Inspiring, yet tiring: How leader emotional complexity shapes follower creativity

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Organization Science (in press)

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Acknowledgments

The authors thank Senior Editor Batia Wiesenfeld and three anonymous reviewers for their exceptional guidance and advice throughout the review process.

Abstract

Moods and emotions are an important influence on creativity at work, and recent developments point to emotional complexity as a particularly relevant influence in this respect. We develop this line of research by shifting focus from emotional complexity as an *intra*personal influence to emotional complexity as an *inter*personal influence between leader and subordinate. Specifically, we integrate the social-functional approach to emotions with theory on self-regulation to shed light on the effects of leader emotional complexity (LEC), operationalized as alternations between leader displays of happiness and anger, on follower creativity. Three studies, two video experiments (Study 1-2) and a multi-source experience sampling study (Study 3), revealed that, on one hand, LEC stimulated creativity by enhancing the cognitive flexibility of followers; on the other hand, LEC led to heightened self-regulatory resource depletion, which compromised follower creativity. Our results also showed that trait epistemic motivation strengthened the positive effects of LEC on creativity via cognitive flexibility, the negative effects via self-regulatory resource depletion were also stronger for followers with higher trait epistemic motivation. Combined, results suggest that leader displays of emotional complexity can be tiring but are even more so inspiring.

Keywords: Leadership, emotional complexity, trait epistemic motivation, cognitive flexibility, resource depletion, creativity.

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Introduction

The innovative potential of organizations heavily depends on the creativity of its members (Smith and Tushman 2005, Zhou and Hoever 2014). One particularly potent determinant of creativity are felt emotions (Baas et al. 2008, Davis 2009). Especially complex emotions such as those involved in dual tuning (George and Zhou 2007) or affective shifts (Bledow et al. 2013) enable recognition of unusual aspects of individuals' work and thus stimulate the generation of creative solutions. This work on emotional complexity and creativity predominantly took an intrapersonal perspective whereby beneficial outcomes stem from individuals experiencing complex emotions. However, creativity is unlikely to arise in a social vacuum (Perry-Smith 2006); interpersonal factors such as leadership equally play a role in enhancing follower creativity (Hughes et al. 2018) and leaders can also influence followers through their emotional expressions (van Knippenberg and van Kleef, 2016). Complementing earlier intrapersonal work on emotional complexity, we offer an interpersonal perspective on how leader emotional complexity, defined as leader emotional expressions that alternate between different discrete emotions in leader-follower interactions (Rothman and Melwani, 2017), elicits cognitive reactions in followers that contribute to their creativity.

The state of the science on complex emotional expressions at work can be described as divided on whether emotional complexity has beneficial or harmful effects (Methot et al. 2017, Rothman et al. 2017, Rothman and Melwani 2017). Theorizing suggests that expressing emotional complexity in a leadership context may be interpreted as a cue that the leader is open to suggestions and cognitively flexible, thus encouraging greater follower proactivity (Rothman and Melwani 2017). However, scholars (e.g., Rothman et al. 2017) also caution that emotionally complex individuals can be perceived as unpredictable and interactions with them may also be harmful (see also Lim et al. 2021). The two faces of emotional complexity are also exemplified by anecdotal accounts of past and present creative leaders such as Steve Jobs or Elon Musk, who have been described as both inspiring as well as tiring to be around (Duhigg 2018, Isaacson 2011).

The paradox concerning the consequences of expressed emotional complexity demonstrates

that there is a theory-building opportunity regarding how and for whom leader emotional complexity (LEC) promotes creativity, defined as the generation of ideas that are both novel and useful (Amabile 1983). Our research seeks to address these paradoxical predictions by integrating theories on the social functions of LEC (Rothman and Melwani 2017) and self-regulation (Baumeister and Vohs 2016, Johnson et al. 2018) to ground our expectation that LEC fosters greater follower creativity. On the one hand, we expect that LEC encourages social learning that leads to greater cognitive flexibility in followers (Rothman and Melwani 2017, Shamir et al. 1993), thus enhancing their creativity. On the other hand, we anticipate leader-follower interactions involving displays of LEC to be unpredictable (Lim et al. 2021), depleting follower self-regulatory resources (Fitzsimons and Finkel 2010, Johnson et al. 2018), and hampering their creativity. In addition, we theorize that followers differ in the way they make sense of LEC (Rothman and Melwani 2017), such that some may be more responsive to such emotional leadership than others (see also van Knippenberg and van Kleef 2016). Specifically, we suggest that trait epistemic motivation (a tendency to develop a rich and accurate understanding of situations; Kruglanski 1989) moderates these effects, such that followers with higher trait epistemic motivation are more likely to make sense of and thus experience heightened benefits from LEC, specifically greater cognitive flexibility relative to resource depletion, and superior creativity.

According to LEC theory (Rothman and Melwani, 2017), one can distinguish between two ways in which LEC is expressed: as emotional transitions or emotional ambivalence. We study emotional complexity as expressed emotional transitions involving change or movement between two or more different emotional states (Filipowicz et al. 2011, Sinaceur et al. 2013). Previous research has alternatively examined emotional complexity as expressed emotional ambivalence (the expression of tension and conflict; Rothman 2011, Rothman and Northcraft 2015). Further, our focus on the interpersonal effects of emotional complexity implies that we are interested in the effects of leader nonverbal communication, which differs from research focused on leader verbal, nonaffective communication (e.g., sarcasm; Huang et al. 2015, Miron-Spektor et al. 2011), psychological priming (e.g., paradoxical frames; Miron-Spektor, Gino, et al. 2011), or leadership styles (e.g., transformational or paradoxical leader behaviors; Eisenbeiss et al. 2008, Shao et al. 2019).

For expressions to be classified as LEC they must be directly conflicting on at least one of the

major dimensions according to which emotions can be distinguished such as valence (positive vs. negative), appraisal (certain vs. uncertain), action tendency (approach vs. avoid), or arousal (high vs. low; Rothman and Melwani 2017). Here, we operationalize LEC as alternating leader displays between *happiness and anger* because both are basic emotions commonly expressed in work contexts (van Kleef et al. 2012), universally recognized across cultures (Ekman and Cordaro 2011), and directly conflicting in terms of their valence (Russell and Barrett 1999). Happiness and anger also constitute "certain" emotions from a cognitive-appraisal perspective (Smith and Ellsworth 1985) but are conflicting in whether they are socially engaging (happiness) or socially disengaging (anger) in nature (Kitayama et al. 2006). Moreover, happiness and anger are both high-arousal, approach-oriented emotions (De Dreu et al. 2008) associated with a stronger action-orientation as well as dominance that is likely to exhibit a good fit with followers' implicit understanding of stereotypical leader behavior (Knutson 1996, Melwani et al. 2012). Because emotions with an avoid-orientation and low arousal are negatively associated with leadership effectiveness (Motro and Ellis 2017, Visser et al. 2013), operationalizing emotional complexity as alternations between happiness and anger strikes a balance between the criteria necessary for inducing emotional complexity on one hand as well as the ability to rule out potential adverse effects due to a backlash against leader expressions of counterstereotypical emotions on the other hand (Melwani et al. 2012, Tee et al. 2014). Importantly, both our focus on LEC expressed as emotional transitions as well as the choice of high arousal – high certainty emotions displayed as part of LEC should be acknowledged because they represent boundaries around the effects of LEC on follower behavior (Rothman and Melwani, 2017).

We aim to make three key contributions to the literatures on leadership, emotions, and creativity. We complement the literature on the intrapersonal effects of emotional complexity on creativity by taking an interpersonal perspective and focusing on the effects of LEC on follower creativity. Our work also theorizes *how* LEC contributes to creativity. LEC signals that cognitive flexibility is in line with behavioral norms and standards, encouraging followers to embrace similar approaches to their work (Rothman and Melwani 2017). Through social learning (Shamir et al. 1993), followers emulate the spirit of LEC and engage in more cognitively flexible thinking themselves. At the same time, effortful leader-follower interactions, such as those involving displays of LEC, pose a

challenge to followers' self-regulation (Thau and Mitchell 2010). We integrate theory on emotional complexity (Rothman and Melwani 2017) and self-regulation (Johnson et al. 2018) to build new theory on how LEC affects follower self-regulatory processes. The resulting theoretical framework suggests that followers perceive interactions involving displays of LEC to be unpredictable (Rothman et al. 2017), which necessitates greater self-regulatory resource expenditure, and results in resource depletion. Finally, we examine *for whom* LEC is more likely to benefit creativity by integrating theorizing on leader emotional displays (van Knippenberg and van Kleef 2016) and LEC (Rothman and Melwani 2017) and testing the moderating role of trait epistemic motivation.

Dual Pathways Linking Leader Emotional Complexity to Follower Creativity

Drawing on theories on the social functions of LEC as well as self-regulation, we propose that leader displays of emotional complexity contribute to follower creativity through cognitive mechanisms that are inspiring yet also tiring and outline our rationale for each pathway as follows.

Inspiring Effects of Leader Emotional Complexity

According to the emotional complexity literature (Rothman and Melwani 2017), leader displays of complex emotions can enable followers to respond to complex challenges at work and allow for better adaptation to changing environments. This is in part because leader displays of emotional complexity convey richer social information to followers than displays of steady-state emotions (Rothman and Melwani 2017). Some scholars even suggest that emotions convey information precisely because of their ever-changing nature (Frijda 1986, van Kleef et al. 2012, Scherer 2009). Our operationalization of LEC involves alternations between leader displays of happiness and anger, which we suggest should elicit contradictory follower appraisals of their leader's thoughts and intentions. Whereas leader displays of happiness communicate positive appraisals such as satisfaction and goal attainment (Fitness 2000, van Kleef et al. 2009), expressions of anger convey more negative appraisals such as dissatisfaction and frustration of goals (Fischer and Roseman 2007, van Kleef et al. 2010). Changing leader displays alternating between happiness and anger should therefore signal more complex cognitive appraisals, such as both positive *and* negative appraisals. Followers will typically aim to make sense of their leader's emotional expressions through "reverse engineering" or reconstructing the emotion-eliciting context (Hareli and Hess 2010).

Emotional complexity scholars suggest that followers interpret these contradictory appraisals in response to LEC as signals that their leader is cognitively flexible and open to multiple perspectives (Rothman and Melwani 2017). Applying a social learning lens (Bandura 1977, Shamir et al. 1993), we suggest that followers use these cues of their leader's cognitive flexibility as a point of reference helping them to define what kinds of behaviors and orientations are appropriate and desirable for them to display at work. Hence, we expect followers to emulate the spirit of the behaviors that is signaled by their leader because those behaviors and the associated social information they convey are perceived to be in line with behavioral norms and standards (Sims Jr and Manz 1982). Consequently, if a leader displaying LEC conveys that it is appropriate and indeed desirable to be cognitively flexible at work, we suggest that this should make followers more inclined to emulate the spirit of such behavior and engage in cognitively flexible thinking themselves (Rothman and Melwani 2017).

Our theoretical rationale implies that followers interpret leader displays of emotional complexity as relevant social signals that inform their work approach. Indeed, prior research showed that followers interpret leader emotional displays as performance feedback and adapt their behavior accordingly (van Kleef et al. 2009). Further, there is evidence suggesting that changing emotions can prompt observers to make integrated cognitive inferences (Fang et al. 2018), and that perceptions of unexpected change and inconsistency promote divergent thinking (Gocłowska et al. 2014) as well as greater cognitive flexibility (Ritter et al. 2012). As a result, we propose the following hypothesis:
Hypothesis 1: LEC will be positively associated with follower cognitive flexibility.

We also expect that LEC will be positively associated with follower creativity via cognitive flexibility. Consistent with the social functions of emotions perspective, leader emotional displays have been suggested to influence follower behavior (van Knippenberg and van Kleef 2016) including the display of creativity at work (van Kleef, Anastasopoulou, et al. 2010, Visser et al. 2013). Rothman and Melwani (2017) note that leader expressions of emotional complexity may be particularly useful in stimulating creative thinking in followers due to their positive impact on cognitive flexibility. We therefore expect that LEC will foster follower creativity.

First, to arrive at more creative ideas at work, followers benefit from inspiration that more often than not comes from social sources in the work environment (Perry-Smith 2006, Zhou and

Hoever 2014). Decades of research confirm that leadership counts among the most powerful contextual factors to exert an influence on employee creativity (Hughes et al. 2018, Shalley and Gilson 2004). The ability to inspire follower creativity has been highlighted as a key skill in leading for creativity (Mainemelis et al. 2015). Because LEC encourages follower cognitive flexibility, it may provide such creative inspiration (Rothman and Melwani 2017). Thus, cognitive reactions that follow from LEC can inspire followers to explore more creative solutions for work problems.

Second, cognitive flexibility, that is, the ease with which people can switch to a different approach or consider a different perspective, is one of the major pathways towards greater creative insight (De Dreu et al. 2008, Nijstad et al. 2010). Cognitive flexibility allows for the generation of creative ideas through the use of and switches between broad and inclusive cognitive categories, as well as through making new connections among distant rather than closely related ideas and concepts (Nijstad et al. 2010). Given that cognitive flexibility was found to positively impact employee creativity (Kapadia and Melwani 2021, Miron-Spektor and Beenen 2015), we therefore expect LEC to be positively associated with follower creativity via increased cognitive flexibility.

Hypothesis 2: LEC has a positive indirect relationship with follower creativity through increased cognitive flexibility.

Tiring Effects of Leader Emotional Complexity

Although LEC can be an important source of inspiration for creative ideas, exposure to LEC may also be tiring because it depletes followers' self-regulatory resources. Self-regulation theories posit that individuals possess a finite pool of cognitive resources upon which they draw for acts of self-control (Baumeister and Vohs 2016, Johnson et al. 2018). Self-control is frequently exercised by employees to maintain their focus on task-related activities and fend off off-task distractions (Beal et al. 2005). Leader-follower interactions can be particularly strenuous in this respect (e.g., Thau and Mitchell 2010). Likewise, LEC theory (Rothman and Melwani 2017) acknowledges the possibility of LEC leading to both functional and dysfunctional consequences for followers. Extrapolating from these ideas, we posit that followers have to exercise self-control in response to LEC, with negative implications for their self-regulatory resources (Johnson et al. 2018).

Rothman and Melwani (2017) suggest that deciphering LEC is challenging for followers as

such expressions convey complex social signals. Given followers do not have complete information of the circumstances that led to the expression of LEC, they may perceive their leader's contradictory emotional displays as unpredictability (Rothman et al. 2017). As a result of perceiving their leader as unpredictable, followers may find it more challenging to accurately interpret and make sense of their leader's thoughts and social intentions, thus experiencing a reduced sense of control in leader-follower interactions. Supporting this rationale, emotional complexity has been shown to be perceived as more unpredictable (Lim et al. 2021), reducing observer's sense of control (Sinaceur et al. 2013).

We further suggest that followers appraise their leader's unpredictability due to LEC as a work demand, which places a greater self-regulatory burden on followers and promotes resource depletion. Certainty is a fundamental human need (Kruglanski and Orehek 2012), and individuals are likely to experience negative consequences when encountering unpredictability at work. Not knowing where followers stand with their leader and being unable to reliably predict the course of leader-follower interactions is a taxing experience given leaders typically have greater access to organizational resources followers depend on (Lim et al. 2021). Followers therefore are motivated to expend regulatory resources to remain vigilant and effectively interpret the meaning of leader behavior in order to restore a sense of certainty and predictability (Fitzsimons and Finkel 2010, Thau and Mitchell 2010). In line with our arguments, Lim et al. (2021) demonstrated that LEC-induced follower perceptions of unpredictability evoked an anticipatory stress response. Further, there is evidence supporting the idea that people in general (Muraven & Baumeister, 2000) and followers in particular (Fitzsimons and Finkel 2010, Thau and Mitchell 2010) are more vigilant when coping with an unpredictable threat depleting their self-regulatory resources. Based on this rationale, we predict:
Hypothesis 3: LEC will be positively associated with follower resource depletion.

We also expect that LEC is negatively associated with creativity through its effects on resource depletion. Depletion of self-regulatory resources is problematic because it hampers effective work-related functioning (Baumeister and Vohs 2016, Johnson et al. 2018). In the context of leader-follower interactions, self-regulatory demands such as LEC result in resource depletion, which renders followers temporarily less willing and able to function well (Fitzsimons and Finkel 2010, Thau and Mitchell 2010). For example, resource depletion has been related to decreased performance

(Hagger et al. 2010), work engagement (Lanaj et al. 2014), voice (Lin and Johnson 2015), and helping behavior as well as increased incivility (Koopman et al. 2020).

Creative tasks are particularly complex and resource-intensive (Zhou and Hoever 2014), which is why resource depletion is likely to hamper creativity at work for at least two reasons. Idea generation can be seen as a process of trial and error where initial ideas to surmount problems are likely to be incorrect and creative solutions often only emerge after individuals refined their approach and generated many alternative courses of action (Amabile 1996, Zhou et al. 2019). Therefore, creative work requires focused attention and engagement in active information search including both the retrieval of existing concepts from long-term memory and their recombination with new concepts to arrive at creative solutions (Nijstad et al. 2010, Nijstad and Stroebe 2006). Also, creative insight requires reduced latent inhibition, which refers to the broadening of individuals' span of attention that allows for more distant information to enter working memory, improving the originality of ideas that are generated (Ashby et al. 1999, Nijstad et al. 2010). Sustaining these demanding cognitive processes requires self-control that draws on finite self-regulatory resources. When self-regulatory resources are depleted, this may disrupt the creative process. Indeed, prior work found that resource depletion was negatively associated with creativity (Baas et al. 2011, Baumeister et al. 2008, Taylor 2021). Thus, we expect that resource depletion as a consequence of LEC will compromise follower creativity.

Hypothesis 4: LEC has a negative indirect relationship with follower creativity through increased resource depletion.

Trait Epistemic Motivation as a Moderator of the Effects of Leader Emotional Complexity

Our analysis implies that exposure to LEC has both positive and negative consequences. Questions remain as to the overall effect of LEC on follower creativity. We propose that this is influenced by follower trait epistemic motivation[1]. Because LEC affects follower behavior through the cognitive reactions it elicits (Rothman and Melwani 2017), followers with a greater motivation for thorough information processing should invest more in cognitively interpreting such leader expressions, thereby amplifying their work-related effects. Epistemic motivation refers to a

[1]See Appendix E for how trait epistemic motivation differs from related constructs such as integrative complexity (Tetlock et al. 1993), perspective taking (Parker et al. 2008), or emotional intelligence (Mayer and Salovey 1997).

motivation to develop and maintain a rich and accurate understanding of situations (van Kleef et al. 2009, Kruglanski 1989). Although epistemic motivation can be influenced by situational factors (e.g., time pressure), individual difference variables such as personal need for structure reliably capture trait differences in epistemic motivation (De Dreu et al. 2008, van Knippenberg and van Kleef 2016, Neuberg and Newsom 1993). Individuals with high trait epistemic motivation are less likely to selectively use information (Stuhlmacher and Champagne 2000) or rely on stereotypes or heuristics for impression formation (Fiske and Neuberg 1990). They tend to focus their information search on diagnostic information (Kruglanski and Mayseless 1988), accept divergent opinions (Kruglanski and Webster 1991), and have a general inclination to engage in thorough, systematic information processing (Mayseless and Kruglanski 1987). Moreover, trait epistemic motivation has been found to influence the processing of information conveyed by leader emotional displays (van Kleef et al. 2009, van Kleef, Anastasopoulou, et al. 2010). Specifically, followers with high trait epistemic motivation tend to cognitively interpret leader displays of steady-state happiness and anger, resulting in cognitive reactions such as performance inferences (van Kleef et al. 2009) or greater task engagement (van Kleef, Anastasopoulou, et al. 2010), which led followers to adapt their work behavior. Followers with low epistemic motivation are more inclined to engage in superficial processing of social information, relying more on stereotypes and heuristics, and are thus less likely to cognitively interpret leader emotional displays (van Knippenberg and van Kleef 2016). In short, trait epistemic motivation makes it more likely that leader emotional displays are cognitively interpreted.

With respect to cognitive flexibility, we expect the relationship with LEC to be more positive for followers with higher trait epistemic motivation. Because high trait epistemic motivation is associated with more thorough processing of social information (van Knippenberg and van Kleef 2016), they also have a greater inclination to learn from experience (Carette and Anseel 2012), and should thus be more likely to emulate relevant leader behavior (DeRue et al. 2012). Social functional accounts on the interpersonal effects of emotional complexity emphasize that LEC signals to followers that their leader is cognitively flexible and that such work-related orientations are in line with behavioral standards and expectations at work (Rothman and Melwani 2017, Shamir et al. 1993). Through social learning (Bandura 1977, Sims Jr and Manz 1982), followers emulate the spirit of what

is conveyed through LEC, thus promoting greater follower engagement in cognitively flexible thinking. We suggest that followers with high trait epistemic motivation will be more likely to benefit from LEC because of their greater tendency to make sense of leader emotions (van Knippenberg and van Kleef 2016) and learn from relevant leader behavior (Carette and Anseel 2012, DeRue et al. 2012), thereby unlocking the potential for cognitive flexibility from LEC to a greater extent.

We also expect high trait epistemic motivation to exacerbate the positive association between LEC and resource depletion because of LEC′s unpredictable nature (Lim et al. 2021, Rothman et al. 2017). When confronted with LEC, followers draw on self-regulatory resources to enact self-control by focusing on making sense of their leader′s emotional displays. Because trait epistemic motivation can be expected to be associated with thorough engagement with and social learning from the signals conveyed by LEC, we posit that this also comes at a cost because followers need to remain vigilant and resist the temptation to disengage from their leader despite experiencing unpredictable behavior, which consumes finite self-regulatory resources and exacerbates follower resource depletion (Fitzsimons and Finkel 2010, Johnson et al. 2018). As a result, followers with high trait epistemic motivation should be more likely to engage in effortful self-regulation when cognitively interpreting leader emotions and their self-regulatory resources should thus be more depleted by LEC.

Hypothesis 5: The relationship between LEC and follower cognitive flexibility and resource depletion is moderated by follower trait epistemic motivation; trait epistemic motivation strengthens the positive associations between (a) LEC and cognitive flexibility and (b) LEC and resource depletion.

Our theorizing thus suggests moderated mediation. Specifically, we expect that the indirect effect of LEC on follower creativity via cognitive flexibility is stronger when trait epistemic motivation is higher; similarly, the indirect effect of LEC on follower creativity via resource depletion is stronger when trait epistemic motivation is higher:

Hypothesis 6: The positive indirect relationship of LEC with creativity through increased cognitive flexibility is stronger when trait epistemic motivation is higher (vs. lower).

Hypothesis 7: The negative indirect relationship of LEC with creativity through increased resource depletion is stronger when trait epistemic motivation is higher (vs. lower).

Finally, we propose that the inspiring moderated mediation effect of LEC on follower creativity via cognitive flexibility is stronger than the tiring moderated mediation effect via resource depletion. This follows from theory and research on how work situations, such as leader-follower interactions involving LEC, differentially affect resource depletion and cognitive flexibility. Employees can adjust to resource depletion resulting from daily work demands both situationally and over time. Research shows that situational motivation matters for self-regulation and can alleviate short-term resource depletion (Baumeister and Vohs 2007, Johnson et al. 2018). Followers are likely to be more situationally motivated when interacting with their leader compared to others (e.g., coworkers) as leader-follower interactions offer opportunities to benefit from the leader′s resources, skills and abilities, or networks (Thomas et al. 2013). Furthermore, followers′ resource depletion can be eased by gaining more experience with depleting interactions and partly getting used to them (i.e., a habituation effect; Baumeister and Vohs 2016, Quinn et al. 2012). Put differently, self-regulation can be seen as a muscle, such that exercising it may be depleting in the short term but leading to greater long-term resilience (Johnson et al. 2018). The negative impact of LEC on creativity via resource depletion may be eased particularly for followers with higher epistemic motivation, that is, those who are more prone to exert cognitive effort to make sense of situations. They may get used to effortful interactions and recover more quickly from LEC-induced resource depletion over time.

Conversely, from a social learning perspective LEC should have an opposite, promotive effect on cognitive flexibility that sustains its positive influence on creativity over time (Bandura 1977, Shamir et al. 1993). Specifically, follower engagement in cognitively flexible thinking is likely to be reinforced by repeated leader-follower interactions involving LEC, as they further underscore the appropriateness of such behavior at work (Manz and Sims Jr 1980, Rothman and Melwani, 2017), leading to sustained follower creativity. This is especially likely to matter for followers with higher trait epistemic motivation given their greater inclination to cognitively interpret leader emotional expressions (van Knippenberg and van Kleef 2016) and learn from relevant leader behavior (Carette and Anseel 2012, DeRue et al. 2012). We thus hypothesize that with higher epistemic motivation the effect of LEC on creativity via cognitive flexibility is stronger than the effect via resource depletion.

Hypothesis 8: The moderated mediation effect of LEC on follower creativity via cognitive flexibility is stronger relative to the moderated mediation effect via resource depletion.

Overview of Studies

Studies on leadership and emotions often conflate leader emotional displays with contextual factors such as the leader's verbal communication, which is why prior empirical evidence varies in how precisely it can speak to the unique effects of leader emotions on follower behavior (van Knippenberg and van Kleef 2016). Although there may be many contextual triggers of leader emotional expressions, followers may not always know why their leader displays certain emotions. According to Parkinson (1996, p. 678), this necessitates an understanding of "the communicator, addressee, and the surrounding sociocultural context". Because of this, scholars generally distinguish between emotional displays that are integral (related to the situation in which they are expressed) or incidental (lacking an explicit situational target or ambiguous; van Kleef et al. 2010). Conceptual (van Kleef et al. 2010, van Knippenberg and van Kleef 2016) and empirical accounts (Hillebrandt and Barclay 2017, Lim et al. 2021) converge in suggesting that both integral and incidental emotional displays can be cognitively interpreted by followers and inform their work behavior. The question then becomes which emotion type (i.e., incidental or integral) is better suited to test our theoretical model. From the perspective of theory building, we suggest that it is preferable to examine incidental leader emotional displays because this approach allows us to explore the effects of leader emotions on follower behavior independent of contextual variations that may cause the emotions.

We conducted three complementary studies to investigate the interpersonal effects of incidental emotional complexity in leader-follower interactions. Studies 1 and 2 provide experimental tests of our hypotheses utilizing a video manipulation of LEC. We first establish that LEC increases follower creativity via cognitive flexibility and consider the moderating role of trait epistemic motivation (Study 1). We then build on those findings to also consider follower resource depletion as a parallel process that explains the effects of LEC contingent on trait epistemic motivation (Study 2). As part of Studies 1-2, we compare the effects of emotional complexity against those of both steady-state happiness and anger in line with prior research and to provide a conservative test of our hypotheses (van Kleef et al. 2010, Visser et al. 2013). To further increase accuracy and decrease bias

in follower ratings of leader behavior (e.g., Hansbrough et al. 2015), we replicate the proposed research model in a field setting using an experience sampling design (Study 3; Beal 2015).

Study 1: Method

Sample and Design

Ninety-four undergraduate students (63 women and 31 men, mean age of 21) enrolled in an organizational behavior course were recruited from a UK-based business school. Participants were randomly assigned to one of four conditions: (a) alternations between happiness and anger, (b) alternations between anger and happiness, (c) steady-state anger, or (d) steady-state happiness.

The Task

The experimental task tied in with the overall narrative created for participants, which was to assist a manager of a marketing agency in an advertising campaign to promote genetically modified potatoes. Specifically, participants were asked to complete an ideation task requiring them to think of as many ways as possible to use a potato (see van Kleef et al. 2010 for a similar approach).

Procedure

The experiment was framed as a practical exercise as part of an undergraduate business school module. On arrival, participants were seated in a room and provided with instructions for the upcoming session. After completing a pre-task questionnaire assessing trait epistemic motivation, participants received the instruction that they are supposed to contribute to a marketing campaign by Innovate Inc., a marketing agency[2]. They were informed that one of Innovate´s senior managers, Carl Smith, would brief them via a live video stream on what their task involves during the session. The live video stream was displayed on a large screen using a projector. After this introduction, participants received the experimental manipulation followed by the experimental task and a post-task questionnaire containing items pertaining to the manipulation check and remaining study variables[3].

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[2] This type of business engagement as part of a module is not uncommon for students of the school the study was conducted in. Student interactions with company representatives, who are often university alumni, happen on a regular basis, sometimes in the form of an explicit partnership between a module and an organization or by inviting company representatives as guest speakers for lectures. For this study, the fictitious company representative was introduced as a contributor to a practical exercise session in a module led by the main author.

[3] We assessed items for manipulation checks, mediators, and alternative mechanisms relevant for our study after participants completed the creative task (i.e., the dependent variable) to avoid the introduction of a confounding influence and the associated risk to influence the effect of our leader emotion manipulation (Hauser et al. 2018).

Manipulation of Emotional Complexity

We manipulated LEC by showing participants leader displays of happiness and anger either as steady-state or alternating emotions. Participants saw a pre-taped video of a professional actor posing as a leader, briefing participants on the aforementioned project. After introducing himself, the leader explained that he is currently developing a marketing campaign for the world´s biggest chemical company with the purpose of advertising the company's genetically modified potatoes[4]. Next, he outlined what participants needed to do to assist him in his project. Participants were instructed to come up with as many ways as possible to use a potato with a view that those ideas may be used for a TV commercial, and were given eight minutes to work on the task. The speech text was the same across conditions and can be found in Appendix A. The emotional tone of the videos varied, featuring either steady-state (happy or angry displays) or complex emotional expressions (alternations between happy-angry or angry-happy displays)[5]. Leader emotions were manipulated by variations in facial expressions (i.e., smiling or frowning), tone of voice (i.e., pleasant or unpleasant), and body language (i.e., relaxed or tense; see e.g., van Kleef et al. 2009 for a similar approach). The video length was similar across conditions and ranged from 1 minute and 18 seconds to 1 minute 22 seconds. Forty-eight students were randomly assigned to the steady state emotion conditions (i.e., 25 students in the happy condition / 23 students in the angry condition) and 46 students to the complex emotions conditions (i.e., 22 students in the happy-angry / 24 students in the angry-happy condition).

Control of Last Emotional Expression

Manipulating emotional complexity as emotional transitions may raise questions whether the order of expression (i.e., happy-angry vs. angry-happy; Filipowicz et al. 2011) or the valence of the last expression (i.e., positive or negative) has an effect on followers. To account for this, we followed the approach of Sinaceur et al. (2013) and controlled for the leader's last expression in all analyses. Depending on the last emotional display by the leader (i.e., the sequence ending with a happy or angry

[4] Because expressions of ambivalence about controversial topics, such as genetically modified food can be perceived as competence (Pillaud et al. 2018), future research may want to account for this possibility.

[5] We used four emotion-laden passages or three emotional transitions as part of our experimental manipulation so that it a) reflects both possible directions of an emotional shift (i.e., happy to angry and angry to happy) and b) to have a counterbalanced design in which both emotions are displayed equally often (see Filipowicz et al. 2011 and Sinaceur et al. 2013 for a similar approach).

display) participants were allocated in one of the two last expression conditions (Last expression: happy vs. angry).

Measures

Unless mentioned otherwise, items were scored on a 5-point rating scale. Alpha scores for each scale can be found below. See Appendix B for a list of all scale items not previously published.

Creativity. We used the product of novelty and usefulness as an indicator of creativity (see Hoever et al. 2018 for a similar approach). Participant-generated ideas were each coded by two independent coders for novelty and usefulness on a 7-point scale ranging from 1 (not novel/useful at all) to 7 (very novel/useful). Acknowledging the stakeholder-dependent nature of usefulness judgments (George 2008, Hoever et al. 2018), we specified what usefulness meant in the context of our study. The coders assessed usefulness as the degree to which an idea is likely to work well in a TV commercial advertising genetically modified potatoes. Interrater reliability coefficients for novelty (ICC(1) = .90, ICC(2) = .90) and usefulness (ICC(1) = .97, ICC(2) = .97) confirm that there was substantial agreement among raters (Koo and Li 2016). Furthermore, through discussion both raters came to an agreement over any discrepancies regarding novelty and usefulness ratings.

Cognitive flexibility. We used a six-item creative process engagement measure (To et al. 2012) as a proxy for cognitive flexibility as both reflect process-based phenomena conducive to creativity. Creativity scholars consider cognitive flexibility the associative basis of creative process engagement (Mednick 1962, Nijstad et al. 2010). Put differently, cognitive flexibility, or the ease with which followers switch to a different approach or consider a different perspective (Nijstad et al. 2010), is a core feature at every stage of creative process engagement because it enables better problem identification, information search and encoding, and allows to draw from a wide range of alternative courses of action to arrive at creative solutions. Sample items for creative process engagement include "I tried to devise potential solutions that move away from established ways of doing things" and "I thought about the problem from multiple perspectives" ($\alpha = .86$). Study 2 features a validated cognitive flexibility measure to more directly assess our proposed mechanism.

Trait epistemic motivation. We measured trait epistemic motivation using a 11-item need for structure scale (Neuberg and Newsom 1993). Research in the context of social categorization

(Moskowitz 1993) and leadership (van Kleef et al. 2009, van Kleef et al. 2010) testifies to the scale's ability to reliably distinguish between individuals with different trait levels of epistemic motivation. Sample items are "It upsets me to go into a situation without knowing what I can expect from it" and "I hate to be with people who are unpredictable" ($\alpha = .82$). To facilitate the interpretation of findings, responses were recoded so that low need for structure reflects high trait epistemic motivation (see van Kleef et al. 2009 and van Kleef, Anastasopoulou, et al. 2010 for a similar approach).

Manipulation Checks

Manipulation check items were administered after completion of the experimental task and scored on a 7-point rating scale (1 = "not at all" to 7 = "very much").

LEC. Perceived leader complexity was measured with three items adapted from Sinaceur et al. (2013, $\alpha = .80$). A sample items is "To what extent did the leader appear changing?".

Last expression. The last expression check involved the administration of two items each that measured leader happiness and anger both throughout the video stream as well as at the end. Using items adapted from Sinaceur et al. (2013), participants rated how much anger and happiness the leader expressed at the end of the experimental session via the one-item measure "How much did the leader express happiness (anger) at the end of the video stream?". Participants further rated how much anger and happiness the leader expressed throughout the experimental session via the one-item measure "How much did the leader express happiness (anger) in the video stream in general?". The latter measures served as control variables for the last expression manipulation check analyses.

Analytical Strategy

Our hypothesis tests were informed by recommendations on analyses using a multicategorical independent variable (Hayes and Preacher 2014) and moderated mediation (Preacher et al. 2007).

We used path analysis to test proposed main and interactive effects between mean differences of leader steady-state happiness (anger) vs. complex emotional expressions and follower trait epistemic motivation on cognitive flexibility. Using indicator coding, we created two dummy variables (D1 and D2), each representing a mean difference test between two experimental categories

with a predetermined control group[6]. We added z-standardized follower trait epistemic motivation as well as the D1*trait epistemic motivation and D2*trait epistemic motivation interaction terms to our model to control for the relative interaction effect of D2 with trait epistemic motivation (see Hayes and Preacher 2014 for more detailed descriptions). We further controlled for leader's last expression by including a dummy variable (contrast coded 0 for leader happiness and 1 for leader anger).

Proposed mediation and moderated mediation effects were tested by employing bias-corrected bootstrapping procedures with 10,000 bootstrap resamples. As above, we computed D1 and D2 as previously described and included them along with trait epistemic motivation, their two interaction terms, and the last expression dummy into the a-path model predicting z-standardized cognitive flexibility. We also entered cognitive flexibility into the b-path model predicting creativity.

Study 1: Results

Manipulation checks. Supporting that our manipulations were successful, submitting the complexity scale to a 2 (Emotional complexity: steady-state emotions vs. complex emotions) × 2 (Last expression: anger vs. happiness) ANOVA showed that participants in the emotional complexity condition saw the leader as more complex ($M = 4.27$, $SD = 1.70$) than those in the steady state emotions condition ($M = 2.83$, $SD = 1.33$; $F(1, 90) = 21.95$, $p < .001$; $\eta^2_p = .20$).

Moreover, the anger last expression check was submitted to a 2 × 2 ANCOVA and revealed that participants in the angry last expression condition perceived the leader to be more angry at the end ($M = 4.56$, $SD = 2.47$) than those in the happy last expression condition ($M = 1.86$, $SD = 1.34$; $F(1, 89) = 11.29$, $p < .001$; $\eta^2_p = .05$). Similarly, we conducted a happiness last expression check via a 2 × 2 ANCOVA. Participants in the angry last expression condition perceived the leader to be less happy at the end of the video stream ($M = 3.04$, $SD = 2.03$) than did participants in the happy last expression condition ($M = 5.00$, $SD = 1.58$; $F(1, 89) = 6.59$, $p < .05$; $\eta^2_p = .04$).

Hypotheses testing. Descriptives and correlations are displayed in the upper pane of Table 1.

[6] D1 (coded 0 for leader steady-state happiness (anger) and 1 for complex emotions) represented the effect of the mean difference between leader steady-state happiness (anger) and complex emotions on cognitive flexibility, and D2 (coded 0 for leader steady-state happiness and 1 for steady-state anger) the effect of the difference between steady-state happiness and anger on cognitive flexibility.

Path analysis results are presented in Table 2 and Figure 1. We first present results contrasting LEC vs. leader steady-state happiness, followed by analyses contrasting LEC vs. leader steady-state anger.

In line with H1, compared to steady-state happiness LEC predicted cognitive flexibility (β = .50, $p < .05$). LEC was also positively related to creativity (β = 1.28, $p < .01$) and, as proposed by H2, the effect of LEC on creativity was mediated by cognitive flexibility (see Table 6). We also found that the LEC * follower trait epistemic motivation interaction predicted follower cognitive flexibility (β = .61, $p < .05$). Supporting H5a, the slope for high trait epistemic motivation was significant and positive (+1 *SD*, β = 1.11, $p < .01$), indicating that followers who are motivated to cognitively interpret leader emotions exhibited greater cognitive flexibility after observing LEC relative to steady-state happiness. Conversely, the cognitive flexibility of participants with low trait epistemic motivation did not differ after observing LEC (-1 *SD*, β = -.11, *ns*). Figure 2a depicts the interaction.

As reported in Table 6 and in support of H6, moderated mediation analysis for the LEC vs. steady-state happiness comparison showed that the indirect effect was present for followers with high, but not low trait epistemic motivation, and the conditional indirect effect difference was significant.

Compared to steady-state anger, LEC was positively associated with cognitive flexibility (β = .69, t = 2.41, $p < .05$), supporting H1. In line with H2, LEC was positively related to creativity (β = 1.34, $p < .05$), an effect that was mediated by cognitive flexibility (see Table 6). We also found a LEC * follower trait epistemic motivation interaction predicting follower cognitive flexibility (β = .75, $p <$ .01). Supporting H5a, the slope for participants with high trait epistemic motivation was positive (+1 *SD*, β = 1.44, $p <$.01), indicating that a cognitive interpretation of LEC increases follower cognitive flexibility more so than steady-state anger. The simple slope for participants with low trait epistemic motivation, however, was non-significant (-1 *SD*, β = -.06, *ns*), showing that those participants experience no benefit from LEC over angry displays. Figure 2b illustrates the interaction effect.

Concerning moderated mediation, when comparing LEC vs. steady-state anger we found an indirect effect for followers with high, but not low levels of trait epistemic motivation, and that the conditional indirect effects difference was significant. Overall, these findings, summarized in Table 6, support H6 predicting that LEC increases follower creativity for followers with high (but not low)

levels of trait epistemic motivation via increases in follower cognitive flexibility.

Insert Tables 1 and 2 and Figures 1 and 2 about here.

Study 1: Discussion

Study 1 demonstrates that LEC, alternating between happiness *and* anger, enhances follower creativity more so than displays of steady-state emotions such as happiness *or* anger. Our results show that followers who are more likely to cognitively interpret leader emotions (i.e., those with high trait epistemic motivation) are encouraged by LEC to think more flexibly about their work tasks that, in turn, enables greater creativity. Study 1 thus provides initial support for the notion that LEC can have beneficial consequences for follower creativity, and that follower trait epistemic motivation influences the strength of those benefits. In Study 2, we extend our investigation by additionally examining the detrimental consequences of LEC for follower creativity through resource depletion.

Study 2: Method

Similar to Study 1, ninety-six undergraduate students (69 women and 27 men, mean age of 24) enrolled in an organizational behavior course were recruited from a UK-based business school. The experimental task, procedure, and manipulations were the same as in Study 1.

Measures

Creativity. Creativity was coded as the product of novelty (ICC(1) = .94, ICC(2) = .94) and usefulness (ICC(1) = .98, ICC(2) = .98) by two independent coders in the same way as in Study 1. After discussion, both raters came to an agreement over any discrepancies in ratings.

Cognitive flexibility. We measured cognitive flexibility using a 12-item scale developed by Martin and Rubin (1995). Sample items include “I communicated an idea in many different ways” and “I could find workable solutions to seemingly unsolvable problems” ($\alpha = .96$).

Resource depletion. We used Twenge and colleagues’ (2004) 5-item scale to measure resource depletion. Sample items include “I felt drained” and “I had no mental energy left” ($\alpha = .95$).

Trait epistemic motivation. Trait epistemic motivation was assessed using the same reverse-coded personal need for structure scale by Neuberg and Newsom (1993) as in Study 1 ($\alpha = .90$).

Manipulation Check

Leader display of emotional complexity. Perceived leader displays of emotional complexity were measured with a scale developed by the authors in a separate study (see Appendix C for more details). Participants indicated the extent to which their leader's emotional expressions appeared to change during the live stream and then rated eight items that reflect alternations between leader displays of happiness and anger including "happy to irritated" and "angry to joyful" ($\alpha = .97$).

Last expression. The last expression check was the same as in Study 1.

Analytical Strategy

We followed the same analytical strategy as in Study 1. The only notable difference to Study 1 is the inclusion of resource depletion as a parallel mediation process.

Study 2: Results

Manipulation checks. Supporting the success of our experimental manipulations, submitting the LEC scale to a 2 (Emotional complexity: steady-state emotions vs. complex emotions) × 2 (Last expression: anger vs. happiness) ANOVA showed that participants assigned to the LEC condition viewed the leader as more emotionally complex ($M = 5.08$, $SD = 1.67$) than those in the steady-state emotions condition ($M = 2.46$, $SD = 1.23$; $F(1, 94) = 76.04$, $p < .001$; $\eta^2_p = .45$).

Similarly, the anger last expression check was submitted to a 2 × 2 ANCOVA and revealed that participants in the angry last expression condition perceived the leader to be more angry at the end ($M = 5.04$, $SD = 1.96$) than did participants in the happy last expression condition ($M = 2.31$, $SD = 1.72$; $F(1, 91) = 27.48$, $p < .001$; $\eta^2_p = .23$). ANCOVA results for the happiness last expression check similarly suggested that participants in the angry last expression condition perceived the leader to be less happy at the end of the video stream ($M = 3.02$, $SD = 2.11$) than did participants in the happy last expression condition ($M = 4.83$, $SD = 1.78$; $F(1, 91) = 23.80$, $p < .001$; $\eta^2_p = .21$).

Hypotheses testing. Descriptives and correlations for Study 2 are displayed in the lower pane of Table 1. Path analysis results are summarized in Table 3 and Figure 3. We first present results for analyses contrasting LEC vs. leader displays of steady-state happiness, followed by analyses contrasting LEC vs. leader displays of steady-state anger.

As predicted by H1-H4, LEC was positively related to both cognitive flexibility ($\beta = .70$, $p <$

.01) and resource depletion ($\beta = .53$, $p < .05$). Results further demonstrated that LEC positively predicted creativity ($\beta = 2.94$, $p < .05$) and that this relation was positively mediated by cognitive flexibility and negatively mediated by resource depletion (see Table 6). Results also showed that the LEC * follower trait epistemic motivation interaction predicted follower cognitive flexibility ($\beta = .53$, $p < .05$) and resource depletion ($\beta = .69$, $p < .01$). In line with H5a and as illustrated in Figure 4a, analyses for cognitive flexibility showed that the slope for high trait epistemic motivation was significant and positive (+1 *SD*, $\beta = 1.23$, $p < .01$), whereas the slope for low trait epistemic motivation did not significantly differ when observing LEC compared to steady-state happiness (-1 *SD*, $\beta = .17$, *ns*). Analyses for resource depletion revealed, in line with H5b and illustrated in Figure 4b, a significant and positive slope for high trait epistemic motivation (+1 *SD*, $\beta = 1.22$, $p < .01$), whereas the slope for low trait epistemic motivation was not significant (-1 *SD*, $\beta = -.16$, *ns*). These results suggest that followers who are inclined to cognitively interpret leader emotions exhibited greater as opposed to lesser resource depletion after observing LEC relative to steady-state happiness. Moderated mediation analysis for the comparison between LEC vs. steady-state happiness showed that the indirect effect via both cognitive flexibility and resource depletion was present for followers with high but not low trait epistemic motivation, and that in both cases the difference between conditional indirect effects was significant (see Table 6 for more detailed results).

In support of H1, LEC compared to steady-state anger was positively associated with cognitive flexibility ($\beta = .69$, $p < .05$), but unrelated to resource depletion ($\beta = .06$, *ns*). Therefore, H3 was only partially supported, and we were precluded from examining the indirect effect specified in H4. Results further showed that LEC positively predicted creativity ($\beta = 3.89$, $p < .01$) and that this relation was positively mediated by cognitive flexibility (see Table 6), thus supporting H2. We also found that the interaction term between LEC and trait epistemic motivation significantly predicted follower cognitive flexibility ($\beta = .83$, $p < .01$) and resource depletion ($\beta = .66$, $p < .01$). Supporting H5a and depicted in Figure 4c, analyses for cognitive flexibility showed that the slope for high trait epistemic motivation was significant and positive (+1 *SD*, $\beta = 1.51$, $p < .001$), whereas the slope for low trait epistemic motivation did not significantly differ when observing LEC compared to steady-

state anger (-1 *SD*, β = -.14, *ns*). In line with H5b and illustrated in Figure 4d, analyses for resource depletion showed a significant and positive slope for high trait epistemic motivation (+1 *SD*, β = .72, $p < .05$), whereas the slope for low trait epistemic motivation was not significant (-1 *SD*, β = -.60, *ns*). Regarding moderated mediation, comparing LEC vs. steady-state anger we found conditional indirect effects via both cognitive flexibility and resource depletion for followers with, but not low levels of trait epistemic motivation, and the difference being significant in both cases (see Table 6). Overall, these findings support H6 predicting that LEC increases follower creativity for followers with higher levels of trait epistemic motivation via increases in follower cognitive flexibility. Our results also lend support to H7. Followers with a general tendency to cognitively interpret leader emotions experience greater resource depletion after observing LEC, which leads to a stronger negative knock-on effect regarding follower creativity. Finally, to examine H8 we tested whether the mediation effects of the LEC * trait epistemic motivation interaction on follower creativity through cognitive flexibility were stronger than those via resource depletion (see Hoever et al. 2018 for a similar approach). These analyses showed that the positive mediation effect via cognitive flexibility was significantly stronger than the negative mediation effect via resource depletion ($\text{Contrast}_{\text{LEC vs. happiness}}$: c = 3.04; $\text{Contrast}_{\text{LEC vs. anger}}$: c = 4.24, see Table 6). In sum, there is an overall positive interactive effect between LEC and trait epistemic motivation on follower creativity through cognitive flexibility despite the presence of a negative parallel process via resource depletion.

Insert Table 3 as well as Figures 3 and 4 about here.

Study 2: Discussion

Study 2 replicated and extended the results of Study 1 by including resource depletion as a parallel process connecting LEC to follower creativity. Results show that LEC can be both inspiring and tiring for followers, promoting their flexible thinking but at the same time worsening their resource depletion. Although our results suggest that the beneficiaries of LEC also pay a higher cost by expending more self-regulatory resources, we also established that the positive effects through cognitive flexibility are stronger than the negative effects via resource depletion, thus confirming that LEC helps follower creativity more so than it hurts. Although Studies 1-2 established causality for the

effect of LEC in a controlled environment, it is not clear how such leader emotional influence affects follower creativity in a real-world setting. Therefore, we conducted Study 3 in a field setting.

Study 3: Method

We employed an experience sampling design (ESM; Beal 2015) in Study 3 to examine the relationship between LEC and follower creativity in organizations. Adopting a within-person lens is methodologically superior to cross-sectional designs as ESM studies reduce recall bias by assessing constructs closer to the conclusion of the events under investigation (Beal 2015). This is especially relevant for complex emotions as recall bias tends to be particularly inflated (Aaker et al. 2008), threatening to reduce the accuracy of follower ratings obtained as well as the validity of conclusions (Hansbrough et al. 2015). Therefore, we adopted a within-person, ESM design in Study 3, in addition to the between-person design employed in Studies 1-2, to ensure a high level of methodological rigor.

We chose to test our theoretical model using a weekly time interval as opposed to other common time frames adopted in ESM studies (e.g., daily; Beal 2015)[7]. A weekly time interval is especially suitable for the present research for the following reasons: First, employees typically do not interact with their leader on a daily basis and a weekly time frame allows for a greater likelihood to capture leader-follower interactions (see Breevaart et al. 2016 and Lin et al. 2019 for a similar reasoning). Second, creativity requires the display of a variety of behaviors from information search to idea and alternative generation – activities that may stretch beyond a single day (Madrid et al. 2014, Zhang and Bartol 2010). Third, leaders are unlikely to be able to objectively rate their followers' creativity on a daily basis (Ng and Feldman 2012), which is why a weekly time frame is preferable as it allows for the time needed for external managerial recognition of employee creativity.

Sample and Data Collection

We collected data from employees and managers of two small to medium-sized organizations from the UK insurance and care sector, respectively.

Data collection involved the administration of a general survey to measure time-invariant

[7] The appropriateness of a time frame in experience sampling research depends on the research question (Beal 2015, Gabriel et al. 2019). Although choosing longer as opposed to shorter time frames (e.g., weekly as opposed to daily) may comparatively increase recall bias, such decisions can be justified if the assessment of substantive constructs necessitates a longer time frame, such as manager ratings of weekly creativity in the present study.

variables (e.g., trait epistemic motivation) as well as weekly surveys to measure time-variant variables (e.g., LEC and creativity). As part of the general survey, employee – manager dyads were asked to provide their informed consent for study participation and employees indicated their trait epistemic motivation, as well as positive and negative affectivity. Moreover, managers were required to rate their employees' general levels of creativity. The weekly survey involved employee – manager dyads to each complete a short questionnaire on the last day of a working week, for five consecutive weeks. Employees were asked to rate their manager's displayed emotions (i.e., steady state emotions and emotional complexity) as well as their own levels of cognitive flexibility and resource depletion for the respective week. Managers rated their employees' creativity during the same time period. Weekly survey completion began one week after the general survey has been administered and employees were advised not to complete the weekly surveys during weeks without leader-follower interactions.

All surveys were administered over the Internet. Participants received survey links via e-mail or a text message to mobile devices. Prior to the survey period, employees and managers were asked to self-assign a six-digit code. Employee and manager codes along with their e-mail addresses (or alternatively phone numbers) were made available to the principal investigator in order to send out survey links and to match employee and manager ratings after data collection was finalized. In exchange for participation, Amazon gift vouchers worth £200 were raffled off to employees.

Eighty-nine individuals (ten managers and 79 employees), which represent all staff members at the two participating organizations, expressed interest in the study after HR representatives circulated an information sheet. Given the structure of both participating organizations was flat with only one level of hierarchy, we were able to ensure that no participant would be invited as both manager and employee (of a higher-level manager). Out of the potential 89 staff members, 70 (ten managers and 60 employees) responded to the general survey (General survey response rate: 89%), and we received a total of 253 matched weekly employee and manager responses out of a possible 300 over the experience sampling period (Average weekly survey completion: 4.22, weekly survey response rate: 84%). These dyadic- and week-level response rates correspond with those of previously published ESM studies (Fisher & To, 2012). Employee sample: Seventy-eight per cent female with a

mean age of 35.97 (*SD* = 9.70), spent 1.87 years in higher education (*SD* = 1.80), and had 8.14 years (*SD* = 6.94) of work experience, 5.67 years (*SD* = 4.36) of which together with their current manager. Manager sample: Seventy per cent was female with a mean age of 49.40 years (*SD* = 9.79), who spent 2.05 years (*SD* = 1.83) in higher education, and had 11.7 years (*SD* = 9.51) of work experience.

Measures

Unless mentioned otherwise, all items were scored on a 5-point scale. See Appendix B for a list of scale items not previously published.

General trait epistemic motivation. The same need for structure scale (Neuberg and Newsom 1993) was used to measure trait epistemic motivation as in Studies 1-2 (α = .95).

General control variables. We controlled for employee positive and negative affectivity in this study because they may affect the relationship between perceptions of leader behavior and displayed creativity (van Knippenberg and van Kleef 2016). We used the PANAS (Watson et al. 1988) to measure positive and negative affectivity (α = .97 for both). We further controlled for general levels of creativity in our analyses to ensure that our effects are independent of general predispositions to perform creatively. Managers rated their employees' general levels of creativity using a three-item scale by Oldham and Cummings (1996). Sample items are "How original and practical is *employee code*'s work in general?" and "How creative is *employee code*'s work in general?". Items were scored on a 7-point rating scale, ranging from 1 = "not at all" to 7 = "very much" (α = .98). We also controlled for company membership (0 = insurance company, 1 = care company) to rule out that study results would be influenced by company membership[8].

We adapted the time frame of all scale items used so that they referred to the week-level (Breevaart et al. 2016, Lin et al. 2019). Alpha scores for weekly variables are averaged across weeks.

Week-level Perceptions of LEC. Week-level perceptions of LEC were measured using a leader emotional complexity scale (LECS) developed by the authors (see Appendix C). Employees

[8] We explored whether controlling for supervisors has an influence on findings. Reflecting the ten supervisors in our study, we added nine additional dummy variables to our model on Level 2, which initially led to model nonconvergence likely due to overparameterization. Correlation analyses revealed that only one of the supervisors was associated with any of our focal variables. Controlling for this supervisor in our analyses did not substantively change our results. Because control variables can adversely affect study results by soaking up degrees of freedom (Becker et al. 2016), we decided not to control for supervisors in our main analysis.

were asked to indicate how often their manager's emotional expression changed during interactions that took place in the past week. Employees rated eight items that reflect alternations between leader displays of happiness and anger (or vice versa) a 7-point scale ranging from 1 = "not at all" to 7 = "very often": happy to irritated, happy to aggravated, joyful to angry, joyful to aggravated, irritated to happy, aggravated to happy, angry to joyful, and aggravated to joyful (average α = .99).

Week-level cognitive flexibility. Cognitive flexibility was measured by proxy using the same six-item creative process engagement scale as in Study 1 (To et al. 2012, average α = .96).

Week-level resource depletion. We used a two-item fatigue scale used in prior experience sampling research (Beal et al. 2013, average α = .84) to measure resource depletion. Meta-analytical evidence attests that fatigue is a reliable indicator of resource depletion (Hagger et al. 2010). The items are "This week, I felt drained/exhausted" and "This week, I felt very energetic" (reverse-scored).

Week-level Creativity. Managers rated the week-level creativity of their employees by responding to a 3-item scale by Oldham and Cummings (1996, average α = .97) using the same procedure as in the general survey.

Week-level control variables. We controlled for employee week-level perceptions of leader happiness and anger to demonstrate that LEC is more effective than steady-state emotional displays. Employees rated whether their managers displayed certain emotions during leader-follower interactions in the week that just passed with respect to three-item scales reflecting happiness (e.g., "happy", "joyful", average α = .96) and anger (e.g., "angry", "irritated", average α = .93), respectively, on a 7-point scale, ranging from 1 = "not at all" to 7 = "very often" by van Kleef et al. (2006).

Analytical Strategy

Because of the nested data structure (i.e., weeks at Level 1 nested within persons at Level 2), we tested our hypotheses using multilevel structural equation modeling (MSEM; Preacher et al. 2016, Preacher et al. 2010). Concerning our centering strategy, as all Level 1 variables are automatically group-mean centered by default in MSEM (Preacher et al. 2010) we additionally grand-mean centered Level 2 predictors and control variables following centering recommendations for ESM research (see e.g., Gabriel et al. 2019). We also provide Snijders and Bosker's (2012) Pseudo *R*-squared values that

signify how much incremental within-person variance is explained by hypothesis tests (see Table 5).

MSEM allows to test all hypotheses simultaneously in one model (Preacher et al. 2010). We fitted a two-level model in which the within portions of LEC, cognitive flexibility, resource depletion, manager-rated creativity, and weekly control variables were modeled at Level 1, whereas the between-portions of these variables, as well as trait epistemic motivation and general control variables were modeled at Level 2. Level 1 variables were modeled using random slopes except for control variables that were modeled with fixed slopes (Koopman et al. 2016). Cross-level interactions were tested by adding trait epistemic motivation as a predictor of the random slopes for both the weekly LEC – weekly cognitive flexibility link and the weekly LEC – weekly resource depletion relation.

As Hypotheses 2, 4, 6, and 7 imply mediation and moderated mediation effects, we applied MSEM to simultaneously examine the a- and b-paths of our mediation model as well as to model the covariances among random slopes (Bauer et al. 2006, Preacher et al. 2016). We tested the (moderated) mediation effects by constructing confidence intervals (CIs) using the Monte Carlo method (Preacher and Selig 2012). This was done by drawing 20,000 replications from the sampling distribution of the respective product term using a computational tool by Selig and Preacher (2008). In line with Preacher at al. (2007), the magnitude of the moderated mediation effects was calculated as being conditional on the coefficient for the cross-level moderator (i.e., at +/- 1 standard deviations).

Results

To ensure that our variables are conceptually distinct, we conducted a MCFA. At the within-person level we included variables pertaining to LEC, leader happiness and anger, as well as cognitive flexibility, resource depletion, and creativity. At the between-person level, we included trait epistemic motivation, positive and negative affectivity as well as general creativity. MCFA results demonstrate adequate model fit (Browne and Cudeck 1993, Hu and Bentler 1999) for the first-order 10-factor model ($\chi^2(781) = 1721.60$, $p < .001$, TLI = .92, CFI = .93, SRMR within = .04, SRMR between = .10, RMSEA = .069) and provide support of the distinctive factor structure of our study variables.

Hypotheses testing. Table 2 presents means, standard deviations, and intercorrelations among study variables. MSEM results are presented in Table 5 and Figure 5 below.

Supporting H1, LEC was positively associated with cognitive flexibility ($\gamma = 0.18$, $p < .001$).

H2 was also supported: LEC was positively related to follower creativity via cognitive flexibility (see Table 6). However, LEC was unrelated to weekly resource depletion (γ = -0.12, *ns*). Thus, H3 was not supported, and we were precluded from testing H4. In line with Hypothesis 5, we found that the cross-level interaction between LEC and follower trait epistemic motivation significantly predicted cognitive flexibility (γ = 0.19, $p < .001$) and resource depletion (γ = 0.35, $p < .001$). Supporting H5a and depicted in Figure 6a, simple slope tests revealed a positive relationship between LEC and cognitive flexibility for followers with high (+1 *SD* above the mean; γ = 0.35, $p < .001$), but not low (-1 *SD* below the mean; γ = 0.00, *ns*) trait epistemic motivation. In line with H5b and illustrated in Figure 6b, simple slope analyses for resource depletion showed a significant and positive slope for high trait epistemic motivation (+1 *SD* above the mean; γ = 0.20, $p < .001$), whereas the slope for low trait epistemic motivation was significant but negative (-1 *SD* above the mean; γ = -0.43, $p < .001$).

MSEM results including 95% Monte Carlo CIs summarized in Table 6 further showed that the positive indirect effect of LEC on creativity via cognitive flexibility was present for followers with high, but not low trait epistemic motivation, and that the conditional indirect effect difference was significant. Furthermore, the indirect effect of LEC on creativity through resource depletion was negative for followers with high trait epistemic motivation, positive for those with low trait epistemic motivation, and that the conditional indirect effect difference was significant. Taken together, these findings support H6 that predicted a stronger positive effect of LEC on creativity via cognitive flexibility for followers with higher trait epistemic motivation. Our results also support H7 and thus replicate the findings of Study 2 concerning the moderated mediation effects via resource depletion. Followers with higher trait epistemic motivation experience greater resource depletion from LEC, which hampers their subsequent creativity. In addition, we found that low trait epistemic motivation followers are less depleted in weeks in which they observe LEC, with beneficial consequences for their creativity. Finally, we tested H8, that is, whether the mediation effects of the LEC * trait epistemic motivation interaction on follower creativity through cognitive flexibility were stronger than those via with resource depletion. Results showed that the positive mediation effect via cognitive flexibility was significantly stronger than the negative mediation effect via resource depletion (Contrast: $c = .26$; see Table 6). These results therefore provide greater confidence in our inference

that the overall effect of LEC on follower creativity, via cognitive flexibility and contingent on trait epistemic motivation, is positive despite the negative parallel process via resource depletion.

Insert Tables 2, 5, and 6 as well as Figures 5 and 6 about here

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Study 3: Discussion

Study 3 replicated the results of Study 2 including both the inspiring and tiring effects of LEC contingent on followers' trait epistemic motivation with one notable exception. For low trait epistemic motivation followers, the effect of LEC on resource depletion was negative and thus energizing, which differs from the positive, tiring effect that was found for followers with high trait epistemic motivation. A post-hoc explanation of these findings may be that the unpredictable and stress-inducing nature of LEC (Lim et al. 2021) can energize creative action. There is evidence suggesting that stress stemming from complex work demands must not singularly be perceived as tiring but can be activating and energize creative action rather than hamper it (Bunce and West 1994, Byron et al. 2010, Kapadia and Melwani 2021, Sacramento et al. 2013). This aligns with theorizing positing that the activating potential of regular, short-term stress reactions to environmental stimuli can lead to favorable work outcomes, such as adaptive coping (Meurs and Perrewé 2011). Given that Study 3's ESM design enabled capturing leader-follower interactions involving LEC over time (as opposed to the one-off interactions featured in Studies 1-2), this may explain the energizing effect of LEC, reducing resource depletion and promoting creativity. We also suggest that this energizing effect of LEC is more likely to manifest for low trait epistemic motivation followers because they are guided more so by heuristics and stereotypes when making sense of LEC (van Knippenberg and van Kleef 2016), and are thus more likely to base their responses on their prevailing experiential state during repeated interactions (e.g., van Kleef et al. 2009). Given stress can, under certain conditions, be an activating experience, we suggest that interactions with LEC have the potential to generate energetic activation (Quinn et al. 2012) for low trait epistemic motivation followers, which replenishes their resources over time and energizes creative action.

General Discussion

Decades have passed since Teresa Amabile (1996) provided an account of how emotions may

influence creativity. Since that time, research relating emotions to creativity has burgeoned (Baas et al. 2008, Davis 2009) and a consensus emerged highlighting the benefits of complex emotions for achieving creative performance in organizations (Bledow et al. 2013, George and Zhou 2007). Yet, the accumulated body of knowledge on the *intra*personal effects of emotional complexity is not matched by an equally elaborate evidence base on the *inter*personal consequences of emotional complexity in leader-follower interactions. We believe that LEC expressed as emotional transitions is a critical puzzle piece towards more comprehensively understanding the impact of emotional complexity on the creativity of organizations and their members. Indeed, our results across both experimental (Studies 1-2) and field contexts (Study 3) show that despite an increase in follower resource depletion and an associated reduction in creativity prompted by LEC, overall, LEC in leader-follower interactions enhances follower creativity by inspiring greater cognitive flexibility.

Theoretical and Practical Implications

Our research responds to calls for a more holistic view of emotional complexity by considering its consequences in leader-follower interactions (Rothman and Melwani 2017). We extend prior research on emotional complexity that focused on the benefits of intrapersonal experiences of emotional complexity, including work on affective shifts (Bledow et al. 2013) and the dual tuning approach (George and Zhou 2007). Although these studies have significantly advanced our understanding of how felt emotional complexity fosters employee creativity, the intrapersonal perspective in these studies does not capture how emotional complexity enhances creativity in interpersonal processes. We established an interpersonal perspective on emotional complexity by examining how LEC influences cognitive reactions and follower creativity.

It may be noted that we, like other studies (Filipowicz et al. 2011, Sinaceur et al. 2013), focused on emotional complexity as expressed emotional transitions, whereas other work focused on emotional complexity as expressed ambivalence (Rothman, 2011, Rothman and Northcraft, 2015). The question thus arises whether the interpersonal effects of both forms of emotional complexity have similar consequences. On one hand, our findings on the positive effects of leader emotional transitions between happiness and anger for follower creativity are comparable to findings by Rothman and Northcraft (2015), who showed that expressing emotional ambivalence leads to integrative and thus

more creative negotiation outcomes. On the other hand, Rothman (2011) demonstrated that expressed emotional ambivalence signals low power to observers, whereas it is unlikely this effect would replicate for emotional transitions given both happiness (Hareli et al. 2009) and anger (Tiedens 2001) are dominant emotions that may signal power, presumably also when expressed in succession. Similarly, Lim et al. (2021) demonstrate that leader emotional ambivalence expressed at a follower (i.e., an integral display) is perceived as more unpredictable than when it is expressed at another team member (i.e., an incidental display). This may imply that incidental LEC, either expressed as ambivalence or emotional transition, would be perceived as less threatening and could thus be more effective in leader-follower interactions. A direction for future research thus is to explore the (dis)similarities between these two expressions of interpersonal emotional complexity.

Our work also advances research suggesting that leadership styles that bear some semblance to LEC, such as transformational (Eisenbeiss et al. 2008) or paradoxical leadership (Zhang et al. 2015), influence follower creativity contingent on follower predispositions such as higher emotional intelligence (Parke et al. 2015), higher integrative complexity (Shao et al. 2019), or lower holistic thinking (Zhang et al. 2022). While the validity of multi-dimensional leadership styles, such as transformational leadership, has recently been called into question because of definitional, conceptual, and measurement issues (van Knippenberg and Sitkin 2013), we suggest that effective leadership for follower creativity may not require displaying the wide-ranging spectrum of behaviors contained in the dimensions that make up transformational or paradoxical leadership but can instead be achieved by displaying select nonverbal behaviors such as LEC (see also Hemshorn de Sanchez et al. 2022). In support, supplemental analyses in Study 2 showed that LEC is unrelated to transformational and paradoxical leadership and the effects of LEC on follower creativity hold when controlling for these (as well as for emotional intelligence and integrative complexity; see Appendix F for further details).

Our research broadens our understanding of the functional and dysfunctional interpersonal consequences of emotional complexity. On one hand, individuals tend to dislike dissonance (Festinger 1957) and aim to reduce the associated states of conflict, tension, or discomfort (Peng and Nisbett 1999). Such reactions to emotional complexity can detrimentally affect work-related outcomes, for instance by undermining effective decision-making (van Harreveld et al. 2015). On the other hand, if

individuals embrace feelings of emotional complexity, they may reap their functional benefits such as improved creativity (Bledow et al. 2013). Prior scholarship has mostly examined the positive or negative consequences of emotional complexity in isolation. Instead, we believe that an examination of the co-occurrence of both functional and dysfunctional interpersonal consequences of emotional complexity offers a significant theory-building opportunity. By integrating notions from the literatures on emotional complexity (Rothman and Melwani 2017) and self-regulation (Johnson et al. 2018), we demonstrate the dysfunctional consequences of LEC in terms of depleting followers' self-regulatory resources. We also establish LEC's functional consequences by testing the prediction that emotional complexity leads to greater cognitive flexibility (Rothman and Melwani 2017). In so doing, we respond to calls to examine both positive and negative consequences of LEC (Rothman et al. 2017).

Our work also speaks to the manner in which LEC contributes to creativity. Research highlights that cognitive flexibility is a pathway to greater creativity because it enables the use of broader cognitive categories, allowing for more original associations between distant concepts (Baas et al. 2011, De Dreu et al. 2008, Nijstad et al. 2010). Our research suggests that LEC is a potent interpersonal driver of follower cognitive flexibility and thus highlights a slightly different cognitive mechanism, that is enhanced cognitive flexibility as a result of cognitively interpreting LEC, compared to previous intrapersonal emotional complexity research focused on the simultaneous (George and Zhou 2007) or successive (Bledow et al. 2013) engagement in analytical and divergent thinking as a consequence of cognitively interpreting one's own felt emotions. Apart from the benefits of LEC for cognitive flexibility, we also identified resource depletion as a co-occurring, detrimental interpersonal consequence, which hampers follower creativity. This is consistent with theories on emotional complexity (Rothman and Melwani 2017) and self-regulation (Johnson et al. 2018), and demonstrates that LEC can be both inspiring and tiring. Importantly, analyses of both Studies 2 and 3 showed that despite the presence of a negative resource-depleting effect of LEC, the positive interpersonal effects via cognitive flexibility are stronger, leading to an overall positive relationship between LEC and follower creativity. These findings can inform organizational practice on how to take optimal advantage of the creativity-inducing effects of LEC by supporting activities that replenish self-regulatory resources consumed during leader-follower interactions. Specifically,

followers could be given sufficient opportunities to take breaks (Trougakos et al. 2014), engage in small talk (Methot et al. 2021), to psychologically detach from work at home (Sonnentag and Kühnel 2016), and make sure to have a good night's sleep (Rivkin et al. 2023). Combined, these activities should aid followers in the recovery of self-regulatory resources, mitigate LEC's negative impact via resource depletion, and optimize the creativity-related benefits that accrue from observing LEC.

Finally, our work acknowledges the interactionist perspective in creativity research that advocates for a person-in-situation examination of creativity-related phenomena (Woodman et al. 1993). To that end, we bridge disparate theoretical streams on the social functions of steady-state emotions (van Knippenberg and van Kleef 2016) and emotional complexity (Rothman and Melwani 2017) by examining trait epistemic motivation as a moderator of the effects of LEC on followers. The literature on leadership and affect generally highlights that leader emotions can elicit either cognitive or affective reactions in followers, and that the likelihood of cognitive reactions is increased for followers with high trait epistemic motivation (van Knippenberg and van Kleef 2016). The interpersonal effects of LEC, however, are theorized to be predominantly cognitive in nature (Rothman and Melwani 2017), and we thus expected stronger effects for followers with high trait epistemic motivation. Based on this theoretical rationale, we found that, due to their tendency to cognitively interpret leader emotions, followers with high trait epistemic motivation are more inspired by LEC in terms of greater cognitive flexibility while also being more worn out by such leader-follower interactions, thus experiencing more severe resource depletion. Our research thus extends the interpersonal emotional complexity literature by adding trait epistemic motivation as a relevant moderator for the effects of LEC. The takeaway from this for organizations is that they may want to assess trait epistemic motivation as part of their recruitment and selection activities and choose candidates with high trait epistemic motivation to ensure that future employees will be more receptive to the interpersonal effects of LEC that drive follower creativity. Although our findings solely speak to trait epistemic motivation, research shows that epistemic motivation can also be influenced by situational factors such as environmental noise, process accountability or cognitive load (Kruglanski and Webster 1996, Lerner and Tetlock 1999). As a result, a viable additional strategy for organizations to reap the benefits of LEC for follower creativity could be to situationally induce

epistemic motivation by, for instance, ensuring that environmental noise is reduced as well as allowing for higher employee accountability at work while keeping workloads at a reasonable level.

General Limitations

Our work has limitations that should inform future research. We operationalized LEC as alternations between displayed happiness and anger. Future studies could explore whether different operationalizations of LEC (e.g., using emotions that are less certain or uniformly engaging or disengaging; Kitayama et al. 2006, Smith and Ellsworth 1985) have similar effects. For instance, expressing LEC with less certain emotions (e.g., fear and surprise) would put a greater burden on cognitive interpretation that may complicate followers' interpretive efforts and thus promote cognitive flexibility to a lesser extent. Moreover, emotions that are uniformly perceived as either socially engaging (e.g., happiness and guilt) or socially disengaging (e.g., pride and anger) may be interpreted as less unpredictable because they convey more coherent signals, therefore consume fewer self-regulatory resources when observed, and thus lead to less resource depletion. Furthermore, we theoretically argue that the inspiring effect of LEC is due to a social learning mechanism according to which LEC signals cognitive flexibility to followers, which is emulated by them to foster creativity (Rothman and Melwani 2017). However, given that LEC can also signal unpredictability (Lim et al. 2021), it may be possible that the inspiring effects of LEC are due to followers attempting to cope with their leader's unpredictability (Rothman et al. 2017), which may in turn promote cognitive flexibility and subsequent creativity. Yet, we want to highlight that such generative reactions to experiencing unpredictability should be less likely as ambivalence and unpredictability in relationships has repeatedly been shown to lead to depletion and social disengagement rather than further engagement with a task or the ambivalent actor (Lim et al. 2021, Rothman et al. 2017). In addition to this, positive work reactions due to managing or adjusting to unpredictability are rooted in emotional complexity theory on an intrapersonal level (Rothman and Melwani 2017) and must not squarely translate to the interpersonal level that is the focus of the present research. Similarly, we theoretically infer that followers with higher trait epistemic motivation are more likely to cognitively interpret LEC, thereby strengthening its inspiring effects. One could speculate whether trait epistemic motivation might (also) be associated with greater willingness to effortfully and systematically

respond to their leader's signaling (i.e., increase creative effort based on the signal rather than more carefully process the signal). With the present data, we cannot rule out the possibility that this may also have played a role in the observed effects. We do believe, however, that our theory and interpretation is more parsimonious in that it is completely aligned with both research on epistemic motivation in general (De Dreu et al. 2008, Kruglanski and Webster 1996) and with research on epistemic motivation and leader affective displays specifically (van Knippenberg and van Kleef 2016), whereas this alternative interpretation, to the best of our knowledge, does not have a precedent in theory and research on trait epistemic motivation. Both our theoretical model and methodological approach to studying LEC could thus be extended and serve as a catalyst for future research.

Given that we used the same experimental stimulus in Studies 1-2 to manipulate LEC, this may raise concerns whether the replication of findings is due to a methodological artifact. But, the fact that we used an ESM design in Study 3 and replicated our results across different methodologies allays this concern. Methodological limitations of Study 3 include elevated correlation coefficients between Level 2 variables (e.g., trait epistemic motivation) and Level 1 variables (e.g., weekly cognitive flexibility) that may raise the question of whether multicollinearity affected study results. Despite research showing that multicollinearity does not bias parameter estimates in multilevel analyses (Yu et al. 2015), we took further precautions to rule out the possibility of an adverse effect. High correlations between both positive as well as negative affectivity and creativity are to be expected (Baas et al. 2008) because positive affect enables more divergent thinking whereas negative affect promotes analytical thinking and undermines creativity (Davis 2009). Similarly, trait epistemic motivation, cognitive flexibility and creativity can be expected to be positively correlated because individuals with high trait epistemic motivation are less likely to prematurely self-impose structure on ill-defined, ambiguous situations and problems (Rietzschel et al. 2007). Furthermore, we centered study variables, which further alleviates multicollinearity concerns (Hoffman and Gavin 1998). We also minimized the risk of common method and source bias for all studies conducted (Podsakoff et al. 2012) by obtaining external coder ratings of creativity in Studies 1 and 2 as well as weekly manager ratings of follower creativity in Study 3. It should also be acknowledged that our ESM sample has relatively few observations per Level 2 unit (i.e., M = 4,22 weeks). However, sample sizes in ESM

studies should be informed by both relevant timeframes within which phenomena of interest unfold and how they compare to published ESM research (Gabriel et al. 2019). We believe that our Level 1 sample size is sufficient because with on average over four weeks it covers a sufficient time period for the study work-related influences on creativity and is in line with recent weekly ESM research on creativity at work (Stollberger et al. 2022). Finally, while Study 3's ESM design allowed us to reveal that LEC promotes creativity for followers with high epistemic motivation because the associated inspiring effects are stronger than the tiring effects on a weekly basis, it may be possible for LEC's negative consequences via resource depletion to accumulate on a daily or within-daily basis, hampering follower creativity on those days. Because such an investigation is beyond the scope of the present research, future researchers may want to adopt ESM designs with shorter time intervals and employ growth modeling (Von Soest and Hagtvet 2011) to explore resource depletion trajectories.

Conclusion

We conclude that the intrapersonal view on emotional complexity and creativity can be complemented with a perspective on the social functions of emotional complexity. The current research advances an interpersonal perspective whereby observing leader expressions of emotional complexity can tire out followers and compromise their creativity, but even more so inspire them to think more flexibly about their work, which overall translates into greater creativity.

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Table 1
Studies 1-2: Means, Standard Deviations, and Intercorrelations among Study Variables[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Study 1																
1. Leader emotional complexity	0.49	0.50	—													
2. Cognitive flexibility	2.65	1.53	.31**	—												
3. Negative affect	1.27	0.35	.05	-.13	—											
4. Emotional ambivalence	0.59	0.51	-.20	-.38**	.57**	—										
5. Leader losing his mind	3.22	1.35	-.06	-.20	.25*	.39**	—									
6. Creativity	10.35	2.02	.42**	.34**	-.13	-.25*	.03	—								
7. Trait epistemic motivation	2.87	0.63	.13	.21**	-.09	-.19	.00	.30**	—							
8. Leader last expression	0.48	0.50	-.00	-.13	-.02	-.00	.07	.17	-.03	—						
Study 2																
1. Leader emotional complexity	0.52	0.50	—													
2. Cognitive flexibility	3.68	1.68	.31**	—												
3. Negative affect	1.81	0.99	-.06	-.05	—											
4. Emotional ambivalence	1.19	1.13	-.10	-.14	.92**	—										
5. Leader losing his mind	2.86	1.07	.01	.17	.17	.10	—									
6. Creativity	10.02	7.49	.40**	.64**	.09	-.02	.13	—								
7. Trait epistemic motivation	3.08	0.84	.14	-.06	.35**	.30**	-.15	.21*	—							
8. Leader last expression	0.50	0.50	-.04	.13	-.04	-.12	.06	.12	.02	—						
9. Resource depletion	2.57	1.66	.15	-.17	.33**	.35**	.15	-.23*	.04	-.10	—					
10. Transformational leadership	3.25	1.12	-.10	.11	.04	.05	.09	-.09	-.17	-.07	.20	—				
11. Paradoxical leadership	3.16	1.10	-.14	.34**	.11	.03	.36**	.12	-.16	.01	.13	.56**	—			
12. Leader authenticity	3.85	1.03	.12	.16	.20*	.21*	-.25**	.09	.07	.18	.14	.16	.04	—		
13. Emotional intelligence	3.87	0.76	.03	.23*	-.24*	-.21*	.17	-.03	-.48**	-.01	.09	.10	.04	-.13	—	
14. Integrative complexity	3.67	0.58	.11	.26**	-.28**	-.25**	.10	.02	-.48**	-.01	.11	.05	.21*	.06	.65**	—

Note. [a]Study 1 $n = 94$. Study 2 $n = 96$. Leader emotional complexity is dummy-coded (0 = steady-state emotions, 1 = complex emotions)
* $p < .05$ ** $p < .01$

Table 2
Study 1: Path analysis results

	Cognitive Flexibility (Leader steady-state happiness as control group)			Cognitive Flexibility (Leader steady-state anger as control group)			Creativity (Leader steady-state happiness as control group)			Creativity (Leader steady-state anger as control group)		
Predictor	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*
Leader emotional complexity (D1)	.50	.24	2.07*	.69	.29	2.41*	1.28	.48	2.68**	1.33	.63	2.11*
Leader steady-state emotions[1] (D2)	-.19	.38	-.50	.19	.38	.50	-.05	.74	-.07	.05	.74	.07
Trait epistemic motivation	-.13	.22	-.62	-.27	.26	-1.06	.44	.19	2.34*	.44	.19	2.34*
Leader emotional complexity x Trait epistemic motivation	.61	.25	2.41*	.75	.29	2.61**						
Leader steady-state emotions x Trait epistemic motivation	-.14	.33	-.41	.14	.33	.41						
Last expression	-.19	.25	-.77	-.19	.25	-.77	.85	.67	1.28	.85	.67	1.28
Cognitive flexibility							.45	.20	2.23*	.45	.20	2.23*
R^2			.26			.26			.31			.31
n			94			94			94			94

Note.[1]= Leader steady-state emotions refers to the effect of the respective other steady-state emotion than the one in the control group e.g., D2 refers to the effect of leader displays of steady-state anger (happiness) when the control group is leader steady-state happiness (anger). *p < .05 **p < .01

Table 3
Study 2: Path analysis results

	Cognitive Flexibility (Leader steady-state happiness as control group)			Cognitive Flexibility (Leader steady-state anger as control group)			Resource Depletion (Leader steady-state happiness as control group)			Resource Depletion (Leader steady-state anger as control group)			Creativity (Leader steady-state happiness as control group)			Creativity (Leader steady-state anger as control group)		
Predictor	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*
Leader emotional complexity (D1)	.70	.25	2.83**	.69	.27	2.57*	.53	.27	2.01*	.06	.27	.21	2.94	1.29	2.28*	3.89	1.41	2.76**
Leader steady-state emotions[1] (D2)	.01	.38	.03	-.01	.38	-.03	.47	.39	1.23	-.47	.39	-1.23	-.95	2.11	-.45	.95	2.11	.45
Trait epistemic motivation	-.37	.12	-2.98**	-.67	.26	-2.57*	-.36	.11	-3.22**	-.33	.13	-2.51*	1.58	.68	2.33*	1.58	.68	2.33*
Leader emotional complexity x Trait epistemic motivation	.53	.22	2.46*	.83	.31	2.66**	.69	.22	3.13**	.66	.23	2.88**						
Leader steady-state emotions x Trait epistemic motivation	-.30	.29	-1.05	.30	.29	1.05	.03	.17	.15	-.33	.13	-2.51*						
Last expression	-.19	.30	-.61	.19	.30	.61	-.49	.34	-1.45	-.49	.34	-1.45	1.00	1.95	.51	1.00	1.95	.51
Cognitive flexibility													4.12	.67	6.16***	4.12	.67	6.16***
Resource depletion													-1.25	.47	-2.67**	-1.25	.47	-2.69**
R^2			.23			.23			.15			.15			.50			.50
n			96			96			96			96			96			96

Note.[1]= Leader steady-state emotions refers to the effect of the respective other steady-state emotion than the one in the control group e.g., D2 refers o the effect of leader displays of steady-state anger (happiness) when the control group is leader steady-state happiness (anger). *p < .05 **p < .01

Table 4
Study 3: Means, Standard Deviations, and Intercorrelations among Study Variables[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
Level 1 predictors													
1. Leader emotional complexity	3.86	1.98	—										
2. Leader happiness	2.65	1.53	-.55**	—									
3. Leader anger	1.88	0.95	-.30**	-.29**	—								
4. Resource depletion	2.77	0.79	-.33**	-.04	.44**	—							
5. Cognitive flexibility	3.61	1.01	.34**	.09	-.50**	-.75**	—						
6. Creativity	4.72	1.62	.27**	.11	-.34**	-.47**	.63**	—					
Level 2 predictors													
7. General creativity	4.75	1.74	.32*	-.07	-.45**	-.57**	.63**	.66**	—				
8. Trait epistemic motivation	3.17	0.92	.60**	-.42**	-.54**	-.68**	.80**	.73**	.71**	—			
9. Positive affectivity	3.62	0.99	.06	.22	-.52**	-.50**	.58**	.50**	.71**	.62**	—		
10. Negative affectivity	1.85	0.92	-.10	-.12	.48**	.48**	-.58**	-.46**	-.72**	-.63**	-.88**	—	
11. Organisation[b]	0.58	0.50	.40**	-.37**	-.03	.15*	.04	.29*	-.05	.00	-.21	.19	—

Note. [a]Level 1 (week-level) $n = 253$; Level 2 (person-level) $n = 60$. Correlations for the Level 1 variables represent group mean centred relations among weekly variables at the within-person level of analysis. Level 1 variables were aggregated to provide correlations with Level 2 variables. [b]1= care company, 0 = insurance company. * $p < .05$ ** $p < .01$.

Table 5
Study 3: MSEM results

Variable	Cognitive Flexibility			Resource Depletion			Creativity		
	γ	*SE*	*t*	γ	*SE*	*t*	γ	*SE*	*t*
Level 2 predictors									
Between leader emotional complexity	-0.26	0.47	-0.56	0.06	0.62	0.09	-0.43	0.99	-0.43
Between leader happiness	-0.07	0.49	-0.13	-0.27	0.63	-0.43	-0.50	0.65	-0.76
Between leader anger	-0.83	0.52	-1.58	1.05	0.73	1.44	-0.07	2.18	-0.03
Between cognitive flexibility							-0.11	0.15	-0.71
Between resource depletion							0.13	1.16	0.11
General creativity	0.06	0.09	0.69	-0.06	0.11	-0.53	0.36	0.23	1.55
Trait epistemic motivation	-0.31	0.24	-1.32	-0.06	0.17	-0.35	0.05	0.28	0.17
Positive affectivity	-0.36	0.18	-1.98*	0.57	0.21	2.69**	0.44	0.70	0.63
Negative affectivity	-0.21	0.20	-1.01	-0.03	0.25	-0.10	0.51	0.36	1.42
Organisation[a]	0.04	0.24	0.17	0.20	0.26	0.78	1.01	0.27	3.73***
Level 1 predictors									
Within leader emotional complexity	0.18	0.05	3.80***	-0.12	0.07	1.63	0.13	0.08	1.61
Within leader happiness	0.08	0.04	1.87	-0.05	0.05	-1.06	0.17	0.08	2.02*
Within leader anger	-0.26	0.04	-6.18***	0.20	0.05	4.16***	0.04	0.09	0.44
Within cognitive flexibility							0.65	0.14	4.53***
Within resource depletion							-0.41	0.15	-2.76**
Cross-level interaction									
Leader emotional complexity X Trait epistemic motivation	0.19	0.04	4.85***	0.35	0.03	13.02***			
Pseudo-R^2	0.23			0.04			0.02		

Note. [a] 1= care company, 0 = insurance company. * $p < .05$ ** $p < .01$ *** $p < .001$. MSEM results reported above were taken from a model that simultaneously tested all study hypotheses. Level 1 variables are decomposed into their within and between effects and inlcuded as Level 1 and Level 2 predictors to avoid conflated and thus biased effects (Preacher et al., 2010). Level 2 variables have no within effects and are solely included as Level 2 predictors. Pseudo-R2 of the moderated mediation model refers to the reduction in the dependent variable's Level 1 variance compared to a mediation model excluding the cross-level interaction. Level 1 variables showed considerable variance at the week-level (i.e., LEC = 40%, leader happiness = 48%, leader anger = 78%, cognitive flexibility = 41%, resource depletion = 48%, creative performance = 47%), thus justifying our multilevel approach (Snijders & Bosker, 2012).

Table 6
Studies 1-3: Moderated mediation results[a]

	Cognitive Flexibility				Resource Depletion				Cognitive Flexibility vs. Resource Depletion
	Mediation	High TEM	Low TEM	Difference	Mediation	High TEM	Low TEM	Difference	Contrast
Outcome	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower	Upper, Lower
Study 1									
Creativity (LEC vs. happiness)	**0.68, 0.01**	**1.21, 0.08**	0.26, -0.51	**1.46, 0.04**					
Creativity (LEC vs. anger)	**0.85, 0.02**	**1.64, 0.08**	0.34, -0.34	**1.78, 0.06**					
Study 2									
Creativity (LEC vs. happiness)	**5.41, 0.96**	**9.28, 2.17**	3.04, -1.70	**8.78, 0.90**	**-0.07, -1.97**	**-0.44, -3.39**	1.18, -0.61	**-0.48, -3.76**	**5.22, 1.27**
Creativity (LEC vs. anger)	**5.75, 0.75**	**11.02, 2.76**	2.59, -3.80	**13.67, 2.55**	N/A	**-0.13, -2.38**	2.36, -0.01	**-0.38, -3.76**	**7.48, 1.87**
Study 3									
Creativity	**0.20, 0.05**	**0.37, 0.11**	0.08, -0.08	**0.38, 0.11**	N/A	**-0.02, -0.17**	**0.32, 0.05**	**-0.07, -0.45**	**0.38, 0.15**

Note. [a] Confidence intervals (CIs) for (conditional) indirect effects were calculated following recommendations by Preacher and Selig (2012) as well as Koopman et al. (2016). (Moderated) mediation is established when the CIs for the difference in the (conditional) indirect effects exclude zero (Koopman et al. 2016). CIs that exclude zero are presented in bold type. N/A = hypothesis test was not applicable due to a non-significant individual path. TEM = trait epistemic motivation.

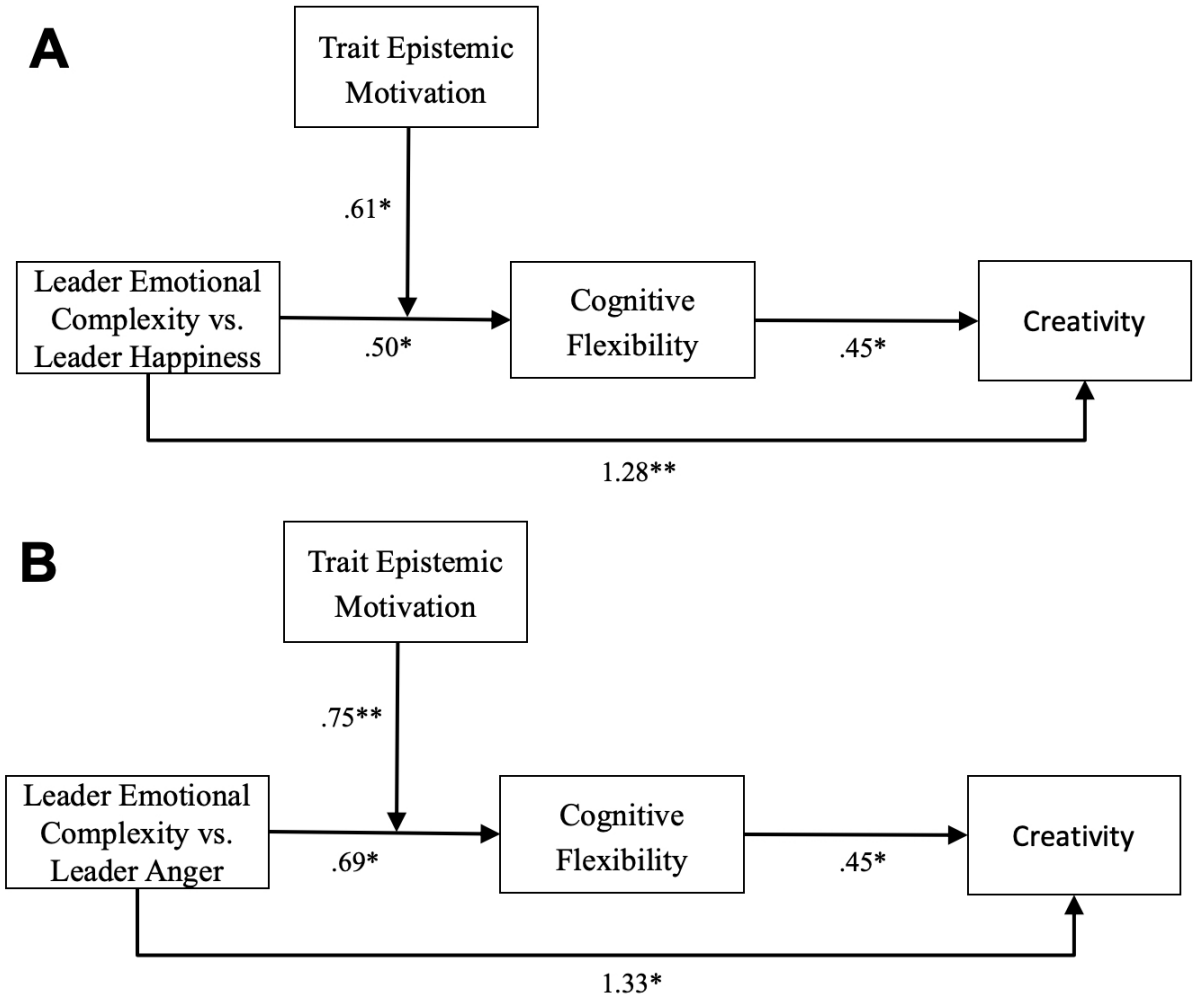

Figure 1. Study 1: Results of path analyses. A: Results where leadership emotional complexity is coded 0 = Leader Steady-State Happiness, 1 = Leader Emotional Complexity, B: Results where leadership emotional complexity is coded 0 = Leader Steady-State Anger, 1 = Leader Emotional Complexity. *$p < .05$, **$p < .01$.

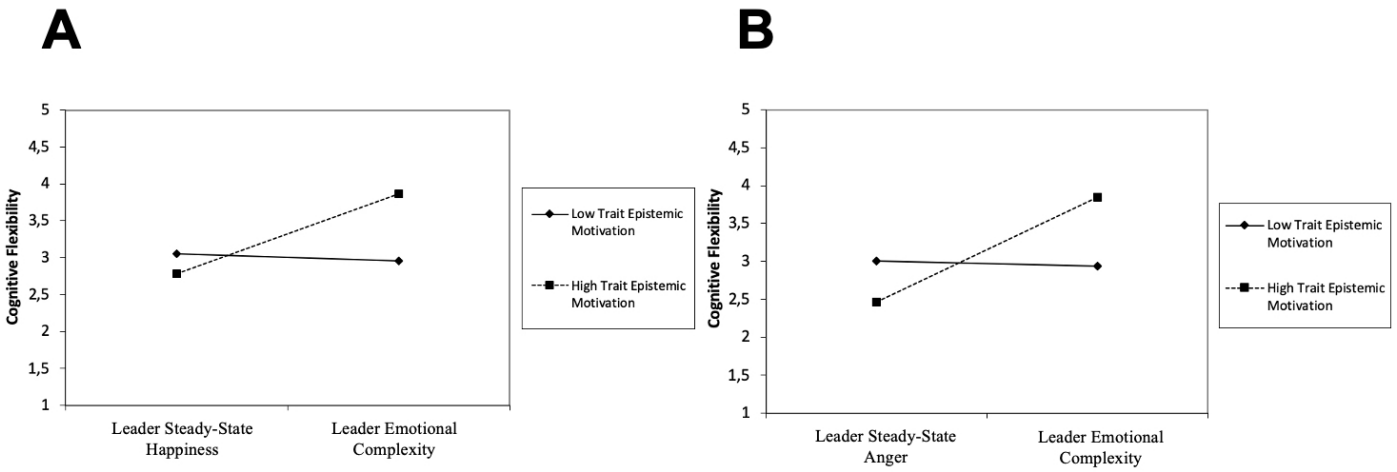

Figure 2. Study 1: Moderating effect of follower trait epistemic motivation on the relationship between leader emotional complexity and follower cognitive flexibility. A: Leader emotional complexity is coded 0 = Leader Steady-State Happiness, 1 = Leader Emotional Complexity, B: Leader emotional complexity is coded 0 = Leader Steady-State Anger, 1 = Leader Emotional Complexity.

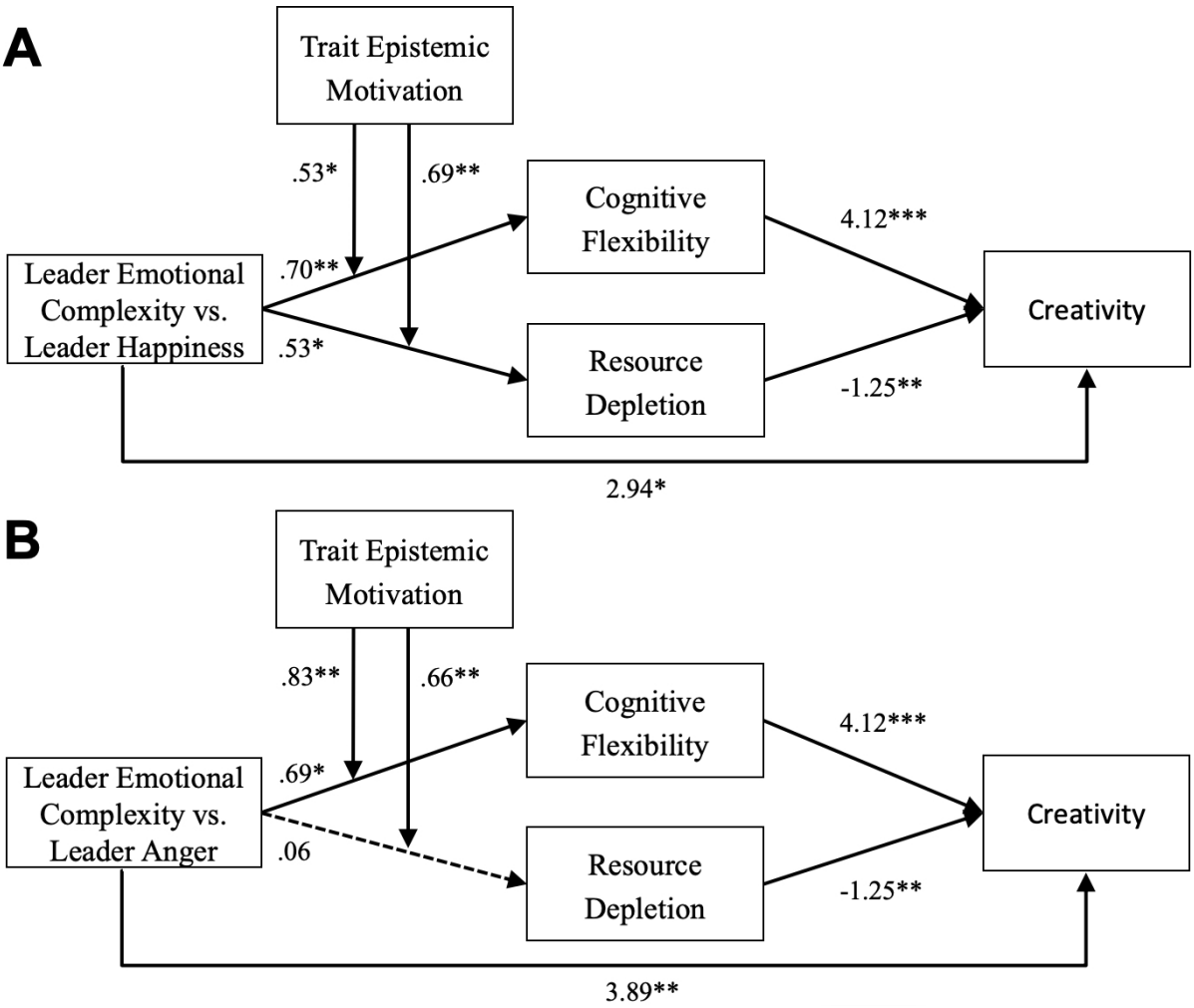

Figure 3. Study 2: Results of path analyses. A: Results where leadership emotional complexity is coded 0 = Leader Steady-State Happiness, 1 = Leader Emotional Complexity, B: Results where leadership emotional complexity is coded 0 = Leader Steady-State Anger, 1 = Leader Emotional Complexity. *$p < .05$, **$p < .01$, ***$p < .001$.

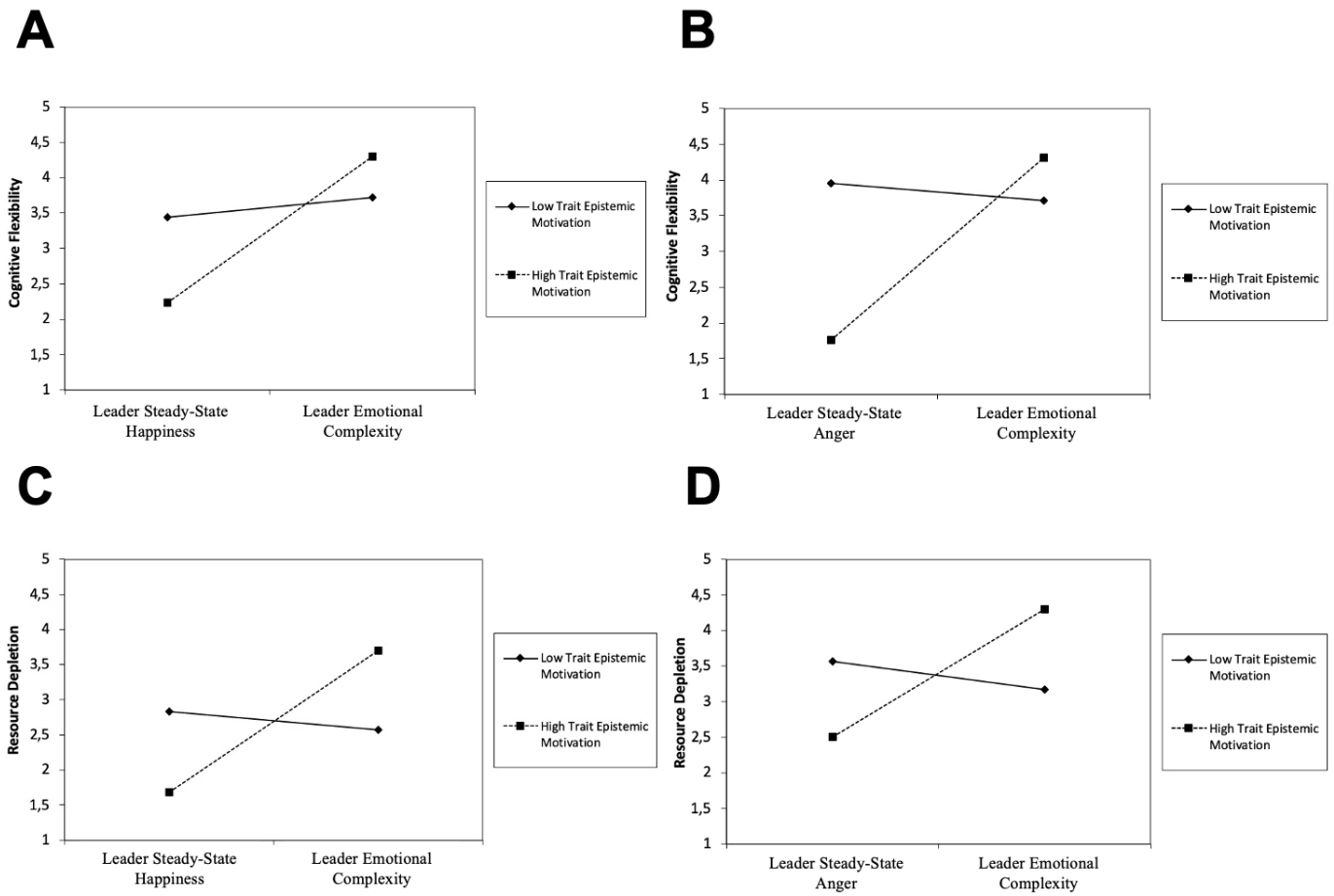

Figure 4. Study 2: Moderating effect of follower trait epistemic motivation on the relationship between leader emotional complexity and follower cognitive flexibility as well as follower resource depletion. A/C: Leader emotional complexity is coded 0 = Leader Steady-State Happiness, 1 = Leader Emotional Complexity, B/D: Leader emotional complexity is coded 0 = Leader Steady-State Anger, 1 = Leader Emotional Complexity.

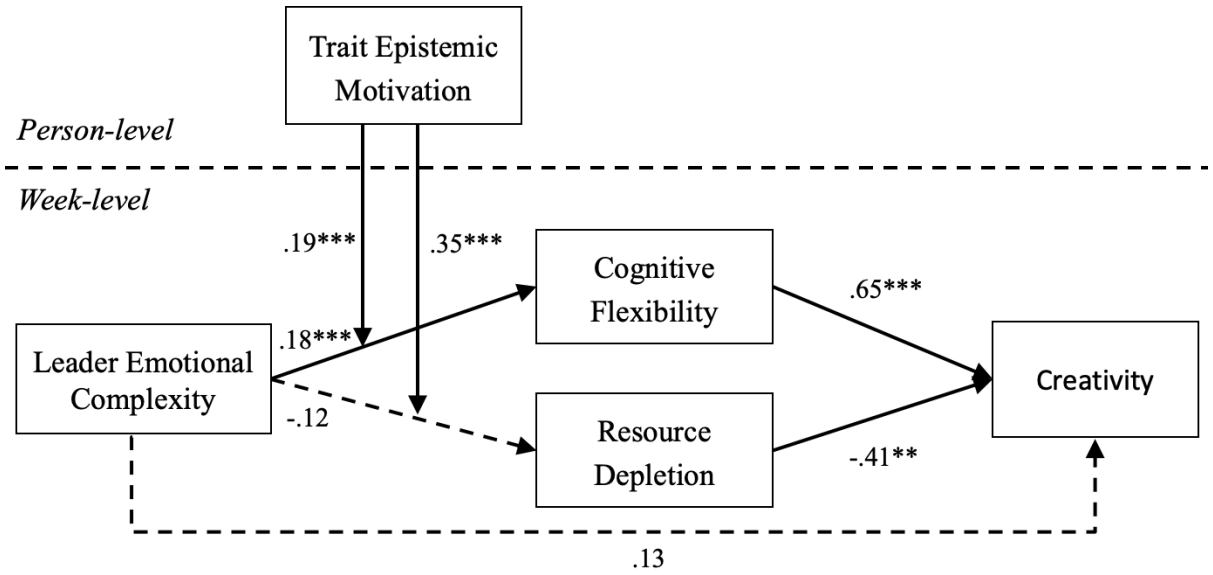

Figure 5. Study 3: MSEM results simultaneously testing all study hypotheses. Level 1(week-level) n = 253; Level 2 (person-level) n = 60. Control variable paths are not displayed for ease of reading. *p < .05, **p < .01, ***p < .001.

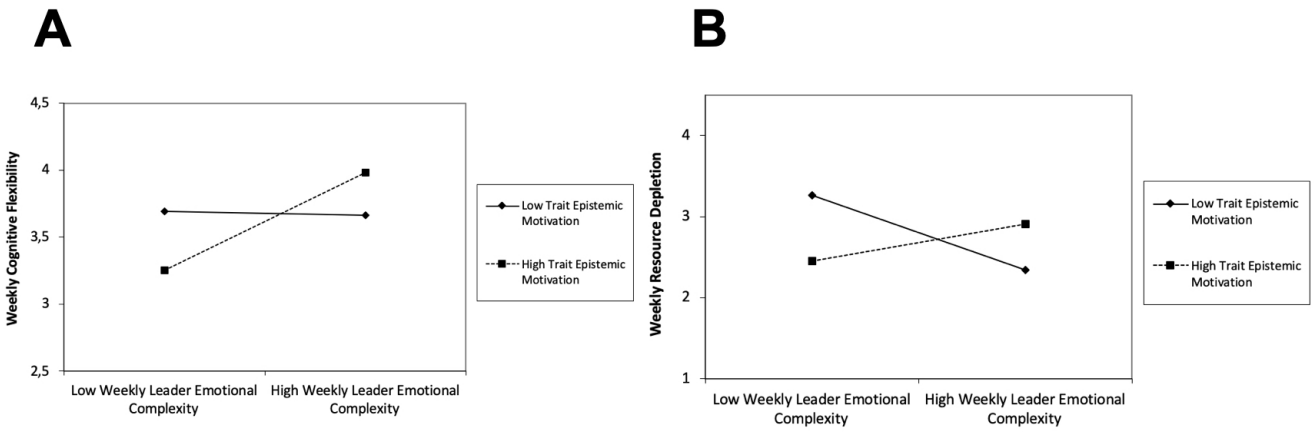

Figure 6. Study 3: Cross-level moderating effect of follower trait epistemic motivation on the relationship between weekly leader emotional complexity and weekly follower cognitive flexibility (A) as well as weekly resource depletion (B).