV may interfere with the process under investigation). Addressing the first issue, *experimental-causal-chain-designs* (Spencer et al., 2005; Stone-Romero & Rosopa, 2008; also called *double randomisation designs* by Pirlott & MacKinnon, 2016) suggest using two different experiments, where X is manipulated and TV is measured in Experiment 1, and TV is manipulated and Y is measured in Experiment 2. However, this would require that the measurement and the manipulation of the transmitting construct is feasible or possible. Unfortunately, this is not always the case. Moreover, as outlined in more detail below, it is not always desirable to *measure* the transmitting variable (the second pitfall of traditional mediation analysis as outlined by Jacoby & Sassenberg, 2011). In addition, using an *experimental-causal-chain-design* would require twice the amount of resources compared to a traditional mediation analysis approach. Therefore, Jacoby and Sassenberg (2011) suggest considering the *Testing-a-Process-hypothesis-by-an-Interaction-Strategy* (TPIS) as an alternative

²³ We refer to Spencer et al. (2005) who explain four more drawbacks of measurement-of-mediation designs.

option, which we will refer to as a *Blockage Manipulation-of-Mediation Design* for reasons given in the next section.

Testing Theoretical Mediations With Experimental Designs

Spencer et al. (2005) make recommendations for testing theoretical mediations using experimental designs based on the ease of *manipulating* and *measuring* the proposed mediator. If both measuring and manipulating the proposed process is easy, they suggest using an *experimental-causal-chain design* (also called *double randomisation designs* by Pirlott & MacKinnon, 2016). If it is easy to measure the process but hard to manipulate it, they recommend a *measurement-of-mediation design*. If, however, it is hard to measure the proposed process and easy to manipulate it, they refer to a *moderation-of-process design*.

Pirlott and MacKinnon (2016) use a different strategy of classifying approaches to test mediation. More specifically, they focus on *manipulation-of-mediator designs* (e.g., Smith, 2012) as opposed to the *measurement-of-mediation designs* outlined by Spencer et al. (2005). Pirlott and MacKinnon (2016) classify the different types of manipulation-of-mediator approaches by focusing on *manipulations* and *designs*. Spencer et al.'s (2005) *moderation-of-process design* is classified by Pirlott and MacKinnon (2016) as a *concurrent double randomisation design*. The type of manipulation we used for our study is called *blockage manipulation*. This combination of manipulation and design is also formally described by Jacoby and Sassenberg (2011) as *Testing-a-Process-hypothesis-by-an-Interaction-Strategy* (TPIS). For ease of reading, we will refer to the combination of a blockage mediation done with a concurrent double randomisation design as *blockage manipulation-of-mediation design* and explain it in more detail by drawing

onto the three papers mentioned before. We will then explain how we amended the design to suit our research question.

Blockage Manipulation-of-Mediation Design

The *blockage manipulation-of-mediation design* (Pirlott & MacKinnon, 2016) is a *manipulation-of-mediator experimental design* where the effect of the transmitting variable TV is neutralised by creating a setting where the transmitting variable TV is controlled or blocked across levels of the independent variable X and therefore unable to vary freely as a function of X (Pirlott & MacKinnon, 2016). This blockage is created by a factor B²⁴ which is not a theoretical variable but a technical factor (Jacoby & Sassenberg, 2011). Jacoby and Sassenberg (2011) illustrate the role of B using a study by Zanna and Cooper, (1974), testing a central process account of dissonance effects. Here, freedom of choice (X) effects attitude change (Y) via elaboration intensity (TV). Instead of measuring the transmitting variable TV (as suggested by the traditional mediation approach), they manipulated cognitive load (B), which added elaboration *demands*. By doing so, they manipulated whether freedom of choice (X) can freely influence elaboration intensity (TV). Thus, TV (elaboration *intensity*) and B (elaboration *demands*) are related and might be correlated but they are conceptually not identical. Hence, the proposed transmitting variable TV is not simply treated as a moderator (Jacoby & Sassenberg, 2011) but instead two conditions are created (Pirlott & MacKinnon, 2016): In the control

²⁴ Pirlott and MacKinnon (2016) differentiate between the measured mediator (M) and the manipulated mediator (M*) which would correspond to what Jacoby and Sassenberg (2011) refer to as the transmitted variable TV and the factor B, respectively. Pirlott and MacKinnon's (2016) terminology was probably chosen because they differentiate between experimental manipulations *demonstrating a causal effect of the mediator* and experimental manipulations *targeting the effect of the mediator*. Blockage manipulation would fall into the latter category. As noted previously, Jacoby and Sassenberg (2011) emphasise that in their *Testing-a-Process-hypothesis-by-an-Interaction-Strategy* (TPIS), the mediator/TV and B are conceptually different. Hence, to avoid confusion, we will adopt the terminology of Jacoby and Sassenberg (2011) and refer to the "manipulated mediator" as B.

setting, the transmitting variable TV can vary freely as a function of the independent variable X and variations in the dependent variable Y exist as a function of X. In the blockage condition, where B is manipulated, the effects of X on Y decrease, indicated by smaller mean differences in Y as a function of X. Therefore, the blockage manipulation neutralises the effects of the (conceptually proposed) transmitting variable TV, resulting in a decreased effect of the transmitting variable TV on the dependent variable Y.

Causal Effect of X on Y

Having summarised the logic of the blockage manipulation-of-mediation design, we would like to point out another methodological aspect to enhance clarity. Both in the traditional mediation analysis and the blockage manipulation-of-mediation design, the independent variable X needs to be manipulated to examine the causal path from X to Y. In the blockage manipulation-of-mediation design, this would result in a (at least) 2×2 factorial design (called *concurrent double randomisation design* by Pirlott & MacKinnon, 2016, *testing-a-process-hypothesis-by-an-interaction-strategy* by Jacoby & Sassenberg, 2011). However, when discussing experimental-causal-chain designs, where both the independent variable and the mediator are manipulated and measured in two separate experiments, Spencer et al. (2005) also point out that it can sometimes be problematic to manipulate both the proposed independent variable and the proposed psychological process. In fact, when talking about the *moderation-of-process design* (the design that would come closest to the *concurrent double randomisation design* by Pirlott & MacKinnon, 2016, *testing-a-process-hypothesis-by-an-interaction-strategy* by Jacoby & Sassenberg, 2011), Spencer et al. (2005) only focus on the role of the

mediator and do not suggest that the independent variable needs to be manipulated as well.

Role of Manipulation Checks

As we mentioned at the beginning of this method section, the interference of the measurement of the transmitting variable TV was one of the two pitfalls of traditional mediation analysis outlined by Jacoby and Sassenberg (2011). Using manipulation checks is another way of trying to measure the transmitting variable. Hence, the opinions regarding the role and necessity of manipulation checks for the mediator/transmitting variable in blockage manipulation-of-mediation designs differ between Pirlott and MacKinnon (2016) and Jacoby and Sassenberg (2011)²⁵. Pirlott and MacKinnon (2016) suggest using the measurement of mediators as manipulation checks. They argue that with measuring M (TV) as a manipulation check, it allows testing whether X (and M* or B) indeed affect M (TV). This is to counteract the weakness of manipulation-of-mediator designs of not being able to demonstrate that X causes M (TV). Moreover, it should demonstrate (a lack of) mean differences in M (TV) corresponding to conditions of X as a function of whether M (TV) was blocked.

²⁵ This has also to do with their different conceptualisation of the relationship between *measured* mediator M and *manipulated* mediator M* (Pirlott & MacKinnon, 2016) or, as it would be called by Jacoby and Sassenberg (2011), the transmitting variable TV and the factor B, respectively. Pirlott and MacKinnon (2016) sometimes give the impression that the *measured* mediator M and the *manipulated* mediator M* are conceptually the same, although they initially do differentiate between experimental manipulations *demonstrating a causal effect of the mediator* and experimental manipulations *targeting the effect of the mediator*. Therefore, they also state that “[m]anipulating the mediator to demonstrate how the effects of X on Y differ as a function of M* inherently causes a mediator to also become a moderator. Therefore, in manipulation-of-mediator designs, it can be difficult to distinguish between mediators and moderators (Bullock et al., 2010; Imai et al., 2013; Mark, 1990; Spencer et al., 2005)” (p. 34). According to them, in designs that *target the effect of the mediator* (i.e., blockage), the manipulated variable (the factor B, Jacoby & Sassenberg, 2011) moderated the effect of the mediator (transmitting variable) of X on Y. In designs that seek to show a *causal effect of the mediator*, on the other hand, they state that the manipulation of the mediator is equivalent to a moderation design.

However, Jacoby and Sassenberg (2011) suggest that a manipulation check should not be included, as measuring the transmitting variable is one of the pitfalls of traditional mediation analysis. Referring to Sigall and Mills (1998), they point out that as soon as the transmitting variable is measured, it might interfere with the very process on investigation: “The very act of observation can change the object of observation” (p. 182). They describe three ways in which measuring the potential mediator can alter the process: “First, the measurement may interrupt the process, leading to the elimination of the original effect of X on Y. [...] Second, the measurement of TV may be a prerequisite for the effect of X on Y to occur in the first place. [...] Third, the measurement of a TV may actually alter the process one aims to examine” (p. 183).

Together with the other main pitfall of traditional mediation analysis (assumed causal relation between the mediator and the dependent variable), the problem when measuring the transmitting variable (e.g., with a manipulation check) or even with measuring the transmitting variable at all (which might not always be possible) is the reason why Jacoby and Sassenberg (2011) formally suggested and described their *testing-a-process-hypothesis-by-an-interaction-strategy* (TPIS) in the first place. Rather than statistically controlling for a measured TV (as in traditional mediation analysis), only Y is measured. Whereas in traditional mediation analysis, a factual state (statistically not controlling for TV) is compared to a counterfactual state (statistically controlling for TV) where the systematic transmission of TV into Y is *simulated* to be absent, the transmission of systematic variance in TV is *prevented* by manipulation in TPIS. Therefore, using the TPIS, the aim is to “directly assess this state of affairs where the hypothesized process in fact *did not* take place (or took place only to a reduced extent). It thereby aims to alter the

process in question” (p. 185). In sum, when using the TPIS, there is no need for measuring the transmitting variable TV as the main aim of the strategy is to *alter*, rather than *measure*, the process in question in the first place²⁶.

Assumptions Regarding the Factor B

Instead of using manipulation checks, Jacoby and Sassenberg (2011) suggest (in some cases) to test the hypothesised interrupting effect of the manipulation in a pre-test to secure that the manipulation is valid. Using a pre-test also addresses one of the two key assumptions by Spencer et al. (2005) that should be met when using a *moderation-of-process design* (a design similar to the TPIS described by Jacoby & Sassenberg, 2011): “first, that the proposed moderating variable has an effect on the proposed psychological process [...] and second, that the only way that the proposed moderating variable affects the relation between the independent variable (A) and the dependent variable (C) is through its effect on [the proposed psychological process] (B), that is, there can be no alternative explanation for the observed pattern of moderation” (p. 847). What he refers to as the moderating variable would equate to the factor B as described above, the technical factor creating the blockage of the influence of the transmitting variable on the dependent variable. According to Spencer et al. (2005), the first assumption could also be met by finding evidence in the literature whereas for the second aspect, one would need to argue that there are no plausible alternative explanations for the effect of the moderating variable on the dependent variable.

²⁶ This view is in contrast to Pirlott and MacKinnon (2016) who suggested, based on Spencer et al (2005), manipulation-of-mediator designs are best applied when the mediator can easily be manipulated and measured.

Usage of a Blockage Mediation-By-Manipulation Design in the Literature

In this section, we will briefly summarise previous relevant research that has used a similar approach for testing a mediation. Neuberg and Fiske (1987), for example, wanted to test the mediating role of accuracy motivation on the relationship between outcome-dependency and individuating impression formation processes. In the last of their set of three experiments, they manipulated accuracy-driven attention. Participants *not* in the accuracy-driven attention condition were expected to show differences in the impression formation process based on the input stimuli condition they were in (information either being neutral vs. consistent regarding the category “schizophrenic”). Participants in the accuracy-driven attention condition, on the other hand, were expected to use individuating processes regardless of the information condition they were in, as those participants had both the accuracy goal and the sufficient attentional resources available to engage in individuating processes.

Hence, though not labelled as such, Neuberg and Fiske (1987) had expected that accuracy-driven attention would block the influence of accuracy motivation on impression formation. For the sake of completeness, it is worth noting that Neuberg and Fiske (1987) based their conclusion about the mediating role of accuracy motivation on a total of three experiments. As outlined earlier, however, we are certain that we can test our proposed mediation using one experiment only.

Usage of a Blockage Mediation-by-Manipulation Design in the Current Study

Overview

After having given an outline of mediation-by-manipulation designs, we will now explain in more detail why and how we want to apply it to Study 3. As

mentioned above, measuring the proposed process might interfere with the effect of interest. Moreover, in our case, we found that there were no suitable satisfying measures for *accuracy motivation* or *attentional capacity*. Even if there was a subjective measure on accuracy motivation, we would strongly suspect that it was influenced by social desirability and might result in a ceiling effect (i.e., many participants giving high ratings on accuracy motivation to please the experimenter). However, accuracy motivation can be manipulated (e.g., Neuberg and Fiske, 1987).

Regarding attention capacity, we felt that trying to measure it objectively might actually influence it. A subjective measure of attention capacity might not capture the construct as such and might also be prone to social desirability tendencies. Moreover, please recall that we expected attachment anxiety to lead to less attentional capacity but more accuracy motivation, with those two mediators having an opposing effect on our dependent variables of interest. Using a traditional approach for testing a mediation would make it difficult to tease those two underlying processes apart in order to capture the influence attachment anxiety has on people's information processing tendencies.

Therefore, as we are interested in *two* underlying processes, we decided to manipulate two factors, one for blocking (vs. not blocking) the influence of participants' attentional capacity and one for blocking (vs. not blocking) the influence of participants' accuracy motivation. We will outline those two factors and their relationship to the corresponding transmitting variables TVs in the following section. With this, we want to provide evidence for the first assumption of Spencer et al. (2005), that the proposed moderating variables (which we will use to block/not block the influence of the mediators) have an effect on the proposed psychological processes.

Attentional Capacity and Working Memory Capacity

Engle and Kane (2003) propose that differences in working memory capacity (WMC) mainly simply reflect differences in executive-attention, i.e., “executive control in maintaining goal-relevant information in a highly active, accessible state under conditions of interference or competition” (p. 149). This is supported by their observation that attentional load studies can be used to detect intra-individual differences in WMC, due to a reduction in WMC because of the secondary attentional load. For example, they refer to one of their previous studies (Kane & Engle, 2000) where under standard conditions, participants low in WMC were more vulnerable to interference than participants high in WMC. There was no such difference in the condition where participants had to perform an attention-demanding secondary task. In our view, this is an example for a blockage manipulation-of-mediation design as outlined earlier and shows that WMC and attention are closely related.

Regarding social cognition, in their literature review, Macrae and Bodenhausen (2000) point out that executive functioning is needed for inconsistency resolution (between prior expectations and current actualities) as well as individuation. Executive functioning describes higher-order cognitive operations that are needed for planning, execution, and regulation of behaviour (Baddeley, 1996; Goldman-Rakic, Cools, & Srivastava, 1996; Shallice, Burgess, & Robertson, 1996) as well as for coordinating activities in working memory (Baddeley, Della Sala, Robbins, & Baddeley, 1996). Therefore, dual-task conditions (as described below) that promote executive dysfunction should also decrease the likelihood of inconsistency resolution or individuation (Baddeley, 1996).

WMC is usually *measured* by using complex WMC span tasks. For example, in the reading span task, participants have to read a sentence, judge whether it makes sense, and are then presented to a letter for less than a second before the next sentence is presented. Participants have to remember the letters after each sentence and are asked to recall them after three to seven items (Engle, 2010). In the operation span task, participants are first presented to a mathematical equation and then to a possible answer where they have to judge whether it is correct. As in the reading span task, a letter is shown after each equation which participants have to remember and later recall. According to Engle and Kane (2003), an individual's capability for executive attention is reflected by the combination of WMC span tasks (operation span, reading span, and counting span) while also relying on speech-based or visual-spatial-based coding. Hence, subjects have to maintain and update a stimulus list whilst attending to a secondary task. Switching to and from the secondary task whilst keeping the stimulus information updated requires executive control.

In Study 3, we used a WMC task as well - however, not for measuring WMC but for manipulating it. This had two reasons. Firstly, as outlined in the section "Role of Manipulation Checks" earlier, we wanted to avoid a possible interference created by measuring underlying variables. Secondly, to test for the potential role of attentional capacity as a transmitting variable (instead of measuring it), we needed to create a situation in which the influence of attentional capacity could not vary freely as a function of the independent variable by manipulating a closely related factor: WMC. Because we manipulated WMC rather than measured it, we found it more adequate to refer to it as Working Memory *Demands* (WMD) manipulation to avoid confusion.

We had two main requirements for the WMD manipulation in Study 3. Firstly, we wanted a task where WMD can be increased *whilst being presented to the information about the leader*. Based on our theory, we expected participants high in attachment insecurity to have chronically lowered attentional capacity and we wanted to see its effects on the stages of *stereotype application* and *individuation and/or stereotype inhibition/correction*. Therefore, if, in one condition, we wanted to block the influence of attentional capacity in those stages, we would need a second task happening whilst the information is being presented. This would not be possible with a classical WMC task. Secondly, we needed a WMD task where our participants taking the experiment online could not take notes whilst performing the task. If using the classical WMC task (usually used in the laboratory setting where participants are supervised by an experimenter) in an online-setting, participants could have easily written down the letters shown after each sentence or equation.

In the low WMD condition (control condition), the demands imposed on the participants were kept to an absolute minimum so that the influence of attentional capacity can vary freely as a function of the independent variable (either attachment anxiety or avoidance). In the high WMD condition (experimental condition), in contrast, we aimed to impose high demands on participant's WMC, therefore "blocking" the influence of attentional capacity. In sum, we assumed that participants in the low WMD condition had all of their WMC available (subject to individual differences) whereas we expected participants in the high WMD condition having had generally little WMC available.

To summarise, attentional capacity is closely linked to WMC (but conceptually not identical) and it was suggested that executive dysfunction (equivalent to low WMC or high WMD) should increase the likelihood of

individuation in person perception. Therefore, we decided to manipulate participants' state WMD to create what Jacoby and Sassenberg (2011) refer to as *factor B* (as described above) in order to either block the mediating/transmitting role of attentional capacity (experimental condition) between attachment style and leadership perception or let it vary freely (control condition). Details of the manipulation are given in the method section of Study 3.

Accuracy Motivation and Accuracy Goal Importance

Relationships between attachment style and accuracy motivation could also be explained using goal shielding theory. Goal shielding describes the tendency to inhibit alternative goals when pursuing a specific goal and it helps people to manage multiple "action systems". It is mostly an overlearned skill which happens automatically and is driven by characteristics of the goal itself and the motivational and emotional context (Shah, Friedman, & Kruglanski, 2002). Moreover, it was found to be linked to people's need for closure: The higher individuals' need for closure, the stronger the inhibition of alternative goals (as this reduces ambiguity or confusion; Shah et al, 2002).

Toure-Tillery and Fishbach (2014) also talk about the close relationship between goal activation and motivation. For the present research, this could mean that the high need for closure in attachment anxious individuals (Mikulincer, 1997) might increase their tendency to shield their main goal or motivation (getting to know the other person by attending to attributes and behaviours of the other person) from alternative goals or distractors, making them engage in data- rather than schema-driven processes in person perception. Although attachment avoidance is related to need for closure as well (Mikulincer, 1997), we do not expect people who score high on this scale to have the same motivational goal as people scoring high on

attachment anxiety, as attachment avoidance is characterised by creating cognitive, emotional, and physical *distance* (Jude Cassidy & Kobak, 1988) rather than closeness.

Closely linked to that, Neuberg and Fiske (1987) had manipulated participants' attentional goal of forming an accurate impression of another person in order to test for participants' accuracy motivation. Based on this, we decided to manipulate participant's Accuracy Goal Importance (AGI) to test for the mediating role of accuracy motivation. We applied the same principle for our AGI manipulation as we did for WMD, where "low" (control condition) again means no interference regarding the corresponding aspect (here: accuracy motivation) and "high" that we aimed to block the influence of the proposed transmitting variable by imposing high accuracy goal importance onto all the participants.

To summarise, we decided to manipulate participants' accuracy goal importance to test for participants' accuracy motivation as a potential transmitting variable. We will now illustrate how the idea of a *blockage mediation-by-manipulation design* can be applied to Study 3 by focusing on the transmitting variable *attentional capacity* blocked with the factor *working memory demands* (WMD). However, the same logic applies to the transmitting variable *accuracy motivation* blocked with the factor *accuracy goal importance* (AGI).

Applying the Logic of a Blockage Mediation-by-Manipulation Design

In Study 3, we wanted to test the effects of, for example, attachment avoidance (X) on TFL ratings (Y) via attention capacity (TV) by manipulating participants' working memory demands (B). To do this, we assigned participants to one of the two conditions. In the blockage condition, we increased participants

working memory demands (B) by imposing a second task onto the original task of paying attention to the information in the video about a non-transformational leader. In the control condition, no such demands were be put onto participants.

We expected that in the control condition, the influence of attention capacity (TV) could vary freely as a function of attachment avoidance (X) and that variations in TFL ratings (Y) would exist as a function of attachment avoidance via attention capacity (TV). In the blockage condition, however, because all participants were exposed to high working memory demands (B), we expected their attention capacity (TV) to be generally low. Thus, in this blockage condition, attention capacity (TV) could not vary freely as a function of attachment avoidance (X). Therefore, the effects of attachment avoidance (X) on TFL ratings (Y) should have decreased as indicated by smaller mean differences in TFL ratings (Y) as a function of attachment avoidance (X). Or, to put it differently, in the control condition, we expected attachment avoidance (X) to positively affect TFL rating (Y) via attention capacity (TV): The higher attachment avoidance, the lower the attention capacity and the higher the TFL ratings (as more schema-driven processes are taking place and participants rely on their TFL ILTs rather than judging the non-TFL leader).

In the blockage condition, on the other hand, we expected that attention capacity (TV) is low for all participants as high working memory demands (B) were put onto participants. Therefore, by blocking the influence or the variation of attention capacity (TV), the effect of attachment avoidance (X) on TFL ratings (Y) should have been be significantly minimised as well: Attachment avoidance should (ideally) no longer predict TFL ratings. We will briefly address two more aspects that we have outlined above and how we decided to approach it: the causal effect of X on Y and the role of manipulation checks.

Causal Effect of X on Y

Based on Jacoby and Sassenberg (2011) and Pirlott and MacKinnon (2016), we concluded that the main reason why they suggest the manipulation of the independent variable is to show a causal effect of X on Y. Whereas we agree that this is an important prerequisite, in our study, however, we decided not to *manipulate* but *measure* our independent variable attachment style (with the two scales *attachment avoidance* and *attachment anxiety*). We nevertheless have good reasons to assume the causal path to run from X to Y and not vice versa.

Firstly, attachment style was measured a few days in advance before the experiment took place. At that time, the participants had not been exposed to the stimulus presented in the experiment. Secondly, attachment style is seen as an individual difference variable with trait-like characteristics. Taken together, it would make little sense to assume that the ratings of the presented leader influenced the attachment style ratings that were given days in advance before the participants were even presented to them. This is, from a chronological perspective, not possible. Moreover, although people hold representations of all attachment styles that could be induced experimentally (e.g., attachment security, Gillath, Selcuk, and Shaver (2008), our focus was on participants' dominant attachment style, or, to put in measurement terms, the degree of attachment anxiety and avoidance participants predominately have on a day-to-day basis. Taken together, we felt the need to focus on participants' trait attachment style and were confident enough to do so without challenging the (theoretical and chronological) causality from X to Y.

Another reason why manipulating instead of measuring the independent variable is usually preferred is to account for endogeneity, or, to minimise the possibility that other omitted variables not measured in a study have a (greater)

influence on the mediator or moderator. According to Evans (1985), however, correlated error cannot create artificial interactions. Therefore, we were mainly interested in interaction effects in Study 3 (and not main effects between the independent variable and the dependent variable), the potential problem of endogeneity should be considerably small.

Role of Manipulation Checks

Given the previous arguments regarding the usage of manipulation checks, we decided to follow the suggestions by Jacoby and Sassenberg (2011) and not to include obtrusive manipulation checks straight after the experimental manipulations. Instead, we decided to include them at the end of our experiment, after all primary measures have been assessed. Although evidence in the literature suggests an influence of the factors B (working memory demands and accuracy goal importance) on the processes to be tested (attention capacity and accuracy motivation, respectively) our manipulation for WMD has not been used such in past research yet. Putting our manipulation checks at the end of our experiment appeared to be a good compromise between conducting additional pre-tests and not including manipulation checks at all.

Conclusion

To summarise, we decided to test our proposed mediations using a *blockage manipulation-of-mediation design*. This was done with the help of additional factors B that was aimed to act as moderators by blocking the effect of the transmitting variables TVs in one condition but not in the other condition (Pirlott & MacKinnon, 2016). Or, to put it differently, by interrupting the causal path of X on Y (Jacoby & Sassenberg, 2011). Although we decided not to manipulate our independent

variable, thus formally creating a causal path of X on Y, we reasoned as to why we believe we can still assume the causal direction from X to Y (and not vice versa) and why the problem of endogeneity should not be an issue. Moreover, inspired by the suggestions by Jacoby and Sassenberg (2011), we decided not to use manipulation checks directly after the manipulations but to put them at the end of our experiment. Although the whole idea of using the *testing-a-process-hypothesis-by-an-interaction-strategy* (TPIS; what would refer to the described *blockage manipulation-of-mediation design*) is to avoid having to measure the transmitting variable in the first place, we wanted to see whether our manipulations worked in the anticipated way.

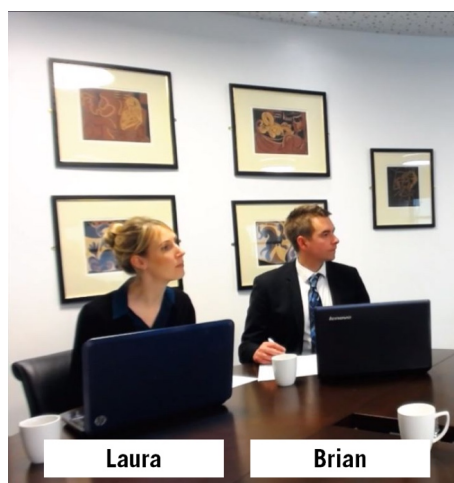
Appendix K. Study 3: Vignette Scenario

Vignette Scenario

As you read the following description, please picture yourself as a member of this workgroup.

Synergetic Consulting, Inc. is a small (150 employees) consulting firm that specializes in providing management consulting in the high tech manufacturing industry. Synergetic was founded by two business-school classmates in the early 1990's and gradually built its clientele to include such high-profile companies as Motorola, Nikon, and Ubisoft. You have worked at Synergetic for about two years now as a consultant on various projects, and for the past six months you have worked as part of an engagement team with two other team members, Laura and Brian, and an engagement team leader, David. Laura has been with Synergetic for just over 3 years; Brian has been with the company almost 4 years. Both people are solid performers and have worked effectively on a number of engagements. The team leader, David, was also effective, but after the successful completion of the team's most recent project, he took a job in the company's Chicago office.

This is a photo of Laura and Brian.



You have not met your new team leader yet, but he is due to join the team this morning. You and your team members will also start working on a new engagement this morning. Your client is GlobalTech Corporation, and they face a challenging problem at the Westside Plant, one of their production facilities.

Westside is one of three GlobalTech production plants that manufacture electronic actuators. Whereas the other two plants have been operating profitably and efficiently, the Westside Plant has been plagued by problems. At one point the quality of the actuators they produced was so poor that the plant had to be shut down for three weeks. The situation at Westside has reached a critical state.

The President of GlobalTech hired your firm to conduct an assessment of the situation. This was done by another consulting team from Synergetic and you have their Initial Assessment Report in hand. Now it's up to your team to develop a plan to make the plant a profitable operation.

You, Laura, and Brian are sharing a morning cup of coffee as you prepare to meet the new team leader.

Appendix L. Study 3: Transcript of the Video and Access Link

All actors were dressed in appropriate business attire. The video opens with a shot of two people, Brian and Laura, in a small conference room. The camera is positioned as the third person. The two people exchange pleasantries and experiences about the weather and journey to work with each other and with the camera as they pour themselves some coffee and offer a cup to the camera.

Laura:

So, Brian, have you heard anything about our new team leader?

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Brian:

I've never met the guy, Laura, but I pulled, I pulled a copy of his bio off the company website. Here you go.

Brian hands a copy of the bio to Laura and another copy to the camera. Screen shot of team leader's bio while Brian speaks.

Brian:

Matt Reynolds, age 38, MBA from Oxford. He worked for Accenture and HP before coming here. And he, he worked, he worked on Nikon's two most recent product launches.

Laura:

Ah, we'll be meeting him soon; he'll be here in a minute.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt enters the room.

He is a trim man, average height, broad shoulders, and short dark hair. He is dressed in a suit with a conservative tie and carries a leather briefcase.

Matt:

Good morning everyone, I'm Matt Reynolds. It's nice to meet you. I've heard a lot of good things about this team.

Each of the team members introduces themselves and they all chat as Matt pours himself a cup of coffee. Matt's demeanor is ambiguous and inscrutable throughout this interaction; he smiles occasionally but he neither laughs openly nor frowns or scowls. The scene fades out. The scene fades back in with all team members seated at the table, their papers in front of them.

Matt:

Well, let's get to work. I trust that you've read all the background information and detail about our new engagement. We need to develop a plan to make the plant a more profitable operation. But before we get started on the plan, I want to make sure that we have got a clear objective for this engagement.

Now, you might have your own ideas, but after reviewing the Initial Assessment Report and the Financial Information, it's clear to me that the plant's biggest problem is that the cost of direct labor is too high. Supervision of the direct labor, turnover, and absenteeism are all excessive. Therefore, our objective for this engagement is to lower the direct labor costs by at least 7 percentage points, so that they make up no more than 20% of sales.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt:

We also need a plan to reduce employee turnover and absenteeism each by 50%. We need to plan our work around getting to these targets.

Laura, I want you to come up with a more detailed report as to why absenteeism and turnover are so bad. Call the HR manager at the Westside plant and get an updated set of numbers. I want absentee rates and turnover numbers for the last 3 quarters.

Laura:

No Problem.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt:

Brian, you look at the financial reports and figure out which items go into accounting for direct labor costs. Then contact the GlobalTech accountants and see if you can get a more detailed breakdown of costs.

Brian:

Will do.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt:

Laura, how are you getting on with those absentee rates and turnover numbers?

Laura:

Well, I've emailed the Westside HR manager but I haven't heard anything back yet.

Matt:

OK, go ahead and call them. They might be slow in responding to email. And after that, I want you to contact the consulting team that did the Initial Assessment Report. Ask them for transcripts of the original interviews and see what you get from that.

Laura:

No problem.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt:

Brian, how are you getting on with that direct labor breakdown? How much more time do you think you'll need?

Brian:

I'm working through the numbers now; should be about half an hour or so.

Matt:

Okay, when you get that breakdown, I want you to figure out how much each employee absence costs in terms of direct labor. Then I want you to figure out an estimate of the costs associated with turnover. And then find out how much it costs to find, hire, and train a replacement.

Brian:

Ok, I'll, I'll find out.

[Video stops here and participants are asked to answer questions regarding the flashing dot.]

Matt:

Laura, let Brian know what absentee and turnover numbers look like for the past 3 quarters so he can work those into his calculations.

Laura:

Sure thing, I've got the numbers right here.

Laura hands Brian a paper. The scene fades to black. Scene fades back in again.

Matt:

Ok, after you've collected all of your information, I want each of you to draft a short proposal for me. This should lay out a list of options for how we're going to get the Westside plant to lower direct labor costs by 7 percentage points and reduce employee turnover and absenteeism by 50%. Your proposal should outline the options and the costs of implementing each, and should have a timeline with specific milestones. I'll look at the options and decide which items to include in the turnaround plan we put together for the clients.

Laura and Brian nod.

Brian:

Ok.

The scene fades to black as the team members get back to work. This concludes the video.

Access Link

The full video can be accessed using the following link:

<https://youtu.be/im3NNFweGr0>

Please note: For participants, the video was interrupted in irregular time intervals (between 15s and 85s per sequence; eight sequences in total; see remarks in the transcript) so they could answer questions regarding the flashing dot.

Appendix M. Study 3: Primary Measures

Implicit Theories of Transformational Leadership Behaviour (Ideal Leader):
Transformational Leadership Behavior Inventory (Podsakoff, Mackenzie, &
Moorman, 1990)

Please indicate how much you agree or disagree with each statement.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

An ideal leader...

1. Has a clear understanding of where we are going.
2. Paints an interesting picture of the future for our group.
3. Is always seeking new opportunities for the organization.
4. Inspires others with his/her plans for the future.
5. Is able to get others committed to his/her dream.
6. Leads by “doing” rather than simply by “telling”.
7. Provides a good model for me to follow.
8. Leads by example.
9. Fosters collaboration among work groups.
10. Encourages employees to be “team players”.
11. Gets the group to work together for the same goal.
12. Develops a team attitude and spirit among employees.
13. Shows us that he/she expects a lot from us.
14. Insists on only the best performance.
15. Will not settle for second best.
16. Acts without considering my feelings.
17. Shows respect for my personal feelings.
18. Behaves in a manner thoughtful of my personal needs.
19. Treats me without considering my personal feelings.
20. Challenges me to think about old problems in new ways.
21. Asks questions that prompt me to think.
22. Has stimulated me to rethink the way I do things.
23. Has ideas that have challenged me to re-examine some of basic assumptions about my work.

Attachment Style: Experiences in Close Relationships-Relationship Structures questionnaire ECR-RS (Fraley, Heffernan, Vicary, & Brumbaugh, 2011)

Please picture the most important person in your life. Who is the person you are thinking of?

- Mother
- Father
- Sister
- Brother
- Aunt
- Uncle
- Grandmother
- Grandfather
- Spouse/Dating Partner
- Daughter
- Son
- Best friend
- Supervisor
- Me
- Other: _____

[If the participant had responded with “Me”, he was shown the following additional instruction: Please picture the most important person in your life that is somebody other than yourself. Who is the person you are thinking of?"]

Thinking about the most important person in your life, please rate the following statements.

Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
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1. It helps to turn to this person in times of need.
2. I usually discuss my problems and concerns with this person.
3. I talk things over with this person.
4. I find it easy to depend on this person.
5. I don't feel comfortable opening up to this person.
6. I prefer not to show this person how I feel deep down.
7. I often worry that this person doesn't really care for me.
8. I'm afraid that this person may abandon me.
9. I worry that this person won't care about me as much as I care about him or her.

Memory Sensitivity

Table 71

Signal and Equivalent Noise Items for Measuring Participants' Memory Sensitivity in Study 3

Signal Item (non-TFL)	Equivalent Noise Item (TFL)
Lead by doing rather than simply by telling. (8)	Lead simply by telling rather than by doing. (8)
Asked questions that prompted Laura and Brian to think. (13)	Asked questions that prompted Laura and Brian to reply. (13)
Showed respect for Laura's and Brian's feelings. (11)	Showed interest in Laura's and Brian's reports. (12)
Got Laura and Brian to work together on the same project. (14)	Got Laura and Brian to work individually on the same project. (15)
Has prompted Laura to consider whether or not to call the HR manager. (18)	Has asked Laura specifically to call the HR manager straight away. (17)

Note. Syllable length of each item is given in brackets.

Participants were presented each item individually and had to rate whether or not the presented leader showed that behaviour and how confident they were of their rating.

non-TFL = non-transformational. TFL = transformational.

Items were presented in random order. Participants had to indicate whether or not the behaviour was shown by the leader in the video and how confident they were of their answer (confidence rating; 7-point Likert-scale ranging from 1 = *not at all confident* to 7 = *extremely confident*; Foti & Lord, 1987).

Transformational Leadership Ratings: Transformational Leadership Behavior Inventory (Podsakoff, Mackenzie, & Moorman, 1990)

Imagine you and the workgroup just shown in the video will be working on this project over the next few weeks. Please indicate your impression about the team leader Matt and what it would be like working with him by stating how much you agree or disagree with each statement.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

The team leader Matt...

1. Has a clear understanding of where we are going.
2. Paints an interesting picture of the future for our group.
3. Is always seeking new opportunities for the organization.
4. Inspires others with his/her plans for the future.
5. Is able to get others committed to his/her dream.
6. Leads by “doing” rather than simply by “telling”.
7. Provides a good model for me to follow.
8. Leads by example.
9. Fosters collaboration among work groups.
10. Encourages employees to be “team players”.
11. Gets the group to work together for the same goal.
12. Develops a team attitude and spirit among employees.
13. Shows us that he/she expects a lot from us.
14. Insists on only the best performance.
15. Will not settle for second best.
16. Acts without considering my feelings.
17. Shows respect for my personal feelings.
18. Behaves in a manner thoughtful of my personal needs.
19. Treats me without considering my personal feelings.
20. Challenges me to think about old problems in new ways.
21. Asks questions that prompt me to think.
22. Has stimulated me to rethink the way I do things.
23. Has ideas that have challenged me to re-examine some of basic assumptions about my work.

Appendix N. Study 3: Secondary Measures

Positive and Negative Affectivity: Positive and Negative Affect Schedule (PANAS;
Watson et al., 1988)

Trait (presented at Time 1):

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer. Indicate to what extent you generally feel this way, that is, how you feel on the average.

State (presented before and after the experimental part):

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer. Indicate to what extent you feel this way right now, that is, at the present moment.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

- | | |
|------------------|----------------|
| 1. Interested | 2. Irritable |
| 3. Distressed | 4. Alert |
| 5. Excited | 6. Ashamed |
| 7. Upset | 8. Inspired |
| 9. Strong | 10. Nervous |
| 11. Guilty | 12. Determined |
| 13. Scared | 14. Attentive |
| 15. Hostile | 16. Jittery |
| 17. Enthusiastic | 18. Active |
| 19. Proud | 20. Afraid |

General Leadership Impression (Cronshaw & Lord, 1987)

How much leadership does the presented team leader exhibit?

- Almost none
- A little
- A fair amount
- Quite a bit
- A great deal

How willing would you be to choose the presented team leader as a formal leader?

- Not at all willing
- Somewhat unwilling
- Neutral
- Somewhat willing
- Very willing

How typical of a leader is the presented team leader?

- Not at all typical
- Not typical
- Somewhat typical
- Quite typical
- Very typical

To what extent does the presented team leader engage in leadership behavior?

- Almost never
- A little
- A fair amount
- Quite a bit
- A great deal

To what extent does the presented team leader fit your image of a leader?

- Not at all
- Not well
- Slightly
- Quite well
- Extremely well

Appendix O. Study 3: Additional Regression Models for Memory Sensitivity

Table 72

Study 3: Hierarchical Multiple Regression Predicting Memory Sensitivity from Attachment Anxiety with AGI and WMD as Moderators

Predictors	Memory Sensitivity		
	Beta		
	Model 1	Model 2	Model 3
Anxiety	-.01	-.01	-.13
AGI		.08	.14
WMD		-.02	.05
Anxiety × AGI			.05
Anxiety × WMD			.12
AGI × WMD			-.09
R^2	.00	.01	.02
Change in R^2	.00	.01	.01

Note. N = 260. Anxiety = Attachment Anxiety. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 73

Study 3: Hierarchical Multiple Regression Predicting Memory Sensitivity from Attachment Avoidance with AGI and WMD as Moderators

Predictors	Memory Sensitivity		
	Beta		
	Model 1	Model 2	Model 3
Avoidance	.08	.08	-.17
AGI		.08	.14
WMD		-.02	.06
Avoidance × AGI			.09
Avoidance × WMD			.24*
AGI × WMD			-.08
R^2	.01	.01	.04
Change in R^2	.01	.01	.03†

Note. N = 260. Avoidance = Attachment Avoidance. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Appendix P. Study 3: Additional Regression Models for TFL Ratings

Table 74

Study 3: Hierarchical Multiple Regression Predicting TFL Ratings from Attachment Anxiety with AGI and WMD as Moderators

Predictors	TFL Ratings			
	Beta			
	Model 1	Model 2	Model 3	Model 4
PA Pre	.20***	.20***	.20***	.19**
Presentation Order	-.23***	-.22***	-.22***	-.22***
Anxiety		-.01	-.09	.05
AGI			-.14*	-.11
WMD			.08	.09
Anxiety × AGI				.01
Anxiety × WMD				-.22**
AGI × WMD				-.05
R^2	.11	.11	.14	.16
Change in R^2	.11***	.01	.02*	.03†

Note. N = 260. TFL = Transformational Leadership. PA Pre = Positive Affect pre-experiment. Presentation Order: 1 TFL Ratings first, 2 = Memory Sensitivity first. Anxiety = Attachment Anxiety. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 75

Study 3: Hierarchical Multiple Regression Predicting TFL Ratings from Attachment Avoidance with AGI and WMD as Moderators

Predictors	TFL Ratings			
	Beta			
	Model 1	Model 2	Model 3	Model 4
PA Pre	.21***	.21***	.20***	.21***
Presentation Order	-.23***	-.23***	-.23***	-.21***
Avoidance		.00	-.01	-.05
AGI			-.14*	-.07
WMD			.08	.11
Avoidance × AGI				.19*
Avoidance × WMD				-.11
AGI × WMD				-.08
R^2	.11	.11	.13	.16
Change in R^2	.11***	.00	.03*	.03†

Note. N = 260. TFL = Transformational Leadership. PA Pre = Positive Affect pre-experiment. Presentation Order: 1 TFL Ratings first, 2 = Memory Sensitivity first. Avoidance = Attachment Avoidance. WMD = Working Memory Demands with 0 = low and 1 = high; AGI = Accuracy Goal Importance with 0 = low and 1 = high.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

References

- Abelson, R. P. (1981). Psychological status of the script concept. *American Psychologist*. <http://doi.org/10.1037/0003-066X.36.7.715>
- Aguinis, H., & Bradley, K. J. (2014). Best Practice Recommendations für Designing and Implementing Experimental Vignette Methodology StudiesStudies. *Organizational Research Methods*. <http://doi.org/WICHTIG für Studie 2+3>
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. New York and London: Psychology Press.
- Anderson, J. R. (1990). *Cognitive psychology*. New York: Freeman.
- Baddeley, A. (1996). Exploring the Central Executive. *The Quarterly Journal of Experimental Psychology Section A*, 49(1), 5–28.
<http://doi.org/10.1080/713755608>
- Baddeley, A. (2012). Working memory: theories, models, and controversies. *Annual Review of Psychology*, 63, 1–29.
- Baddeley, A., Della Sala, S., Robbins, T. W., & Baddeley, A. (1996). Working memory and executive control. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 351(1346), 1397–1404.
<http://doi.org/10.1098/rstb.1996.0123>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of Personality and Social*

Psychology, 61(2), 226–244.

Bass, B. M. (1985). *Leadership and Performance Beyond Expectations*. (J. G.

Clawson, Ed.). New York: The Free Press. <http://doi.org/10.2307/258081>

Bass, B. M., & Avolio, B. J. (1989). Potential Biases in Leadership Measures: How Prototypes, Leniency, and General Satisfaction Relate to Ratings and Rankings

of Transformational and Transactional Leadership Constructs. *Educational and Psychological Measurement*, 49(3), 509–527.

Baumeister, R., Heatherton, T. F., & Tice, D. M. (1994). *Losing control: How and why people fail at self-regulation*. *Journal of Psychiatry Law* (Vol. 30). San

Diego, CA: Academic Press, Inc.

Baumeister, R., Vohs, K., & Tice, D. (2007). The strength model of self-control.

Current Directions in Psychological Science, 16(6), 351–355.

Bernardin, H. J., & Buckley, M. R. (1981). Strategies in Rater Training. *Academy of Management Review*, 6(2), 205–212.

<http://doi.org/10.5465/AMR.1981.4287782>

Berson, Y., Dan, O., & Yammarino, F. J. (2006). Attachment style and individual differences in leadership perceptions and emergence. *The Journal of Social*

Psychology, 146(2), 165–182.

Birnbaum, G. E., Orr, I., Mikulincer, M., & Florian, V. (1997). When Marriage Breaks Up-Does Attachment Style Contribute to Coping and Mental Health?

Journal of Social and Personal Relationships.

<http://doi.org/10.1177/0265407597145004>

Bless, H., Schwarz, N., & Kimmelmeier, M. (1996). Mood and Stereotyping:

Affective States and the Use of General Knowledge Structures. *European Review of Social Psychology*, 7(1), 63–93.

<http://doi.org/10.1080/14792779443000102>

- Bobrow, D. G., & Norman, D. A. (1975). some principles of memory schemata. In D. G. Bobrow & A. G. Collins (Eds.), *Representation and understanding: Studies in cognitive science* (pp. 131–150). New York: Academic Press.
- Bono, J. E., & Ilies, R. (2006). Charisma, positive emotions and mood contagion. *The Leadership Quarterly*. <http://doi.org/10.1016/j.leaqua.2006.04.008>
- Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Carter, E. C., Kofler, L. M., Forster, D. E., & McCullough, M. E. (2015). A Series of Meta-Analytic Tests of the Depletion Effect: Self-Control Does Not Seem to Rely on a Limited Resource. *Journal of Experimental Psychology: General*, *144*(3), No Pagination Specified. <http://doi.org/10.1037/xge0000083>
- Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development*, *59*(2), 228–249.
- Cassidy, J., & Berlin, L. J. (1994). The insecure/ambivalent pattern of attachment: Theory and research. *Child Development*, *65*, 971–991.
- Cassidy, J., & Kobak, R. R. (1988). Avoidance and its relation to other defensive processes. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 300–323). Lawrence Erlbaum Associates, Inc.
- Collins, N. L., & Read, S. J. (1994). Cognitive representations of attachment: The structure and function of working models. In K. Bartholomew & D. Perlman

- (Eds.), *Attachment processes in adulthood: Advances in personal relationships* (pp. 53–90). London: Jessica Kingsley Publishers, Ltd.
- Cronshaw, S. F., & Lord, R. G. (1987). Effects of categorization, attribution, and encoding processes on leadership perceptions. *Journal of Applied Psychology*, 72(1), 97–106. <http://doi.org/10.1037//0021-9010.72.1.97>
- Crowell, J. A., Fraley, R. C., & Shaver, P. R. (1999). Measurement of individual differences in adolescent and adult attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of Attachment Theory Research and Clinical Application* (pp. 434–465). New York: Guilford Press.
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24(4), 349–354.
- Davidovitz, R., Mikulincer, M., Shaver, P. R., Izsak, R., & Popper, M. (2007). Leaders as attachment figures: Leaders' attachment orientations predict leadership-related mental representations and followers' performance and mental health. *Journal of Personality and Social Psychology*, 93, 632–50. <http://doi.org/10.1037/0022-3514.93.4.632>
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109(3), 573–598. <http://doi.org/10.1037/0033-295X.109.3.573>
- Edelstein, R. S., & Gillath, O. (2008). Avoiding interference: adult attachment and emotional processing biases. *Personality and Social Psychology Bulletin*, 34(2), 171–181.
- Eden, D., & Leviatan, U. (1975). Implicit leadership theory as a determinant of the factor structure underlying supervisory behavior scales. *Journal of Applied*

Psychology, 60(6), 736–741.

Ekstrom, R. B., French, J. W., Harman, H., & Dermen, D. (1976). Manual for kit of factor-referenced cognitive tests. *Princeton NJ Educational Testing Service*.

<http://doi.org/10.1073/pnas.0506897102>

Engle, R. W. (2010). Role of Working-Memory Capacity in Cognitive Control.

Current Anthropology, 51(s1), S17–S26. <http://doi.org/10.1086/650572>

Engle, R. W., & Kane, M. J. (2003). Executive Attention, Working Memory Capacity, and a Two-Factor Theory of Cognitive Control (pp. 145–199).

[http://doi.org/10.1016/S0079-7421\(03\)44005-X](http://doi.org/10.1016/S0079-7421(03)44005-X)

Epitropaki, O., & Martin, R. (2004). Implicit leadership theories in applied settings:

Factor structure, generalizability, and stability over time. *The Journal of*

Applied Psychology, 89(2), 293–310. <http://doi.org/10.1037/0021->

9010.89.2.293

Epstein, S., & Meier, P. (1989). Constructive thinking: a broad coping variable with

specific components. *Journal of Personality and Social Psychology*, 57(2),

332–350. <http://doi.org/10.1037/0022-3514.57.2.332>

Evans, M. G. (1985). A Monte Carlo study of the effects of correlated method

variance in moderated multiple regression analysis. *Organizational Behavior*

and Human Decision Processes, 36(3), 305–323. <http://doi.org/10.1016/0749->

5978(85)90002-0

Faul, F., Erdfelder, E., & Buchner, A. (2007). G*Power 3: A flexible statistical

power analysis for the social, behavioral, and biomedical sciences. *Behavior*

Research Methods, 39, 175–191.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power

analyses using G*Power 3.1: tests for correlation and regression analyses.

Behavior Research Methods, 41(4), 1149–60.

<http://doi.org/10.3758/BRM.41.4.1149>

- Felfe, J., & Schyns, B. (2006). Personality and the perception of transformational leadership: The impact of extraversion, neuroticism, personal need for structure, and occupational self-efficacy. *Journal of Applied Social Psychology*, 708–739.
- Field, A. P. (2009). *Discovering statistics using SPSS: and sex and drugs and rock “n” roll (third edition)*. London: Sage publications.
- Fischer, D. G., & Fick, C. (1993). Measuring social desirability: Short forms of the marlowe-crowne social desirability scale. *Educational and Psychological Measurement*, 53(2), 417–424. <http://doi.org/10.1177/0013164493053002011>
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*. <http://doi.org/10.1037/0003-066X.48.6.621>
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In *Handbook of social psychology*. <http://doi.org/10.4324/9780203567708>
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 23, pp. 1–74). Academic Press.
- [http://doi.org/10.1016/S0065-2601\(08\)60317-2](http://doi.org/10.1016/S0065-2601(08)60317-2)
- Fiske, S. T., & Taylor, S. E. (2013). *Social cognition: From brains to culture* (Second Edi). Sage Publications Ltd.
- Foti, R. J., & Hauenstein, N. M. (1993). Processing demands and the effects of prior impressions on subsequent judgments: Clarifying the assimilation/contrast debate. *Organizational Behavior and Human Decision Processes*, 56, 167–189.
- <http://doi.org/10.1006/obhd.1993.1050>

- Foti, R., & Lord, R. G. (1987). Prototypes and scripts: The effects of alternative methods of processing information on rating accuracy. *Organizational Behavior and Human Decision Processes*, 39(3), 318–340. [http://doi.org/10.1016/0749-5978\(87\)90027-6](http://doi.org/10.1016/0749-5978(87)90027-6)
- Fraley, C. R., Niedenthal, P. M., Marks, M., Brumbaugh, C., & Vicary, A. (2006). Adult attachment and the perception of emotional expressions: Probing the hyperactivating strategies underlying anxious attachment. *Journal of Personality*, 74(4), 1163–1190.
- Fraley, R. C., & Brumbaugh, C. C. (2004). A dynamical systems approach to conceptualizing and studying stability and change in attachment security. In W. S. Rholes, J. A. Simpson, W. S. E. Rholes, & J. A. E. Simpson (Eds.), *Adult attachment theory research and clinical implications* (pp. 86–132). Guilford Publications.
- Fraley, R. C., Garner, J. P., & Shaver, P. R. (2000). Adult attachment and the defensive regulation of attention and memory: examining the role of preemptive and postemptive defensive processes. *Journal of Personality and Social Psychology*, 79(5), 816–826. <http://doi.org/10.1037/0022-3514.79.5.816>
- Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships-Relationship Structures Questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, 23(3), 615–625.
- Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology*, 4(2), 132–154. <http://doi.org/10.1037//1089-2680.4.2.132>
- Gailliot, M. T., Plant, E. A., Butz, D. A., & Baumeister, R. F. (2007). Increasing

self-regulatory strength can reduce the depleting effect of suppressing stereotypes. *Personality and Social Psychology Bulletin*, 33(2), 281–294.

- Gilbert, D. T., Krull, D. S., & Pelham, B. W. (1988). Of thoughts unspoken: Social inference and the self-regulation of behavior. *Journal of Personality and Social Psychology*. <http://doi.org/10.1037/0022-3514.55.5.685>
- Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology*, 54(5), 733–740. <http://doi.org/10.1037//0022-3514.54.5.733>
- Gillath, O., Selcuk, E., & Shaver, P. R. (2008). Moving Toward a Secure Attachment Style: Can Repeated Security Priming Help? *Social and Personality Psychology Compass*, 2(4), 1651–1666. <http://doi.org/10.1111/j.1751-9004.2008.00120.x>
- Goldman-Rakic, P. S., Cools, A. R., & Srivastava, K. (1996). The Prefrontal Landscape: Implications of Functional Architecture for Understanding Human Mentation and the Central Executive [and Discussion]. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 351(1346), 1445–1453. <http://doi.org/10.1098/rstb.1996.0129>
- Green-Hennessy, S., & Reis, H. (1998). Openness in processing social information among attachment types. *Personal Relationships*, 5, 449–466.
- Gross, J. J. (1999). Emotion and emotion regulation. In O. P. John & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 525–552). New York: Guilford Press. <http://doi.org/10.1177/1754073908099131>
- Guinote, A., & Phillips, A. (2010). Power can increase stereotyping: Evidence from managers and subordinates in the hotel industry. *Social Psychology*, 41(1), 3–9. <http://doi.org/10.1027/1864-9335/a000002>
- Hall, R. J., & Lord, R. G. (1995). Multi-level information-processing explanations of

- followers' leadership perceptions. *Leadership Quarterly*, 6(3), 265–287.
[http://doi.org/10.1016/1048-9843\(95\)90010-1](http://doi.org/10.1016/1048-9843(95)90010-1)
- Hansbrough, T. (2012). The construction of a transformational leader: Follower attachment and leadership perceptions. *Journal of Applied Social Psychology*, 42(6), 1533–1549. <http://doi.org/10.1111/j.1559-1816.2012.00913.x>
- Hansbrough, T., Lord, R. G., & Schyns, B. (2015). Reconsidering the accuracy of follower leadership ratings. *The Leadership Quarterly*, 26(2), 220–237.
<http://doi.org/10.1016/j.leaqua.2014.11.006>
- Hansbrough, T., & Schyns, B. (under review). *The Appeal of Transformational Leadership*.
- Harms, P. D. (2011). Adult attachment styles in the workplace. *Human Resource Management Review*, 21(4), 285–296.
<http://doi.org/10.1016/j.hrmr.2010.10.006>
- Harms, P. D., & DeSimone, J. A. (2015). Caution! MTurk Workers Ahead—Fines Doubled. *Industrial and Organizational Psychology*, 8(2), 183–190.
<http://doi.org/10.1017/iop.2015.23>
- Hastie, R., & Park, B. (1986). The Relationship Between Memory and Judgment Depends on Whether the Judgment Task is Memory-Based or On-Line, 93(3), 258–268.
- Hayes, A. F. (2013). *Introduction to Moderation, Mediation, and Conditional Process Analysis: A Regression-Based Approach*.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511–24.
- Highhouse, S. (2009). Designing Experiments That Generalize. *Organizational Research Methods*, 12(3), 554–566. <http://doi.org/10.1177/1094428107300396>

- Inzlicht, M., & Schmeichel, B. J. (2012). What Is Ego Depletion? Toward a Mechanistic Revision of the Resource Model of Self-Control. *Perspectives on Psychological Science*, 7(5), 450–463.
<http://doi.org/10.1177/1745691612454134>
- Jacoby, J., & Sassenberg, K. A. I. (2011). Interactions do not only tell us when , but can also tell us how : Testing process hypotheses by interaction, *190*(March 2010), 180–190.
- Kahneman, D. (1973). *Attention and effort*. Englewood Cliffs, N. J.: Prentice Hall.
- Kane, M. J., & Engle, R. W. (2000). Working-Memory Capacity, Proactive Interference, and Divided Attention: Limits on Long-Term Memory Retrieval. *Jourmfl of Experimental Psychology: Learning, Memory, and Cognition*, 26(2), 336–358. <http://doi.org/10.10371/0278-7393.26.2.336>
- Keller, T. (2003). Parental images as a guide to leadership sensemaking: An attachment perspective on implicit leadership theories. *The Leadership Quarterly*, 14, 141–160. [http://doi.org/10.1016/S1048-9843\(03\)00007-9](http://doi.org/10.1016/S1048-9843(03)00007-9)
- Kenney, R. A., Schwartz-Kenney, B. M., & Blascovich, J. (1996). Implicit Leadership Theories: Defining Leaders Described as Worthy of Influence. *Personality and Social Psychology Bulletin*, 22(11), 1128–1143.
<http://doi.org/10.1177/01461672962211004>
- Kirkpatrick, S. A., & Locke, E. A. (1996). Direct and indirect effects of three core charismatic leadership components on performance and attitudes. *Journal of Applied Psychology*, 81, 36–51. <http://doi.org/10.1037//0021-9010.81.1.36>
- Landers, R. N., & Behrend, T. S. (2015). An inconvenient truth: Arbitrary distinctions between organizational, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology*, (March), 1–23.

<http://doi.org/10.1017/iop.2015.13>

- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.
- Leak, G. K., & Parsons, C. J. (2001). The susceptibility of three attachment style measures to socially desirable responding. *Social Behavior and Personality*, 29(1), 21–30. <http://doi.org/10.2224/sbp.2001.29.1.21>
- Lord, R. G. (1985). Accuracy in behavioral measurement: An alternative definition based on raters' cognitive schema and signal detection theory. *Journal of Applied Psychology*, 70(1), 66–71. <http://doi.org/10.1037/0021-9010.70.1.66>
- Lord, R. G., Brown, D. J., Harvey, J. L., & Hall, R. J. (2001). Contextual constraints on prototype generation and their multilevel consequences for leadership perceptions. *The Leadership Quarterly*, 12(3), 311–338. [http://doi.org/10.1016/S1048-9843\(01\)00081-9](http://doi.org/10.1016/S1048-9843(01)00081-9)
- Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Performance*, 34, 343–378. [http://doi.org/10.1016/0030-5073\(84\)90043-6](http://doi.org/10.1016/0030-5073(84)90043-6)
- Lord, R. G., & Maher, K. J. (1993). *Leadership and Information Processing: Linking Perceptions and Performance*. London: Routledge.
- Lurquin, J. H., Michaelson, L. E., Barker, J. E., Gustavson, D. E., Bastian, C. Von, Carruth, N. P., & Miyake, A. (2016). No Evidence of the Ego-Depletion Effect across Task Characteristics and Individual Differences : A Pre-Registered Study, 1–20. <http://doi.org/10.1371/journal.pone.0147770>
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93–120.

<http://doi.org/10.1146/annurev.psych.51.1.93>

Macrae, C. N., Bodenhausen, G. V., Schloerscheidt, A. M., & Milne, A. B. (1999).

Tales of the unexpected: executive function and person perception. *Journal of Personality and Social Psychology*, 76(2), 200–13.

Magai, C., Distel, N., & Liker, R. (1995). Emotion Socialisation, Attachment, and Patterns of Adult Emotional Traits. *Cognition and Emotion*.

<http://doi.org/10.1080/02699939508408976>

Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development*, 33(1), 48–61.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in Infancy, Childhood, and Adulthood: A Move to the Level of Representation. *Monographs of the Society for Research in Child Development*, 50(1/2), 66–104.

<http://doi.org/10.2307/3333827>

Mikulincer, M. (1997). Adult attachment style and information processing: Individual differences in curiosity and cognitive closure. *Journal of Personality and Social Psychology*, 72(5), 1217–30.

Mikulincer, M. (1998). Adult attachment style and individual differences in functional versus dysfunctional experiences of anger. *Journal of Personality and Social Psychology*, 7(2), 513–524.

Mikulincer, M., & Arad, D. (1999). Attachment working models and cognitive openness in close relationships: A test of chronic and temporary accessibility effects. *Journal of Personality and Social Psychology*, 77(4), 710–725.

<http://doi.org/10.1037//0022-3514.77.4.710>

Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and

- accessibility of proximity-related thoughts: exploring the normative and intraindividual components of attachment theory. *Journal of Personality and Social Psychology*, 78(3), 509–523. <http://doi.org/10.1037/0022-3514.78.3.509>
- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology*, 87(6), 940–956.
- Mikulincer, M., & Florian, V. (1995). Appraisal of and Coping with a Real-Life Stressful Situation: The Contribution of Attachment Styles. *Personality and Social Psychology Bulletin*, 21(4), 406–414.
<http://doi.org/10.1177/0146167295214011>
- Mikulincer, M., & Florian, V. (1999). Maternal-Fetal Bonding, Coping Strategies, and Mental Health During Pregnancy—The Contribution of Attachment Style. *Journal of Social and Clinical Psychology*.
<http://doi.org/10.1521/jscp.1999.18.3.255>
- Mikulincer, M., Florian, V., & Weller, A. (1993). Attachment styles, coping strategies, and posttraumatic psychological distress: The impact of the Gulf War in Israel. *Journal of Personality and Social Psychology*, 64(5), 817–826.
<http://doi.org/10.1037/0022-3514.64.5.817>
- Mikulincer, M., Gillath, O., & Shaver, P. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology*, 83(4), 881–895. <http://doi.org/10.1037//0022-3514.83.4.881>
- Mikulincer, M., Hirschberger, G., Nachmias, O., & Gillath, O. (2001). *The affective component of the secure base schema: affective priming with representations of attachment security*. *Journal of personality and social psychology* (Vol. 81).

- Mikulincer, M., & Horesh, N. (1999). Adult attachment style and the perception of others: The role of projective mechanisms. *Journal of Personality and Social Psychology, 76*(6), 1022–1034.
- Mikulincer, M., Orbach, I., & Iavnieli, D. (1998). Adult attachment style and affect regulation: Strategic variations in subjective self-other similarity. *Journal of Personality and Social Psychology, 75*(2), 436–448.
- Mikulincer, M., Shaver, P., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion, 27*(2), 77–102.
- Mikulincer, M., & Shaver, P. R. (2004). Security-based self-representations in adulthood: contents and processes. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 159–195). Guilford Press.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford Press.
- Neuberg, S. L., & Fiske, S. T. (1987). Motivational influences on impression formation: outcome dependency, accuracy-driven attention, and individuating processes. *Journal of Personality and Social Psychology, 53*(3), 431–44. <http://doi.org/10.1037/0022-3514.53.3.431>
- Nye, J. L., & Forsyth, D. R. (1991). The effects of prototype-based biases on leadership appraisals: A test of leadership categorization theory. *Small Group Research, 22*(3), 360–379. <http://doi.org/10.1177/1046496491223005>
- Offermann, L. R., Kennedy, J. K., & Wirtz, P. W. (1994). Implicit leadership theories: Content, structure, and generalizability. *The Leadership Quarterly, 5*(1), 43–58. [http://doi.org/10.1016/1048-9843\(94\)90005-1](http://doi.org/10.1016/1048-9843(94)90005-1)

- Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology, 70*, 153–163.
<http://doi.org/10.1016/j.jesp.2017.01.006>
- Phillips, J. S., & Lord, R. G. (1982). Schematic information processing and perceptions of leadership in problem-solving groups. *Journal of Applied Psychology, 67*(4), 486–492. <http://doi.org/10.1037//0021-9010.67.4.486>
- Pirlott, A. G., & MacKinnon, D. P. (2016). Design approaches to experimental mediation. *Journal of Experimental Social Psychology, 66*, 29–38.
<http://doi.org/10.1016/j.jesp.2015.09.012>
- Pistole, M. C. (1995). College students' ended love relationships: Attachment style and emotion. *Journal of College Student Development, 36*(1), 53–60.
- Podsakoff, M., Mackenzie, S. B., & Moorman, H. (1990). Leader behaviors and their effects on followers' trust in leader, satisfaction, and citizenship behaviors. *Leadership Quarterly, (2)*, 107–142.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*.
<http://doi.org/10.1037/0021-9010.88.5.879>
- Popper, M., & Maysless, O. (2003). Back to basics: applying a parenting perspective to transformational leadership. *The Leadership Quarterly, 14*(1), 41–65. [http://doi.org/10.1016/S1048-9843\(02\)00183-2](http://doi.org/10.1016/S1048-9843(02)00183-2)
- Popper, M., Maysless, O., & Castelnovo, O. (2000). Transformational leadership and attachment. *Leadership Quarterly, 11*(2), 267–289.
[http://doi.org/10.1016/S1048-9843\(00\)00038-2](http://doi.org/10.1016/S1048-9843(00)00038-2)

- Radecki-Bush, C., Farrell, A. D., & Bush, J. P. (1993). Predicting jealous responses: the influence of adult attachment and depression on threat appraisal. *Journal of Social and Personal Relationships*. <http://doi.org/0803973233>
- Ramsey, S. R., Thompson, K. L., McKenzie, M., & Rosenbaum, A. (2016). Psychological research in the internet age: The quality of web-based data. *Computers in Human Behavior*, *58*, 354–360. <http://doi.org/doi:10.1016/j.chb.2015.12.049>
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: the cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology*, *79*(3), 410–424. <http://doi.org/10.1037/0022-3514.79.3.410>
- Rosch, E. (1978). Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization*. Hillsdale, N.J.: Erlbaum.
- Rumelhart, D. E., & Ortony, A. (1982). The representation of knowledge in memory/La representacion del conocimiento en la memoria. *Infancia Y Aprendizaje*.
- Rush, M. C., Thomas, J. C., & Lord, R. G. (1977). Implicit leadership theory: A potential threat to the internal validity of leader behavior questionnaires. *Organizational Behavior and Human Performance*.
- Sauer, S. J. (2011). Taking the reins: The effects of new leader status and leadership style on team performance. *Journal of Applied Psychology*, *96*(3), 574–587. <http://doi.org/10.1037/a0022741>
- Schmeichel, B. J., Vohs, K. D., & Baumeister, R. F. (2003). Intellectual performance and ego depletion: Role of the self in logical reasoning and other information processing. *Journal of Personality and Social Psychology*, *85*(1), 33–46. <http://doi.org/10.1037/0022-3514.85.1.33>

- Schyns, B., & Felfe, J. (2008). Challenges of implicit leadership theories for management. In C. Wankel (Ed.), *21st Century Management: A Reference Handbook* (pp. 301–310). Thousand Oaks, CA: SAGE Publications.
- Schyns, B., Felfe, J., & Blank, H. (2007). Is Charisma Hyper-Romanticism? Empirical Evidence from New Data and a Meta-Analysis. *Applied Psychology*, *56*(4), 505–527. <http://doi.org/10.1111/j.1464-0597.2007.00302.x>
- Schyns, B., & Meindl, J. R. (2005). An overview of implicit leadership theories and their application in organization practice. In B. Schyns & J. R. Meindl (Eds.), *Implicit leadership theories: Essays and explorations*. (pp. 15–36). Greenwich, CT: Information Age Publishing.
- Schyns, B., Meindl, J. R., & Croon, M. A. (2007). The Romance of Leadership Scale: Cross-cultural Testing and Refinement. *Leadership*, *3*(1), 29–46. <http://doi.org/10.1177/1742715007073063>
- Schyns, B., & Schilling, J. (2011). Implicit leadership theories: think leader, think effective? *Journal of Management Inquiry*, *20*, 141–150.
- Shah, J. Y., Friedman, R., & Kruglanski, A. W. (2002). Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality and Social Psychology*, *83*(6), 1261–1280. <http://doi.org/10.1037/0022-3514.83.6.1261>
- Shallice, T., Burgess, P., & Robertson, I. (1996). The Domain of Supervisory Processes and Temporal Organization of Behaviour [and Discussion]. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *351*(1346), 1405–1412. <http://doi.org/10.1098/rstb.1996.0124>
- Shamir, B. (1992). Attribution of influence and charisma to the leader: The romance of leadership revisited. *Journal of Applied Social Psychology*, *22*(5), 386–407.

<http://doi.org/10.1111/j.1559-1816.1992.tb01546.x>

Shamir, B. (1995). Social distance and charisma: Theoretical notes and an exploratory study. *The Leadership Quarterly*, 6(1), 19–47.

[http://doi.org/10.1016/1048-9843\(95\)90003-9](http://doi.org/10.1016/1048-9843(95)90003-9)

Shaver, P. R., & Hazan, C. (1993). Adult romantic attachment: Theory and evidence.

In D. Perlman & W. Jones (Eds.), *Advances in personal relationships* (pp. 29–70). London: Jessica Kingsley.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics.

Attachment Human Development, 4(2), 133–161.

<http://doi.org/10.1080/1461673021015417>

Sherman, D. a. K., Nelson, L. D., & Steele, C. M. (2000). Do Messages about Health

Risks Threaten the Self? Increasing the Acceptance of Threatening Health

Messages Via Self-Affirmation. *Personality and Social Psychology Bulletin*,

26(9), 1046–1058. <http://doi.org/10.1177/01461672002611003>

Sherman, J. W., & Frost, L. A. (2000). On the Encoding of Stereotype-Relevant

Information Under Cognitive Load. *Personality and Social Psychology*

Bulletin. <http://doi.org/10.1177/0146167200261003>

Sherman, J. W., Macrae, C. N., & Bodenhausen, G. V. (2000). Attention and

Stereotyping: Cognitive Constraints on the Construction of Meaningful Social

Impressions. *European Review of Social Psychology*, 11(1), 145–175.

<http://doi.org/10.1080/14792772043000022>

Shiffrin, R. M., & Schneider, W. (1977). Controlled and automatic human

information processing: II. Perceptual learning, automatic attending and a

general theory. *Psychological Review*. [http://doi.org/10.1037/0033-](http://doi.org/10.1037/0033-295X.84.2.127)

295X.84.2.127

- Sigall, H., & Mills, J. (1998). Measures of independent variables and mediators are useful in social psychology experiments: but are they necessary? *Personality and Social Psychology Review : An Official Journal of the Society for Personality and Social Psychology, Inc.*
http://doi.org/10.1207/s15327957pspr0203_5
- Smith, E. R. (2012). Editorial. *Journal of Personality and Social Psychology*, 102(1), 1–3.
- Snodgrass, J. G., & Corwin, J. (1988). Pragmatics of Measuring Recognition Memory: Applications to Dementia and Amnesia. *Journal of Experimental Psychology: General*, 117(1), 34–50. <http://doi.org/10.1037/0096-3445.117.1.34>
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845–851. <http://doi.org/10.1037/0022-3514.89.6.845>
- Sripada, C., Kessler, D., & Jonides, J. (2016). Sifting Signal From Noise With Replication Science, 10–12. <http://doi.org/10.1177/17456916166652875>
- Srull, T. K., & Wyer, R. S. (1989). Person memory and judgment. *Psychological Review*, 96(1), 58–83. <http://doi.org/10.1037/0033-295X.96.1.58>
- Stanislaw, H., & Todorov, N. (1999). Calculation of signal detection theory measures. *Behavior Research Methods, Instruments, & Computers : A Journal of the Psychonomic Society, Inc.*, 31(1), 137–49.
<http://doi.org/10.3758/BF03207704>
- Staudigl, L. F., & Schyns, B. (2014). Implicit leadership theories, attachment style and leadership perception. Paper presented at SIOP.

- Stone-Romero, E. F., & Rosopa, P. J. (2008). The Relative Validity of Inferences About Mediation as a Function of Research Design Characteristics. *Organizational Research Methods*. <http://doi.org/10.1177/1094428107300342>
- Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the marlow-crowne social desirability scale. *Journal of Clinical Psychology*, *28*(2), 191–193. [http://doi.org/10.1002/1097-4679\(197204\)28:2<191::AID-JCLP2270280220>3.0.CO;2-G](http://doi.org/10.1002/1097-4679(197204)28:2<191::AID-JCLP2270280220>3.0.CO;2-G)
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271–324.
- Toure-Tillery, M., & Fishbach, A. (2014). How to Measure Motivation: A Guide for the Experimental Social Psychologist. *Social and Personality Psychology Compass*, *8*(7), 328–341. <http://doi.org/10.1111/spc3.12110>
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*(3), 403–421. <http://doi.org/10.1037/0033-295X.110.3.403>
- van Dierendonck, D. (2010). Servant Leadership: A Review and Synthesis. *Journal of Management*. <http://doi.org/10.1177/0149206310380462>
- van Knippenberg, D., & Sitkin, S. B. (2013). A Critical Assessment of Charismatic—Transformational Leadership Research: Back to the Drawing Board? *The Academy of Management Annals*, *7*(1), 1–60. <http://doi.org/10.1080/19416520.2013.759433>
- Watson, D., Clark, L. a, & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–70.
- Wegner, D. (1994). Ironic processes of mental control. *Psychological Review*.

- Wei, M., Vogel, D. L., Ku, T.-Y., & Zakalik, R. a. (2005). Adult Attachment, Affect Regulation, Negative Mood, and Interpersonal Problems: The Mediating Roles of Emotional Reactivity and Emotional Cutoff. *Journal of Counseling Psychology, 52*(1), 14–24. <http://doi.org/10.1037/0022-0167.52.1.14>
- Weiss, H. M., & Adler, S. (1981). Cognitive complexity and the structure of implicit leadership theories. *Journal of Applied Psychology, 66*(1), 69–78.
- Wisse, B., & Rus, D. (2012). Leader self-concept and self-interested behavior: The moderating role of power. *Journal of Personnel Psychology, 11*(1), 40–48. <http://doi.org/10.1027/1866-5888/a000054>
- Zanna, M. P., & Cooper, J. (1974). Dissonance and the pill: An attribution approach to studying the arousal properties of dissonance. *Journal of Personality and Social Psychology. <http://doi.org/10.1037/h0036651>*