



# Measuring task conflicts as they occur: a real-time assessment of task conflicts and their immediate affective, cognitive and social consequences

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## Abstract

When two or more individuals with different values, interests, and experiences work together, interpersonal conflicts are inevitable. Conflicts, in turn, can hinder or delay successful task completion. However, certain types of conflicts may also have beneficial effects. The literature differentiates between task conflicts (TCs) and relationship conflicts (RCs). Whether TCs are detrimental or beneficial for performance largely depends on the simultaneous occurrence of RCs. However, the reasons for the differential effects of TCs *with* and *without* RCs remain largely unknown. Therefore, we explored the underlying fine-grained mechanisms of the conflict-performance relationship in two studies. We used event-sampling methodology to track employees' conflicts in the field (study 1) and we examined conflicts in a controlled laboratory setting (study 2). We found that RCs during TCs made participants feel disrespected and thereby increased negative affect. Further, RCs during TCs impaired knowledge gain, which decreased positive affect. In turn, low positive affect explained why TCs with RCs led to poorer performance than TCs without RCs. However, neither of the two studies supported the assumption that high negative affect from RCs during TCs—by itself—had adverse effects on performance. Our results confirm previous findings of the destructive character of RCs during TCs and additionally provide new insights into the nature and complexity of workplace conflicts by introducing positive affect as a missing piece of the puzzle.

**Keywords** Relationship conflicts · Task conflicts · Event-sampling methodology · Experimental methodology · Performance · Well-being

## Introduction

Even though interpersonal conflicts at work are undesirable, they are common aspects of work life (Pearson, Andersson, & Porath, 2000; Keenan & Newton, 1985; Narayanan, Menon, & Spector, 1999). According to an international survey of over 5000 employees in Europe and the USA performed by Consulting Psychologists Press Inc. (2008), 56% of German employees reported dealing with conflicts at the workplace “frequently” or “always.” Conflicts have detrimental effects

on employee health and well-being (e.g., Dijkstra, van Dierendonck, & Evers, 2005). These effects, in turn, may lead to absenteeism and reduced efficiency at work (see Riaz & Junaid, 2011), both of which may then impair organizational outcomes such as innovativeness or financial performance.

However, not all interpersonal conflicts are the same. Even though the everyday notion of conflict implies negative affect and major disputes, the term “conflict” actually covers a wide spectrum of incompatibilities between individuals. Conflicts range from mundane differences in opinion to extreme forms of verbal aggression and unrestrained acts of hostility. Whereas the latter should be avoided, the former may stimulate in-depth discussions and thorough decision-making and therefore should not necessarily be prevented and in some circumstances even be promoted. In order to narrow down the broad construct of conflicts, two main types of conflicts have been identified, namely, task conflicts (TCs) and relationship conflicts (RCs). TCs are defined as disagreements about a task or the best way to accomplish a task (e.g., Jehn, 1995; Jehn & Bendersky, 2003). RCs are

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more aligned with the commonly implied definition of the word “conflict”, i.e., hostility and personal clashes (also see Hershcovis, 2011, for a compilation of similar definitions of the term “interpersonal conflict”). RCs arise from animosity and dislike among team members (e.g., Jehn, 1995; Jehn & Bendersky, 2003). Both types of conflicts negatively affect individuals’ well-being (i.e., these conflicts evoke negative affect), but their cognitive and performance-related consequences notably differ. Whereas all studies that investigated RCs found that RCs have negative effects on performance (de Wit, Greer, & Jehn, 2012), some studies that investigated TCs found that TCs have positive effects on performance (e.g., Amason, 1996; Jehn & Mannix, 2001; Jehn & Chatman, 2000). Hence, the traditional view regarding the general pernicious nature of interpersonal conflicts can be considered outdated once TCs are differentiated from RCs.

However, this differentiation is challenging, and we cannot simply consider RCs “dysfunctional conflicts” that hinder task completion and project progress and TCs “functional conflicts” that support the aim of completing tasks and achieving the objectives of a project. Recent meta-analyses and reviews (Bradley, Anderson, Baur, & Klotz, 2015; de Wit et al., 2012; Loughry & Amason, 2014; O’Neill, Allen, & Hastings, 2013) have concluded that TCs usually have negative effects and only show positive effects under very specific circumstances. Thus, TCs are double-edged swords. The most intuitive explanation of TCs’ duality is the fact that most studies reporting negative effects of TCs have also found high intercorrelations between TCs and RCs (e.g., Amason, 1996; Dijkstra et al., 2005; Simons & Peterson, 2000). Thus, the negative effects of TCs on performance may result from co-occurring RCs. Consistent with this reasoning, De Dreu and Weingart (2003) showed that TCs and performance were more positively associated in studies with weak correlations between TCs and RCs. Furthermore, Shaw et al. (2011) found that in teams reporting no or low interpersonal frictions and a trusting group climate, moderate levels of TCs improved performance (also see DeChurch, Mesmer-Magnus, & Doty, 2013; Jehn & Mannix, 2001 for a similar finding). These findings suggest that when team members feel comfortable discussing different points of view without interpreting opposing opinions as personal attacks, TCs may actually boost performance (also see Bradley et al., 2015). In contrast, when team members dislike each other, TCs are more likely to trigger RCs (Jehn, 1995; Simons & Peterson, 2000), which reduce performance. Consistent with this notion, O’Neill and colleagues (O’Neill, McLarnon, Hoffart, Woodley, & Allen, 2015) found that teams with high levels of TCs but low levels of RCs outperformed teams who experienced high or moderate levels of TCs combined with high or moderate levels of RCs over a 6-month period. Thus, TCs without RCs or with low levels of RCs (hereafter “pure TCs”) seem to result in substantially better performance outcomes compared with TCs with moderate or high levels of RCs (hereafter “TCs with

RCs”). The goal of our research was to replicate these findings while, in addition, taking a closer look at single conflict interactions among individuals to (1) clearly disentangle the antecedents and consequences of conflicts and to (2) reveal the underlying processes to obtain a better understanding of the larger picture behind the conflict-performance relationship.

Most research on the differential effects of pure TCs and TCs with RCs on performance is based on retrospective self-reports (see de Wit et al., 2012 for an overview), thereby limiting the conclusions that can be drawn due to the broad time frame of the assessment. That is, by simultaneously exploring the frequency of conflicts and measuring performance, it is impossible to disentangle aspects of the workplace climate from the consequences of conflict. For instance, it is plausible that workplaces with high levels of RCs differ from those with low levels of RCs concerning other stressors that also negatively affect performance. Further, using a typical cross-sectional design, it is impossible to extract individual differences from the conflict-performance relationship that may account for both more intense perceptions of hostilities during TCs and lower performance outcomes (for instance, depressive symptoms impair both relationship quality and performance; Adler et al., 2006; Coyne, Burchill, & Stiles, 1991). Event-sampling or experimental studies make it possible to disentangle such confounds and enable real-time assessments of the processes triggered by conflicts at the same time.

To the best of our knowledge, only one recent study has experimentally examined the differential effects of pure TCs and TCs with RCs on performance (study 2; de Wit, Jehn, & Scheepers, 2013). This study found that RCs impair information processing during TCs, explaining why poorer decisions are made during TCs with RCs than during pure TCs. The aim of our research was to extend the findings reported by de Wit and colleagues (de Wit et al., 2013) as follows: First, we aimed to assess whether RCs during TCs impair performance on tasks unrelated to the task during which the conflict took place. It is plausible to assume that the effects of conflicts linger on and influence *subsequent tasks*. Second, we aimed to investigate the *underlying fine-grained mechanisms* that may explain the differential effects of pure TCs and TCs with RCs on performance on subsequent tasks. For this, similar to de Wit and colleagues (de Wit et al., 2013), we adopted an individual-centered approach. As all individuals construct their own reality (e.g., Bono, Boles, Judge, & Lauver, 2002) and perceptions of the subjective reality drive affective and cognitive responses, we were only interested in reactions to events that were perceived as conflicts by the affected person. Using this approach, our design was simple and straightforward. First, we conducted an event-sampling study in which we assessed all conflicts experienced by the participants during five working days while also assessing

their daily performance at work. Here, we took special care to draw the line between TCs and RCs as precisely as possible. That is, we explained each conflict type in detail prior to the data collection period to guarantee nuanced measures that reflect the corresponding constructs with as little mutual overlap as possible. Second, we conducted an experimental study in which standardized TCs with and without RCs were induced, and their effects on performance were assessed. In both studies, we investigated dyadic conflict interactions.

### Differential effects of pure TCs and TCs with RCs

Affective Events Theory (Weiss & Cropanzano, 1996) posits that work events (e.g., conflicts) are the causes for affective reactions at work. This theory builds on appraisal theories of emotion (e.g., Lazarus, 1991; Lazarus & Folkman, 1984) and explains how discrete events contribute to the emergence of affective states in a specific context: the workplace. Processes that take place during work events and outcomes of work events are evaluated in terms of goal relevance and goal congruence. Affective reactions are the consequences of these appraisal processes. That is, processes during work events or outcomes of work events have to be personally relevant in order to elicit emotions. Then, if relevance is confirmed, processes can either elicit positive or negative emotions depending on whether they obstruct or promote the attainment of goals. At work, the *achievement goal* (i.e., the desire to be competent or the “need for competence”) represents a highly relevant basic goal whose attainment strongly relates to employee’ well-being and overall functioning (see, e.g., Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010).

The achievement goal has an intra-individual and an inter-individual component (Nicholls, 1984). If you have achieved now more than in the past, you feel competent because you have extended your own skills or *gained knowledge*. In this case, the self at another point in time is used as reference for the evaluation of the own competence (intrapersonal comparison). If, however, you have achieved more than others with equal effort or the same as others with less effort, you feel competent because you have outperformed others and *gained respect*. Here, others serve as reference for the evaluation of the own competence (interpersonal comparison).

TCs both obstruct and promote the attainment of the achievement goal. On the interpersonal level, TCs in form of critical discussions pose a threat to the position or the status of employees in conflict (De Dreu & van Knippenberg, 2005). Even during a constructive discussion, one’s expertise and, hence, parts of the self are likely to be rejected by the other person. This should be evaluated as unpleasant (as it hinders the attainment of the inter-individual component of the

achievement goal to feel respected) and lead to negative affect. In contrast, on the intrapersonal level, TCs pose learning opportunities; that is, they enable individuals to expand their knowledge, as they get to know different points of view and learn about opposing arguments (e.g., Amason, 1996; Pelled, Eisenhardt, & Xin, 1999). This is likely to be evaluated as pleasant (as it aids the attainment of the intra-individual component of the achievement goal to gain knowledge) and to lead to positive affect. Hence, TCs should induce both negative and positive affect. Indeed, recently, Todorova, Bear, and Weingart (2014) found that TCs can be energizing and thus have the capacity to elicit positive affect. This is a beneficial effect of TCs, which is suggested to have important implications (e.g., “... Some of the negative emotional responses to conflict might be mitigated by a co-occurring positive emotional response ...”, Nixon, Bruk-Lee, & Spector, 2017, p. 131). Interestingly, this positive effect of TCs has largely been disregarded in the past.

However, to the extent to which RCs arise during TCs and transform pure TCs into TCs with RCs, positive affect should diminish and negative affect should increase. This is because RCs impair information processing and learning (see above) and hence hinder the attainment of the intra-individual component of the achievement goal. Thus, positive affect during TCs with RCs should be lower than during pure TCs. Further, RCs involve interpersonal tension and signal rejection not only of one’s ideas but also of the whole person (of one’s values, one’s attitudes, and one’s personality) and hence completely obstruct the attainment of the inter-individual component of the achievement goal. Thus, negative affect during TCs with RCs should be higher than during pure TCs.

Affective reactions to pure TCs or TCs with RCs should then linger on and influence performance on tasks unrelated to the task during which the conflict occurred (spill-over effects). Affective Events Theory (Weiss & Cropanzano, 1996) proposes that the composition of employees’ affective reactions to workplace events predicts subsequent work behaviors. Hence, drawing on Affective Events Theory, we assumed that the interplay between positive and negative affect during TCs (with and without RCs) would predict post-conflict performance (i.e., attitudes towards co-workers and cognitive processing during subsequent work tasks). In the following, we will explain our assumptions in greater detail.

**TCs and affect** An opposition to one’s ideas and arguments poses a threat to the self, leading to negative affect, as it signals rejection and disrespect (De Dreu & van Knippenberg, 2005). According to De Dreu and van Knippenberg (2005), the “possessive self” may explain why even pure TCs can have negative effects. Individuals’ opinions are often deeply integrated with their identity and have become part of their self-representation. Consequently, when these opinions are questioned, individuals may react with anxiety to this threat.

That is, TCs may entail the risk of losing face (see also Meier, Gross, Spector, & Semmer, 2013).

However, whether TCs that are a threat to the self are still perceived as pure TCs remains questionable. It is plausible that pure TCs escalate into TCs with RCs when the threat to the self surpasses a certain threshold. Accordingly, TCs can be misattributed as RCs when the critique of a person's arguments is perceived as an attack on the self rather than a mere rejection of ideas (e.g., Simons & Peterson, 2000). Alternatively, RCs may arise during TCs when discussions become emotional and shift from task-related issues to personal issues. Interpersonal frictions unrelated to the task at hand threaten the fundamental goal of maintaining high social-esteem (e.g., belonging to a social network, see Semmer, Jacobshagen, Meier, & Elfering, 2007). Either way, discussants who *perceive* RCs during TCs (regardless of the actual presence of RCs) may feel disrespected, leading to a series of negative emotions (Blincoe & Harris, 2011). In contrast, discussants who do not perceive RCs during TCs (i.e., discussants who experience pure TCs) should feel relatively valued by others and, consequently, experience considerably less negative affect. In line with this assumption, using a daily diary approach, Meier et al. (2013) found that when the influence of RCs on TCs was controlled for, TCs were unrelated to negative affect such as anger.

*Hypothesis 1a:* During pure TCs, individuals will feel more respected and hence they will experience less negative affect than during TCs with RCs.

In addition to the negative pathway described above, discussions that involve diverging opinions (i.e., TCs) are stimulating and increase people's momentary arousal (Amason, 1996). New insight and information gained during such TCs can energize and activate employees (Todorova et al., 2014) by enabling learning and personal growth (Csikszentmihalyi, 2014). However, when RCs emerge during these TCs and transform pure TCs into TCs with RCs, information processing is impaired, and hence, learning and knowledge gain are thwarted (de Wit et al., 2013). Consequently, states of energetic concentration and pleasure (Csikszentmihalyi, 2014) are more likely to occur during pure TCs than during TCs with RCs.

*Hypothesis 1b:* During pure TCs, individuals will gain more knowledge and hence they will experience more positive affect than during TCs with RCs.

**TCs and performance** Anxiety and distress evoked by TCs (with RCs) should reduce both concentration and the processing of complex information (e.g., Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004; Eysenck, 1985; Reio & Callahan, 2004; Rodell & Judge, 2009). Furthermore, people who experience negative affect may lose sight of their original task (Jehn, 1997) and tend to perform worse in laboratory tasks and at work (Harris & Menzies, 1999; Smith et al.,

2001). Consistent with these considerations, TCs have been found to impair performance (e.g., Lovelace, Shapiro, & Weingart, 2001). However, as outlined above, TCs also stimulate excitement and enthusiasm. This positive affect, in turn, motivates individuals to exert greater effort in a task, thereby improving performance (Rich, LePine, & Crawford, 2010). During both decision-making and creative problem-solving, individuals work more efficiently (Isen, Rosenzweig, & Young, 1991) and show superior performance (Isen, Daubman, & Nowicki, 1987) when positively aroused prior to the task. This result is consistent with findings showing that TCs are also associated with critical and creative thinking (De Dreu & West, 2001). Thus, TCs should lead to better post-conflict performance in the absence of RCs (i.e., during pure TCs) due to lower levels of negative affect and higher levels of positive affect.

*Hypothesis 2:* During pure TCs, individuals will experience less negative affect (*H2a*) and more positive affect (*H2b*) than during TCs with RCs and hence they will perform better after pure TCs than after TCs with RCs.

## Method—study 1

In study 1, we examined the short-term consequences of pure TCs and TCs with RCs in a combined event- and experience-sampling study. During the workday, employees reported and evaluated all conflict interactions. In the evening of the same day, they evaluated their daily performance. Using this method, we gathered real-time information about conflicts and their immediate effects on positive and negative affect. The performance evaluations were temporally decoupled from the reports of conflicts to reduce bias due to halo effects (Loughry & Amason, 2014).

## Participants

Participants were 165 full-time employees (97 women) with a mean age of 35.4 years ( $SD = 9.68$  years). This sample size provides adequate power for detecting micro-level direct effects of small to medium effect sizes (Arend & Schäfer, 2017). Participants worked in various fields (from education and social services to IT and financial services) and positions. On average, they had 12.3 years ( $SD = 10.7$  years) of work experience. All participants had colleagues and worked at least occasionally in teams. Participants were mainly recruited via the career network XING, online advertisements posted on Facebook or published in newsletters, and e-mails to companies. Study invitations included a link to a questionnaire that provided further study information. Interested employees who worked at least 30 hours per week, frequently experienced social interactions during work (i.e., at least five interactions with colleagues, clients, or supervisors per day) and could



answer short questionnaires during their work time were eligible to participate. In total, 38% of the persons who clicked on the initial link participated in the study. Participants were rewarded with personal feedback and a gift equivalent to €20 or €30 for their full participation. The study was conducted in accordance with the guidelines of the Declaration of Helsinki and approved by the Department's Ethics committee. Participants were aware that they had the right to discontinue participation at any time and that their responses were confidential.

## Study design and procedure

After providing informed consent, participants provided their contact information to receive further correspondence and answered several general questions regarding their demographics and current occupation. Following these questions, they received extensive information regarding the study procedure, which also contained clear instructions regarding the type of interactions that should be reported. For this, task-related and relationship-related disagreements at work were defined, and examples were given to illustrate the difference between task-related and relationship-related disagreements. Disagreements had to occur at work exclusively on a professional basis, thus excluding visits or calls from friends or family members received at the office. Additionally, participants had to play an active part in the disagreement and could not only witness it. Participants were instructed to complete the questionnaire immediately and no more than 15 minutes after an interaction. Participants were asked to complete the questionnaire at least twice a day during work hours. They were instructed to focus on interactions during which they experienced disagreements, but they could also report on interactions without disagreements. We strongly encouraged participants to report all disagreements encountered during the workday, even if two surveys had already been completed. Comprehension questions in the form of a short questionnaire were asked to check whether participants correctly understood their tasks. Participants could only proceed if they gave the right answers to each of the questions (if this was not the case for one or more questions, they had to answer the corresponding question(s) again).

On Monday of the following week, the event-sampling part of the study started. Participants completed several short *daytime* questionnaires per day for a total of five workdays. Employees were contacted in the morning via e-mail to remind them of their daily task. Additionally, at approximately noon, a second e-mail reminder was sent. In the evening, participants completed an *evening* questionnaire regarding their daily performance. They were contacted via e-mail after work to remind them to complete the evening questionnaire. To ensure anonymity, participants received a code, which was attached to all questionnaires. The connection between the

code and their e-mail addresses and telephone numbers was deleted as soon as participants were compensated. We limited our analyses to participants who completed at least 3 days of data collection. This resulted in a sample of 165 participants. Eighty-nine percent of these participants completed all 5 days of data collection. In total, we obtained 2227 daytime and 815 evening observations.

## Measures

### Daytime questionnaire

Given the time constraints employees face at work, it is common practice to use single-item measures in diary and particularly in event-sampling studies (Diebig, Bormann, & Rowold, 2017; Sonnentag, Binnewies, & Mojza, 2008). Hence, we followed this procedure and selected items with high item-total correlations that additionally had high face validity from validated scales. For this, first, an independent sample of 96 participants completed a questionnaire with the full-length original scales. Then, single items were chosen for the daytime questionnaire on the basis of the factor loadings (Stanton, Sinar, Balzer, & Smith, 2002). However, as selecting items only based on psychometric evidence may limit the content validity of single-item measures (Fisher, Matthews, & Gibbons, 2016), we additionally used expert judgments<sup>1</sup> and conceptual definitions to adapt the items and improve their comprehensibility and fit to the event-sampling methodology.

If no German translation of a questionnaire existed, the corresponding items were first translated from English to German and then back-translated to English to ensure equivalence of meaning (Hambleton & De Jong, 2003). Prior to the measures of interest, participants were asked to state whether they were currently at work and had recently interacted with colleagues, supervisors, subordinates, or clients in person or via e-mail, telephone, or chat.

**Task conflicts (TCs) and relationship conflicts (RCs)** were measured with two adapted items from the German version of Jehn's (1995) Conflict Scale by Lehmann-Willenbrock, Grohmann, and Kauffeld (2011). Participants reported whether the recent interaction involved a TC (e.g., "Did you experience disagreements with your interaction partner regarding the content or the implementation of the work being done?") and an RC (e.g., "Did you experience personal attacks during the interaction?"). If a TC, an RC, or both were present, participants additionally rated the intensity of the perceived conflict (from 1 = mild to 5 = intense). Similar to Todorova et al. (2014), we chose items that do not refer to affective changes within the conflict situation and instead focus on conflict behaviors. Further, to avoid potential problems with correctly identifying TCs in high-quality relationships (Loughry &

<sup>1</sup> We invited several researchers not involved in this study to evaluate the quality of the items and asked them for formulation suggestions.

Amason, 2014), we did not use items that included the negatively connoted word “conflict.” Thus, in our study, in contrast to previous studies (e.g., summarized in Loughry & Amason, 2014), most (78%) of the experienced conflicts were pure TCs, and only 17% of the conflicts were TCs with RCs.

**Feelings of respect** To assess feelings of respect, we asked participants to indicate the extent to which they felt “well regarded” (one item from the Social Regard Questionnaire by Butcher, Sparks, & O’Callaghan, 2003). Similar single-item measures have been used in other studies (see, e.g., DeBono & Muraven, 2014; Porath & Erez, 2007). The response options ranged from 1 = not at all to 7 = very much.

**Knowledge gain** To assess knowledge gain, we asked participants to indicate the extent to which the interaction was “an educational experience” (one item from the Appraisal Scale by Searle & Auton, 2015). The response options ranged from 1 = not at all to 5 = very much.

**Positive and negative affect** were measured with the Momentary Affect Scale by Gee, Ballard, Yeo, and Neal (2012). Participants indicated how they felt using two bipolar scales ranging from  $-5$  = very relaxed, calm, composed, peaceful, comfortable (low negative affect) to  $+5$  = very nervous, tense, anxious, upset, stressed (high negative affect) and from  $-5$  = very sluggish, tired, sleepy, dull, bored (low positive affect) to  $+5$  = very awake, active, energetic, alert, bright (high positive affect).

### Evening questionnaire

**Performance** The productivity scale of the Health and Work Questionnaire (HWQ) by Shikiar, Halpern, Rentz, and Khan (2004) was used to record daily performance. Participants responded to three items measuring the efficacy, quantity, and quality of their work (e.g., “How would you describe the quality of your work today?”) on a response scale ranging from 1 = my worst ever to 10 = my best possible ( $\alpha = .85$ ).

### Data analysis

To test the predicted mediations, two separate two-level path analyses were conducted using Mplus 7.4 (Muthén & Muthén, 1998–2015). We tested the 1-1-1 multilevel mediation hypotheses using a multilevel structural equation modeling (MSEM) paradigm. Following Preacher, Zyphur, and Zhang (2010), we specified random intercepts and fixed slopes. We used Monte Carlo simulations to assess the significance of the indirect effects (Selig & Preacher, 2008). We do not report fit indices, as both models (see below) were fully identified.

Only reports that either described pure TCs or TCs with RCs were included in the analyses and coded either “0” (TCs with RCs) or “1” (pure TCs). We first investigated whether pure TCs were related to lower levels of negative affect and higher levels of positive affect compared with TCs with RCs as mediated by feelings of respect and knowledge gain. Then, we calculated the within-person ratio of pure TCs to all TCs (pure TCs and TCs with RCs) for each day and the averaged within-person level of positive and negative affect for each day to assess whether a higher rate of pure TCs to all TCs during the day was related to better daily performance as mediated by the average level of daily negative and positive affect. In both analyses, we did not make predictions about the direct effects of pure TCs and TCs with RCs on performance and concentrated on the hypothesized indirect effects.

Notably, in both analyses, we only had level 1 (within-person) predictors. Yet, whereas in the first analysis, level 1 was the *event*-level (i.e., multiple conflicts experienced during the day), in the second analysis, it was the *day*-level (i.e., the percentage of conflicts experienced in the course of one day, the averaged affect score, the daily performance rating). We conducted two separate mediation analyses instead of one serial mediation analysis because performance was measured only once a day. To examine the effects of both conflicts and affect on performance, we aggregated the predictor variables (conflict and affect) to the day-level. However, this procedure would not have been feasible for feelings of respect and knowledge gain because these evaluations highly fluctuate across situations as they largely depend on the nature of the conflict. Hence, aggregation would have eliminated a substantial amount of meaningful variance. Similar considerations could be applied to negative and positive affect. Yet, we suggest that even though employees’ affect may differ across situations during the day, the average level of daily post-conflict affect should help to explain why performance within one individual is better on one day than on another day. However, this approach is very conservative, and we expected to find small rather than large effects in the second mediation analysis.

## Results—study 1

### Preliminary analyses

Correlations are presented in Table 1. Given the hierarchical nature of the data, we present both between-person (above the diagonal) and within-person (below the diagonal) correlations. Before testing the hypothesis, we investigated whether multilevel modeling was appropriate by examining within- and between-person variance in the outcome variables. Means and between-person as well as within-person variances are presented in Table 2. As shown in Table 2, most of the total

**Table 1** Correlations between variables in study 1

|                              | 1       | 2      | 3       | 4       | 5       | 6      |
|------------------------------|---------|--------|---------|---------|---------|--------|
| 1. Pure TCs vs. TCs with RCs |         | .05    | .34***  | .20**   | -.22*** | .08    |
| 2. Knowledge gain            | .13***  |        | -.06    | -.04    | .17*    | -.23** |
| 3. Feelings of respect       | .35***  | .12*** |         | .43***  | -.60*** | .21**  |
| 4. Positive affect           | .23***  | .19*** | .21***  |         | -.42*** | .28*** |
| 5. Negative affect           | -.35*** | -.05*  | -.54*** | -.25*** |         | -.12   |
| 6. Performance <sup>a</sup>  | .12***  | .13*** | .10**   | .22***  | -.09**  |        |

Correlations below the diagonal represent within-person scores ( $n = 2227$  [<sup>a</sup> 815]). Correlations above the diagonal represent between-person scores ( $N = 165$ ). *Pure TCs*, task conflicts without relationship conflicts; *TCs with RCs*, task conflicts with relationship conflicts. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

variance was within individuals, but there was also a considerable proportion of variance between individuals (see “ICC1” column). This justifies applying multilevel modeling.

### Hypothesis testing

The results of the path analyses are displayed in Fig. 1, and the indirect effects are shown in Table 3. As predicted (Hypothesis 1a), participants experienced less negative affect during pure TCs than during TCs with RCs, because they felt more respected during pure TCs than during TCs with RCs. Further, participants experienced more positive affect during pure TCs than during TCs with RCs, because they gained more knowledge during pure TCs than during TCs with RCs. This supports Hypothesis 1b. Moreover, participants’ better performance during workdays on which they experienced more pure TCs than TCs with RCs over the course of the day was mediated by positive affect,

<sup>2</sup> We performed two additional path analyses in which we contrasted pure TCs with interactions without any conflicts to investigate the mere effects of pure TCs. Here, we also found that participants experienced more positive affect during pure TCs (than during interactions without conflicts) as mediated by knowledge gain (estimate = .069 (.027),  $CI_{95\%} = [.021, .128]$ ). Furthermore, participants performed better during pure TCs (than during interactions without conflicts) as mediated by positive affect (estimate = .020 (.011),  $CI_{95\%} = [.002, .047]$ ) but not as mediated by negative affect (estimate = .004 (.012),  $CI_{95\%} = [-.018, .029]$ ). However, participants experienced not only more positive affect but also more negative affect during pure TCs (than during interactions without conflicts) as mediated by feelings of respect (estimate = .496 (.074),  $CI_{95\%} = [.362, .653]$ ). This finding is unsurprising as during pure TCs, one’s opinions and arguments are rejected, which lowers feelings of respect and increases stress. Yet, compared with TCs with RCs, individuals still feel relatively respected and relaxed during pure TCs.

Furthermore, we performed two additional path analyses in which we contrasted the absence and presence of TCs during RCs to investigate whether the amount of conflict may explain why TCs with RCs are “bad” conflicts in contrast to pure TCs. We found that pure RCs are more damaging than TCs with RCs as follows: Participants experienced more negative affect during pure RCs (compared with TCs with RCs) as mediated by feelings of respect (estimate = .244 (.134),  $CI_{95\%} = [.002, .528]$ ). Further, participants experienced less positive affect during pure RCs (than during TCs with RCs) as mediated by knowledge gain (estimate = -.392 (.141),  $CI_{95\%} = [-.712, -.150]$ ). Furthermore, pure RCs hindered performance more than TCs with RCs (estimate = -1.434 (.329),  $CI_{95\%} = [-2.080, -0.788]$ ). However, neither negative nor positive affect acted as a mediator here. Hence, the amount of conflict was less essential for the conflict’s consequences than the type of conflict.

supporting Hypothesis 2b. In contrast to our expectations, negative affect did not mediate the relationship between the proportion of pure TCs to all TCs and daily performance. Thus, Hypothesis 2a was not supported.<sup>2</sup> To rule out the alternative explanation that the higher intensity of TCs during TCs with RCs than during pure TCs drives the negative effects of TCs with RCs (e.g., Todorova et al., 2014; Tsai & Bendersky, 2016), we reran our analyses controlling for the intensity of TCs. The results of these control analyses (see Figure A and Table A in the supplementary materials) are similar to our initial results, and hence, the detrimental effects of RCs during TCs cannot be attributed to the fact that more intense TCs are more likely to be perceived as TCs with RCs rather than as pure TCs.

MSEM also models between-person effects. Although we did not make predictions about between-person effects, similar mediations emerged between-persons as within-persons: Employees who (over the course of the 5 days of data collection) experienced more pure TCs than TCs with RCs generally felt less negative affect, as mediated by overall feelings of respect (estimate = -2.676 (.691),  $CI_{95\%} = [-4.121, -1.364]$ ). They also reported an overall better performance as mediated by overall positive affect (estimate = .715 (.373),  $CI_{95\%} = [.061, 1.572]$ ) but not by overall negative affect (estimate = -.058 (.297),  $CI_{95\%} = [-.782, .543]$ ). Yet, in contrast to the within-person effects, the significant total effect of the overall percentage of pure TCs (to all TCs) on overall positive affect (estimate = 3.218 (.949),  $CI_{95\%} = [1.359, 5.077]$ ) was not mediated by overall knowledge gain (estimate = -.021 (.124),  $CI_{95\%} = [-.467, .292]$ ).

### Discussion—study 1

Consistent with our first hypothesis, study 1 revealed that feelings of respect acted as a mediator helping to explain why pure TCs were related to less negative affect than TCs with RCs. Further, knowledge gain acted as a mediator helping to explain why pure TCs were related to more positive affect than TCs with RCs. However, the results of study 1 only partially confirm our second hypothesis. Whereas positive

**Table 2** Multilevel summary statistics

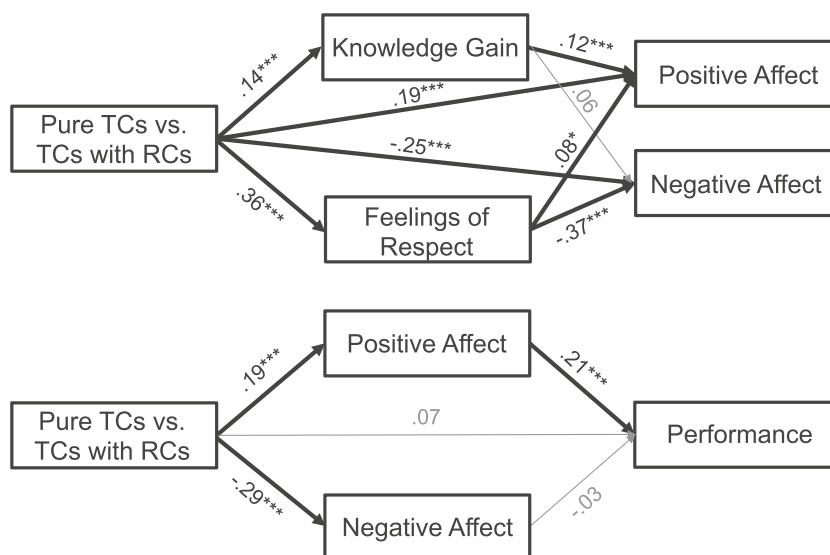
|                          | Mean | Between-person variance | Within-person variance | ICC1 |
|--------------------------|------|-------------------------|------------------------|------|
| Knowledge gain           | 2.79 | .36                     | 1.36                   | .22  |
| Feelings of respect      | 4.76 | .61                     | 1.74                   | .26  |
| Positive affect          | 6.81 | 1.63                    | 4.78                   | .26  |
| Negative affect          | 4.81 | 1.19                    | 5.93                   | .17  |
| Performance <sup>a</sup> | 7.16 | 1.10                    | 1.67                   | .40  |

*N* = 165 participants at level 2 and *n* = 2227 [<sup>a</sup> 815] observations at level 1

affect acted as a mediator and, hence, helped to explain why pure TCs led to better performance than TCs with RCs, negative affect did not mediate the relationship of TCs with performance. Initially, this finding may be surprising as the sphere of influence of negative affect is often considered wider than the sphere of influence of positive affect (Weiss & Cropanzano, 1996). Negative affect distracts employees from work tasks, which lowers performance outcomes. Employees are consumed by feelings of hurt, which then triggers a desire for revenge, rumination, or withdrawal. Regardless of the exact reaction, negative affect should take up resources in people’s working memory that are needed for task completion and hence impair performance. However, negative affect or acute stress may also facilitate working memory and improve certain types of performance (Schwarz & Bless, 1991; Yuen et al., 2009). Negative affect fosters systematic processing, which helps people to focus on details and to complete complex tasks. These opposing effects may balance each other such that negative affect may not be as detrimental as often assumed (see, for instance, the meta-analysis by Baas, De Dreu, & Nijstad, 2008).

Another explanation for why negative affect did not affect performance relates to the way we conceptualized *positive* and *negative* affect. Our scale contrasted the high-arousal *positive* state (attentive) with the low-arousal *negative* state (sluggish) and the high-arousal *negative* state (stressed) with the low-arousal *positive* state (relaxed) (see Gee et al., 2012). We found that when participants felt more attentive than sluggish, they performed better. However, when participants felt more stressed than relaxed, they performed neither worse nor better. Hence, relaxation and distress may have had similar effects on performance (see Orlić, Grahek, & Radović, 2014), and a difference score may have undermined their unique effects.

A third explanation for the null effects of negative affect on performance may be the way we conceptualized and measured performance. In study 1, performance was conceptualized as daily productivity and measured after work to reduce halo error by temporally separating the measurement of performance from the evaluation of the conflicts. However, this method allowed for neither a comprehensive assessment of performance nor a clear separation of the performance on



**Fig. 1** Overview of results from model 1 and model 2 in study 1. Coefficients are standardized. Sample size varies slightly between models due to missing data. Pure TCs, task conflicts without

relationship conflicts; TCs with RCs, task conflicts with relationship conflicts. \**p* < .05; \*\**p* < .01; \*\*\**p* < .001



**Table 3** Total and indirect effects on affect (model 1) and performance (model 2)—study 1

| Relationship                                | Total effect        |                            | Mediator            | Indirect effect    |                            |
|---|---------------------|----------------------------|---------------------|--------------------|----------------------------|
|   | Estimate            | CI <sub>95%</sub> (LL, UL) |                     | Estimate           | CI <sub>95%</sub> (LL, UL) |
| Model 1— <i>affect</i>                      |                     |                            |                     |                    |                            |
| Positive affect—pure TCs vs. TCs with RCs   | <i>1.466 (.218)</i> | [1.039, 1.892]             | Knowledge gain      | <i>.105 (.034)</i> | [.044, .180]               |
|   |                     |                            | Feelings of respect | <i>.170 (.069)</i> | [.039, .311]               |
| Negative affect—pure TCs vs. TCs with RCs   | - 2.357 (.196)      | [- 2.741, - 1.974]         | Knowledge gain      | <i>.050 (.029)</i> | [- .007, .111]             |
|   |                     |                            | Feelings of respect | - .847 (.124)      | [- 1.106, - .619]          |
| Model 2— <i>performance</i>                 |                     |                            |                     |                    |                            |
| Daily performance—pure TCs vs. TCs with RCs | <i>.466 (.187)</i>  | [.099, .833]               | Positive affect     | <i>.156 (.058)</i> | [.054, .287]               |
|   |                     |                            | Negative affect     | <i>.036 (.049)</i> | [- .060, .138]             |

Reported total and indirect effects are unstandardized coefficients, as they are based on unstandardized regression coefficients (please see Selig & Preacher, 2008). We report standard errors in parentheses next to the estimates. 95% confidence intervals were calculated with the Monte Carlo method to assess significance of indirect effects. Significant effects are marked in italics. CI<sub>95%</sub>, 95% confidence interval; *pure TCs*, task conflicts without relationship conflicts; *TCs with RCs*, task conflicts with relationship conflicts

the tasks during which the conflict occurred from the performance on post-conflict tasks.

We sought to address these limitations in study 2. To gain a more detailed picture of how conflicts evoke negative affect and whether this negative affect, in turn, influences performance, we used a unipolar scale for measuring positive and negative affect in our second study. Further, we investigated different types of (objective) performance measures clearly unrelated to the conflict itself. Job performance has traditionally been defined as an employee's effectiveness in performing a task (Borman & Motowidlo, 1993). However, Borman and Motowidlo (1993) emphasize the importance of contextual behaviors, i.e., behaviors that enhance the organizational environment, such as helping colleagues (i.e., organizational citizenship behaviors; see Rotundo & Sackett, 2002). Hence, in study 2, we divided performance into task performance and contextual performance, and both performance dimensions were measured after the end of the conflict scenario. Following Porath and Erez (2007), task performance was further subdivided into problem-solving and innovation to assess both convergent thinking (i.e., the search for one correct answer for a problem) and divergent thinking (i.e., the generation of new perspectives and new ideas for a problem). We expected similar indirect effects for contextual performance as for task performance: Negative affect leads to avoidance behavior (e.g., Carver & Harmon-Jones, 2009), thus limiting contextual performance (i.e., prosocial and other citizenship behaviors; Rodell & Judge, 2009). In contrast, individuals high in positive affect engage in behaviors that foster a positive social environment among team members, leading to better contextual performance (Rich et al., 2010; Rodell & Judge, 2009). Hence, we assumed that pure TCs would lead to better contextual performance than TCs with RCs as mediated by negative and positive affect.

The final possible shortcoming of study 1 is that only correlational support, but not causal support, was provided for the relationships among type of conflict, affect, and performance. Although daily conflict experiences should shape daily affect, the direction of the relationship is not well-known. Positive affect may also buffer, whereas negative affect may intensify conflict experiences (e.g., Girardi et al., 2015). Similarly, even though conflicts influence performance, teams that perform well may also perceive less relationship conflict (see Loughry & Amason, 2014). Thus, in our second study, participants experienced a standardized laboratory conflict, and we measured its effects on subsequent affect and performance outcomes while controlling for baseline affect.

## Method—study 2

### Participants

Assuming small to moderate relationships between independent variables, mediators, and dependent variables, we estimated a sample size of 140 participants to test indirect effects with a power of .80 and a confidence level of 95% (Schoemann, Boulton, & Short, 2017). Hence, a total of 143 participants (95 women) were recruited via the participant database at the Humboldt-Universität zu Berlin (Psychologischer Experimental-Server Adlershof), the career network XING, and posters at local companies. One participant decided to discontinue participation. Thus, data from 142 participants (95 women) with a mean age of 40.2 years ( $SD = 11.9$  years) were included in the analyses. Participants were employees (i.e., non-students) with an average of 17.3 years ( $SD = 12.6$  years) of work experience, working at least 15 hours per week ( $M = 34.1$  hours,  $SD = 9.78$  hours) in various

fields and positions. All were native speakers of German. Participants took part individually and received €20 to €30 depending on the actual duration of the 2-to-3-hour laboratory session. The same ethical standards as those outlined in study 1 were applied.

## Procedure

At least 24 hours prior to the laboratory session, participants completed an online questionnaire measuring demographics and measures not relevant to this study. During the laboratory session, after providing informed consent, participants answered questions regarding their momentary affect and performed the conflict task (see below). After the conflict task, participants evaluated the presence and level of perceived TC and RC and rated the degree to which they felt respected and the extent to which the [conflict] task helped them to gain knowledge. Additionally, they reported on their momentary affect and, following Porath and Erez (2007), they completed two task performance tests (divergent and convergent thinking) and one contextual performance/helpfulness test (prosocial behavior). Finally, after participants had completed all post-experimental questions, they were fully debriefed and carefully probed for suspicion regarding the existence of their interaction partner. Less than 15% of the participants uncovered that the video statements by their interaction partners had been prerecorded.

## Conflict task

Two conflict scenarios were designed: one to elicit pure TCs and one to elicit TCs with RCs. Participants were randomly assigned to one of the two conditions ( $n_{\text{pure\_TC}} = 71$ ,  $n_{\text{TC\_RC}} = 71$ ). During the conflict task, participants discussed the implementation of an organizational measure with (simulated) interaction partners. Participants chose one of two topics for the discussion: (1) improvements to the catering service at the company canteen (such as more diverse food selections or vegetarian-friendly food options) or (2) improvements to organizational family-friendliness (such as the implementation of company childcare or the conversion of one full-time position into two part-time positions). The task consisted of two blocks, i.e., one block during which participants discussed the content of an organizational measure and another block during which they discussed the precise implementation of the measure. For each discussion point, participants were offered three to four response options. Once an option was chosen, participants were asked to explain their choice in a video statement. A random choice was simulated such that participants always started the discussion. Based on their response choice, they received a corresponding video statement from interaction partners who argued against their choice. In the “pure TC” condition, the simulated interaction partner remained friendly

throughout but firmly disagreed with all the task-related choices participants made. In contrast, in the “TC with RC” condition, the simulated interaction partner behaved in a way that created an additional RC. In this condition, exactly the same arguments were used to disagree with the participants’ choices, but the arguments were offered harshly without reassuring smiles.

**Stimulus material** For the video recordings of the simulated interaction partner, actors were filmed in a laboratory room resembling the one where the experiment took place. Four actors (two men, two women) were filmed. One male and one female actor improvised speech content based on specific keywords provided, which assured that the same arguments were presented each time. At least ten takes were recorded per required video statement, and those takes fitting the predefined criteria best (similarity in content and length but substantial differences in friendly attitude between conditions) were then transcribed for the other male and female actor to ensure that their videos were similar in strength of argumentation and word choice. The final set of video statements (160) was shown to 35 raters (18 women and 17 men) with a mean age of 26.5 years ( $SD = 7.04$  years) blind to the aim of the study; these individuals rated the authenticity (i.e., believability) of each actor, the persuasive power of their arguments, and the pleasantness of the atmosphere within each video statement. All actors were found to be equally believable, largest difference in authenticity between actors,  $M_{\text{diff}} = .06$ ,  $t(34) = .81$ ,  $p = .42$ , Cohen’s  $d = .14$ ,<sup>3</sup> and across all actors, conditions differed with respect to atmosphere,  $M_{\text{diff}} = 4.27$ ,  $t(34) = 35.25$ ,  $p < .001$ , Cohen’s  $d = 5.96$ , but not with respect to the quality of the arguments,  $M_{\text{diff}} = .01$ ,  $t(34) = .37$ ,  $p = .71$ , Cohen’s  $d = .06$ .<sup>4</sup> A second pretest involving 23 participants with a mean age of 31.4 years ( $SD = 14.9$  years) who completed the conflict task (7 women and 5 men in the “pure TC” condition and 6 women and 5 men in the “TC with RC” condition) further confirmed that (a) the task clearly evokes a TC,<sup>5</sup>  $M = 91\%$ ,  $t(22) = 15.2$ ,  $p < .001$ , Cohen’s  $d = 6.48$ , and that (b) the expected perceived differences in RC<sup>5</sup> between the conditions emerged,  $M_{\text{diff}} = 58\%$ ,  $t(18) = 3.41$ ,  $p = .003$ , Cohen’s  $d = 1.42$ .

<sup>3</sup> The TOST procedure (Lakens, 2016) indicated that the observed effect size was significantly within the equivalence bounds of a medium effect size (Cohen’s  $d = -0.5$  and Cohen’s  $d = 0.5$ ),  $t(34) = 2.16$ ,  $p = .019$ .

<sup>4</sup> The TOST procedure (Lakens, 2016) indicated that the observed effect size was significantly within the equivalence bounds of a medium effect size (Cohen’s  $d = -0.5$  and Cohen’s  $d = 0.5$ ),  $t(34) = 2.61$ ,  $p = .007$ .

<sup>5</sup> We adapted the German version of Jehn’s (1995) conflict scale by Lehmann-Willenbrock et al. (2011) to suit the laboratory setting. Specifically, we asked about the presence or absence of conflicts (e.g., “Did you experience disagreements with your interaction partner regarding the content of the work being done?”), and, if conflicts were present, participants were asked to rate the intensity rather than the frequency of conflicts (e.g., “How intense were these disagreements with your interaction partner?”), on a 6-point response scale (from 1 = mild to 6 = intense).

## Measures

All measures (unless stated otherwise) used response options from 1 = strongly agree to 7 = strongly disagree. If no German translation of a questionnaire existed, corresponding items were first translated from English to German and then back-translated to English to ensure equivalence of meaning (Hambleton & De Jong, 2003).

**Positive and negative affect** To measure negative affect, participants rated the degree to which they felt “tense”, “stressed”, “annoyed”, and “irritated” (pre-conflict rating:  $\alpha = .69$ ; post-conflict rating:  $\alpha = .89$ ). To measure positive affect, participants rated the degree to which they felt “energetic”, “joyful”, “active”, and “attentive” (pre-conflict rating:  $\alpha = .74$ ; post-conflict rating:  $\alpha = .76$ ). To reduce the participants’ awareness of our interest in their positive and negative affect, we embedded these relevant items in a questionnaire that supposedly measured physical sensation relevant to a laboratory task (e.g., warm cheeks, tense muscles; see Hess & Blairy, 2001).

**Task conflict (TC) and relationship conflict (RC)** were measured with a full-length adapted German version of Jehn’s (1995) Conflict Scale by Lehmann-Willenbrock et al. (2011) (see the second pretest for the stimulus material, TC:  $\alpha = .83$ , RC:  $\alpha = .96$ ).

**Feelings of respect and knowledge gain** To measure feelings of respect, participants rated the extent to which they felt “well regarded”, “taken seriously”, and “disrespected” with an adapted version of the Social Regard Questionnaire by Butcher et al. (2003) ( $\alpha = .91$ ). To measure knowledge gain, participants reported whether the [conflict] task was an “educational experience” that helped them “to learn a lot” (shortened version of the Appraisal Scale by Searle & Auton, 2015;  $\alpha = .74$ ). The response options ranged from 1 = strongly disagree to 5 = strongly agree.

## Performance

**Divergent thinking** was assessed with Guilford’s Unusual Uses test and scored using the Snapshot scoring method (Silvia et al., 2008; Silvia, Martin, & Nusbaum, 2009). For this, raters look at all of the responses participants gave and assign a single holistic creativity score (inter-rater reliability across four raters:  $\alpha = .82$ ) based on the remoteness, novelty, and cleverness of the response. Guilford’s Unusual Uses test requires participants to generate unusual uses for a common household object, such as a wire coat hanger. Participants were given a blank paper sheet and allowed 3 minutes to work on this task.

**Convergent thinking** was measured with 15 items from the German version of the Compound Remote Associate (CRA) task (Landmann et al., 2014). In the CRA task, participants were required to find a noun that fits three unrelated stimulus nouns in such a way that three meaningful compound nouns emerge. For example, they were shown the three stimulus nouns MAGAZINE-TITLE-WEB and then had to find the word PAGE, a word that fits to all of the three stimulus nouns (practice item). Participants were allowed to work on the riddles for 8 minutes but could also stop at any time.

**Prosocial behavior** was assessed with the Tangram (Help/Hurt) Task (Saleem, Anderson, & Barlett, 2015) as an index of contextual performance. During the Tangram Task, participants had to assign puzzles to their interaction partner. Their task was to select 11 out of 30 puzzles across three levels of difficulty: 10 easy, 10 medium, and 10 hard puzzles. Participants were told that their interaction partners would win a prize if they manage to complete all 11 tangrams within 10 minutes, but they would receive nothing if they fail. The number of selected easy puzzles counted as an index of prosocial behavior. To reduce suspicion, participants were told that, because the random number generator chose them to start the discussion, they were now in the lucky position to *only* assign and *not* complete the puzzles.

## Data analysis

The same analysis procedure as for study 1 was used. The only difference was that in study 1, we needed to model our data on two levels, and in study 2, all data were modeled on one level. In all paths that included negative or positive affect, baseline affect was controlled. We used bias-corrected bootstrapping to assess the significance of the total and indirect effects. We do not report fit indices, as both models were fully identified.

## Results—study 2

### Manipulation check

Our conflict manipulation was successful, as most participants experienced a TC in the “pure TC” condition ( $M = 93\%$ ,  $t(70) = 35.4$ ,  $p < .001$ , Cohen’s  $d = 8.46$ ) and all participants experienced a TC in the “TC with RC” condition ( $M = 100\%$ ). Furthermore, participants experienced an RC significantly more often in the “TC with RC” condition,  $M = 100\%$ , compared with the “pure TC” condition,  $M = 37\%$ ,  $M_{\text{diff}} = 63\%$ ,  $t(70) = 11.0$ ,  $p < .001$ , Cohen’s  $d = 1.85$ , and the intensity of the experienced RC was significantly higher in the “TC with RC” condition,  $M = 4.46$ , compared with the “pure TC”

condition,  $M = .70$ ,  $M_{\text{diff}} = 3.76$ ,  $t(115) = 19.0$ ,  $p < .001$ , Cohen's  $d = 3.19$ .

### Preliminary analyses

As expected, participants in the “pure TC” condition reported higher feelings of respect,  $M_{\text{diff}} = 3.50$ ,  $t(124) = 18.17$ ,  $p < .001$ , Cohen's  $d = 3.07$ , and more knowledge gain,  $M_{\text{diff}} = .50$ ,  $t(134) = 2.76$ ,  $p = .007$ , Cohen's  $d = .46$ , than participants in the “TC with RC” condition. Further, participants in the “pure TC” condition experienced significantly lower negative affect,<sup>6</sup>  $M_{\text{diff}} = -1.40$ ,  $t(101) = -6.53$ ,  $p < .001$ , Cohen's  $d = -1.10$ , and higher positive affect,<sup>6</sup>  $M_{\text{diff}} = .40$ ,  $t(126) = 2.60$ ,  $p = .011$ , Cohen's  $d = .44$ , and performed significantly better on the convergent thinking,  $M_{\text{diff}} = .97$ ,  $t(138) = 1.97$ ,  $p = .050$ , Cohen's  $d = .33$ , the divergent thinking,  $M_{\text{diff}} = .36$ ,  $t(138) = 2.80$ ,  $p = .006$ , Cohen's  $d = .47$ , and the prosocial behavior test,  $M_{\text{diff}} = 1.37$ ,  $t(134) = 2.71$ ,  $p = .008$ , Cohen's  $d = .46$ , than participants in the “TC with RC” condition. Means, standard deviations, and correlations of all variables are presented in Table 4.

### Hypothesis testing

The results of the path analyses<sup>7</sup> are displayed in Fig. 2 and the indirect effects are shown in Table 5. The lower level of negative affect during pure TCs compared with that during TCs with RCs was mediated by feelings of respect. This finding supports Hypothesis 1a. Further, the higher level of positive affect during pure TCs than during TCs with RCs was mediated by knowledge gain, lending support to Hypothesis 1b. Moreover, participants' better performance after pure TCs than after TCs with RCs was mediated by positive affect. Thus, Hypothesis 2b was also supported. However, negative affect again did not predict any of the performance outcomes. Hence, no significant indirect effect of pure TCs on performance through negative affect emerged. Thus, Hypothesis 2a was not supported.

### General discussion

We conducted two studies, i.e., a field study and a laboratory study, to explore the mediating mechanisms of the effects of TCs on performance as a function of the level of simultaneously occurring RCs. Drawing on Affective Events Theory (Weiss & Cropanzano, 1996), which transfers appraisal theories of emotion (e.g., Lazarus, 1991; Lazarus &

Folkman, 1984) to the workplace, we proposed that employees would evaluate outcomes of both pure TCs (i.e., TCs without RCs) and TCs with RCs based on their congruence with their work goals, which, in turn, would explain the affective reactions that come along with TCs. Goal congruence is perceived as pleasant, leading to positive affect and goal incongruence is perceived as unpleasant, leading to negative affect. As TCs hinder the attainment of the inter-individual component of the achievement goal to feel *respected* (goal incongruence) and promote the attainment of the intra-individual component of the achievement goal to *gain knowledge* (goal congruence), we predicted that TCs would elicit *negative* as well as *positive affect*. Moreover, we proposed negative affect to be higher during TCs with RCs than during pure TCs due to a higher incongruence between the desire to feel respected and the actually perceived respect during TCs with RCs than during pure TCs. Similarly, we proposed positive affect to be lower during TCs with RCs than during pure TCs due to a lower congruence between the desire to gain knowledge and the actually perceived knowledge gain during TCs with RCs than during pure TCs. Finally, we predicted that both affective states would explain the effects of pure TCs compared with TCs with RCs on *performance*.

The findings across both studies are consistent, highlighting the validity of our results. In line with previous research, pure TCs elicited less negative affect and, expanding upon previous findings, also elicited more positive affect than TCs with RCs. As hypothesized, this difference in affect between participants who experienced pure TCs and those who experienced TCs with RCs was mediated by a difference in feelings of respect and knowledge gain. Further, confirming previous research, pure TCs were associated with better performance than TCs with RCs. Yet, this difference in performance between pure TCs and TCs with RCs was mediated by the difference in positive—but not in negative—affect between pure TCs and TCs with RCs. Hence, our findings suggest that measuring the experience of positive affect is at least as important as measuring the experience of negative affect in response to TCs.

In contrast to most research on workplace conflicts, which has used a cross-sectional design based on retrospective self-reports (see de Wit et al., 2012 for an overview), our studies used both an event-sampling and an experimental approach. Hence, we were able to examine the short-term effects of workplace conflicts involving appraisals and affective changes, which are processes that contribute to the fine-grained mechanism of the conflict-job performance relationship. This approach allowed us to extend previous findings (de Wit et al., 2013) showing that the level of RCs during TCs determines the performance-related consequences of TCs on different types of performance measures that were partially (study 1) or entirely (study 2) unrelated to the conflict situation. Whereas de Wit and colleagues (de Wit et al., 2013) only examined TCs' effects on decision-making, we investigated

<sup>6</sup> Prior to the analysis, we performed a baseline correction.

<sup>7</sup> As control analyses (in which we eliminated the participants who reported suspicion that they were not interacting with a real person) increased rather than decreased the size of the coefficients, we decided to use a more conservative approach and report the results based on all participants.



**Table 4** Means (*M*), standard deviations (*SD*), and correlations between variables in study 2

|                              | <i>M</i> | <i>SD</i> | 1       | 2     | 3       | 4       | 5       | 6     | 7     | 8     | 9   |
|------------------------------|----------|-----------|---------|-------|---------|---------|---------|-------|-------|-------|-----|
| 1. Pure TCs vs. TCs with RCs | .50      | .50       |         |       |         |         |         |       |       |       |     |
| 2. Knowledge gain            | 3.43     | 1.10      | .23**   |       |         |         |         |       |       |       |     |
| 3. Feelings of respect       | 4.25     | 2.09      | .84***  | .29** |         |         |         |       |       |       |     |
| 4. Baseline positive affect  | 4.86     | .94       | -.04    | .22** | .11     |         |         |       |       |       |     |
| 5. Positive affect           | 4.96     | 1.09      | .14     | .29** | .28**   | .58***  |         |       |       |       |     |
| 6. Baseline negative affect  | 1.93     | .88       | .10     | -.08  | -.08    | -.47*** | .27**   |       |       |       |     |
| 7. Negative affect           | 2.32     | 1.42      | -.42*** | -.13  | -.56*** | -.26**  | -.40*** | .28** |       |       |     |
| 8. Convergent thinking       | 4.83     | 2.93      | .17*    | .11   | .21*    | -.01    | .27**   | -.05  | -.06  |       |     |
| 9. Divergent thinking        | 2.81     | .78       | .23**   | .20*  | .16     | .03     | .22**   | .07   | -.21* | .18*  |     |
| 10. Prosocial behavior       | 6.59     | 3.06      | .21*    | -.07  | .24**   | -.11    | .19*    | .07   | -.10  | .29** | .15 |

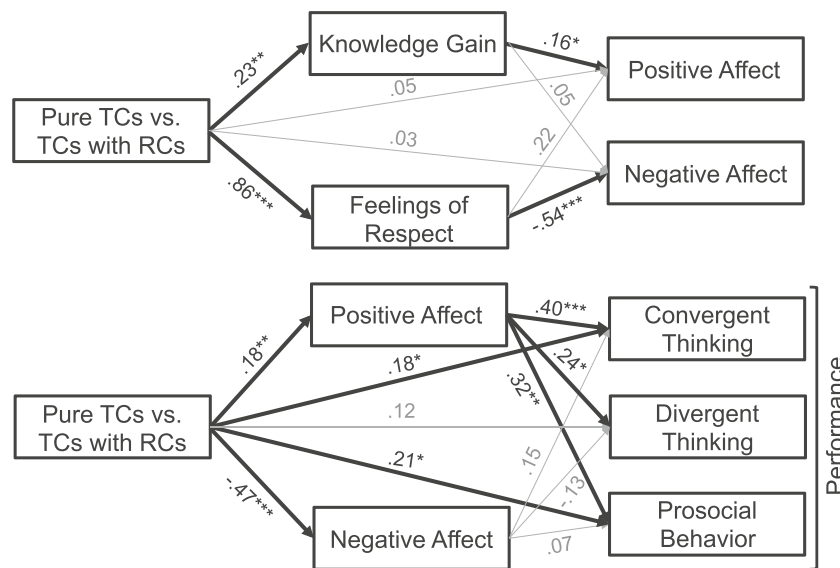
\**p* < .05; \*\**p* < .01; \*\*\**p* < .001. *Pure TCs*, task conflicts without relationship conflicts; *TCs with RCs*, task conflicts with relationship conflicts

TCs’ effects on daily productivity, convergent thinking, divergent thinking, and prosocial behaviors. Further, as mentioned above, we introduced an important mediator that had been recently suggested to play a major role in the course of TCs (Todorova et al., 2014) but to date remains under-researched, i.e., positive affect. Supporting our assumptions, the present findings show that RCs during TCs not only intensified negative affect but also reduced the level of positive affect because RCs during TCs hinder learning and knowledge gain. Then, again, the lower the positive affect, the more detrimental the effects of TCs with RCs on performance.

**Different facets of negative affect**

One surprising finding was the lack of effects of negative affect on performance based on different methods in both

studies. We believe that these findings may stem from the inherent complexity of negative affect. Specifically, negative affect entails avoidance-motivated emotions, such as anxiety, that are detrimental to concentration-based tasks as they inhibit cognitive functioning and promote avoidance behaviors (Carver & Harmon-Jones, 2009; Drevets & Raichle, 1998). However, negative affect also includes anger, which is an approach-motivated emotion. Unfair criticism and hostility, especially during TCs with RCs, can be appraised as unjustified offenses, leading to a desire to defend oneself against the offending partner, thus leading to anger (e.g., Andersson & Pearson, 1999; see also Baumeister, Smart, & Boden, 1996; Blascovich & Mendes, 2010; Lazarus, 1999; Porath & Erez, 2007). Anger has been traditionally considered a destructive force, as it is closely related to aggression and hostility and leads to counterproductive work behaviors (e.g., Fox &



**Fig. 2** Overview of results from model 1 and model 2 in study 2. Coefficients are standardized. Sample size varies slightly between models due to missing data. Pure TCs, task conflicts without

relationship conflicts; TCs with RCs, task conflicts with relationship conflicts. \**p* < .05; \*\**p* < .01; \*\*\**p* < .001

**Table 5** Total and indirect effects on affect (model 1) and performance (model 2)—study 2

| Relationship  | Total effect |                            | Mediator            | Indirect effect |                            |
|---|--------------|----------------------------|---------------------|-----------------|----------------------------|
|   | Estimate     | CI <sub>95%</sub> (LL, UL) |                     | Estimate        | CI <sub>95%</sub> (LL, UL) |
| Model 1— <i>affect</i>                                |              |                            |                     |                 |                            |
| Positive affect— <i>pure TCs vs. TCs with RCs</i>     | <i>.175</i>  | [.037, .297]               | Knowledge gain      | <i>.035</i>     | [.003, .098]               |
|   |              |                            | Feelings of respect | <i>.190</i>     | [−.017, .423]              |
| Negative affect— <i>pure TCs vs. TCs with RCs</i>     | −.473        | [−.572, −.361]             | Knowledge gain      | <i>.012</i>     | [−.021, .059]              |
|   |              |                            | Feelings of respect | −.460           | [−.691, −.238]             |
| Model 2— <i>performance</i>                           |              |                            |                     |                 |                            |
| Convergent thinking— <i>pure TCs vs. TCs with RCs</i> | <i>.179</i>  | [.012, .336]               | Positive affect     | <i>.069</i>     | [.018, .142]               |
|   |              |                            | Negative affect     | −.071           | [−.168, .021]              |
| Divergent thinking— <i>pure TCs vs. TCs with RCs</i>  | <i>.221</i>  | [.063, .375]               | Positive affect     | <i>.042</i>     | [.004, .120]               |
|   |              |                            | Negative affect     | <i>.062</i>     | [−.031, .170]              |
| Prosocial behavior— <i>pure TCs vs. TCs with RCs</i>  | <i>.228</i>  | [.066, .378]               | Positive affect     | <i>.056</i>     | [.013, .128]               |
|   |              |                            | Negative affect     | −.034           | [−.129, .064]              |

Reported total and indirect effects are standardized coefficients. Bias-corrected 95% bootstrapping confidence intervals were calculated to assess significance of total and indirect effects. Significant effects are marked in italics. *CI*<sub>95%</sub>, 95% confidence interval; *pure TCs*, task conflicts without relationship conflicts; *TCs with RCs*, task conflicts with relationship conflicts

Spector, 1999). Yet, as anger signals competence and strength because angry individuals show the will to correct perceived injustice, positive aspects of anger have also been discussed (see Hess, 2014). This idea is supported by findings from laboratory studies showing that TCs that evolve into RCs can be appraised as challenging (Frisch, 2012) and can evoke anger as an energizing force (Boge, 2011). Further, similar to positive affect, anger mobilizes energy and focuses attention (Frijda, 1986; Roseman, Wiest, & Swartz, 1994).

Attributions of personal control, confidence, and certainty that accompany anger (Fischhoff, Gonzalez, Lerner, & Small, 2005; Lerner & Keltner, 2001; Lerner, Gonzalez, Small, & Fischhoff, 2003; Lerner & Tiedens, 2006) can increase effective thinking and persistence in handling challenging tasks (Bandura, 1994). In this vein, Averill (1982) argues that anger may lead to problem-solving, and Mendes, Major, McCoy, and Blascovich (2008) found that anger resulting from discrimination leads to better performance in a word-finding task. If the facets of negative affect linked to anxiety have impaired task performance while facets of negative affect linked to anger have improved task performance (Byron & Khazanchi, 2011; Reio & Callahan, 2004), the result could have been a null effect.

Similarly, the complexity of negative affect may have resulted in a null effect on contextual performance. Angry individuals tend to mistrust and blame others for their negative feelings (Dunn & Schweitzer, 2005; Keltner, Ellsworth, & Edwards, 1993), and angry individuals become selfish, competitive, stereotypic, and punitive (Bodenhausen, Sheppard, & Kramer, 1994; Lerner, Goldberg, & Tetlock, 1998; Van Kleef, De Dreu, & Manstead, 2010). Hence, anger should have a negative effect on contextual behaviors, especially with regard to

an interaction partner with whom one experienced a conflict. However, simultaneously, anxiety can have the opposite effect. Individuals who have been socially excluded often behave in a way that enhances the likelihood of reaffiliation (such as offering help to others) if the opportunity of reconnection exists (Bernstein, 2016). Similarly, intimidated and frightened individuals who have suffered losses in their social self-esteem may attempt to boost this social self-esteem to its normal level by behaving in a friendly manner and hoping for friendliness in return. Thus, the potential positive effects of anxiety on contextual performance may have counteracted the negative effects of anger on contextual performance, leading to an inconclusive total effect of negative affect on contextual performance. Therefore, future research should depart from the traditional assessment of positive and negative affect and assess discrete emotions instead.

### Strengths and limitations

The present research provides important insights into the mechanisms by which conflicts at work can help or hinder performance and well-being in terms of positive and negative affect. The strong coherence of findings across the very different designs suggests that the mechanisms revealed here are relevant for a wide range of conflict situations.

Nevertheless, our studies also have several limitations. In study 1, due to the time constraints inherent to event-sampling studies in the field, we used single items to measure all constructs during the working day. Consequently, we could neither calculate the reliability of the measures nor conduct a confirmatory factor analysis to examine the discriminate

validity of the measures. Yet, it is a common procedure to shorten scales in diary studies and even more so in event-sampling studies (Diebig et al., 2017; Sonnentag et al., 2008). Further, single-item measures often do not have inferior psychometric properties compared with their corresponding multiple-item measures, especially if the constructs are unidimensional and unambiguous (e.g., Elo, Leppänen, & Jahkola, 2003; Robins, Hendin, & Trzesniewski, 2001; Sackett & Larson, 1990; Wanous, Reichers, & Hudy, 1997). Hence, we followed the recommendations of a recent study (Fisher et al., 2016) and carefully selected—as well as pretested—all our single-item measures with an independent sample of 96 participants prior to the data collection of study 1. Since we could replicate central findings from study 1 in study 2 using full-length scales, the items we chose for the single-item measures seemed to have captured the constructs well.

Further, we used self-reports to measure both conflict and performance evaluations in study 1. Thus, our results could be inflated due to halo error stemming from common method variance. It would have been preferable to use an objective measure (as we did in study 2) or a different source (i.e., the rating of a supervisor) to measure performance. However, objective performance tests produce valid results only under controlled conditions. Further, to observe the participants' daily performance fluctuations, supervisors would have needed to have a very close connection to the participants, which would have limited the generalizability of our findings. Hence, in study 1, we chose a different method to counteract potential bias due to halo error: We constructed a time lag between conflict and performance measurements.

In study 2, we did not manipulate the presence versus absence of TCs. TCs were held constant, and only the level of RCs was varied. Hence, we could not test whether TCs facilitate performance over the absence of any conflicts. Further, we could not examine whether RCs are more or less damaging when TCs are absent than when they are present. Yet, a convincing TC *absent* condition, similar in length and complexity to our TC *present* conditions, is hard to conceive. It would have been awkward to interact with someone who always agrees and simply repeats the participants' arguments. Moreover, we designed study 2 on the basis of our results from study 1, which show that TCs indeed improve performance in contrast to situations with no conflicts and that RCs are less damaging when TCs occur simultaneously (see footnote 2).

### Practical implications and conclusion

Due to shifts in organizational structures and higher demands for complexity and interactivity over the last decades, teamwork has become unavoidable. Hence, workplace conflicts are ubiquitous, and it is thus necessary to gain a deeper

understanding of the processes involved in conflicts and their influence on individuals' performance and organizations' productivity. Our results highlight the importance of positive affect. RCs during TCs reduce positive affect, which in turn harms performance. Importantly, even though RCs during TCs also produce stress, this alone is not a determining factor for the harmful effects of TCs with RCs on performance.

Our findings confirm previous research highlighting the importance of early interventions to prevent RCs from developing during TCs. Further, our findings extend previous research as they help to identify underlying mechanisms that explain the destructive nature of RCs during TCs. RCs turn TCs—which, in the real world, cannot and should not be entirely avoided—into disruptive discussions that deprive attendees of their energy and leave behind exhausted employees who are unable to behave appropriately towards others or complete assigned work tasks. In this sense, the negative effects of TCs depend on the extent to which the conflict parties' attentiveness and alertness suffer from perceptions of hostilities during these TCs. Hence, RCs during TCs should be prevented or at least mitigated to ensure a constructive and fruitful task-related discussion with positive affective, cognitive, and social consequences.

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### Compliance with ethical standards

All procedures performed in the two studies were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the studies.

**Conflict of interest** The authors declare that they have no conflict of interest.

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