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## BRIEF REPORT

# Investigating goal conflict as a source of mixed emotions

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This research investigated whether (1) the experience of mixed emotions is a consequence of activating conflicting goals and (2) mixed emotions are distinct from emotional conflict. A preliminary experiment (Study 1,  $N = 35$ ) showed that an elicited goal conflict predicted more mixed emotions than a condition where the same goals were not in conflict. The second experiment was based on naturally occurring goal activation (Study 2,  $N = 57$ ). This illustrated that mixed emotions were experienced more following conflicting goals compared with a facilitating goals condition—on both a direct self-report measure of mixed emotions and a minimum index measure. The results also showed that mixed emotions were different to emotional conflict. Overall, goal conflict was found to be a source of mixed emotions, and it is feasible that such states have a role in resolving personal dilemmas.

*Keywords:* Goal conflict; Mixed emotions; Mixed feelings; Emotional complexity.

For pleasure is a state of soul, and to each man that which he is said to be a lover of is pleasant [...] Now for most men their pleasures are in conflict. (Aristotle, *Nicomachean Ethics*)

Everyday life often reminds us that Aristotle was possibly correct in asserting that our greatest pleasures usually collide. Imagine you are finishing an important project at the office and need to call your partner to say you will be late for dinner. On the one hand, it would feel good to finish your work and receive some recognition for it, but, on the other hand, it would feel bad to hurt your partner's feelings, especially if you wanted to spend

more time together. So you experience mixed feelings as you decide what to do.

Mixed emotions are defined as the experience of simultaneously feeling both positive and negative emotions (Larsen, McGraw, & Cacioppo, 2001). Mixed emotional states are an acknowledged feature of personal experience and are suggested to have unique associated physiological patterns (Kreibig, Samson, & Gross, 2013). However, extant research has typically focused on the experience of only singular affects. In part, this is due to assertions that positive affect and negative affect cannot coexist, as they represent

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opposites of bipolar dimension of valence (e.g., Russell & Carroll, 1999). This view has been challenged both by theory and by evidence demonstrating simultaneous experiences of positive affect and negative affect (e.g., Larsen & McGraw, 2011; Schimmack, 2001). It is much less clear however under what circumstances mixed emotions can emerge.

The aim of the present research was to test whether pursuing conflicting goals leads to mixed emotions. Control-process theory asserts that emotions arise from discrepancies between desired ends and progress towards (or away from) such goals (Carver & Scheier, 1990; Powers, 1973). Powers, Clark, and McFarland (1960) observed that when discrepancy arises from separate goals (e.g., impulse and restraint) and no common low-level goals can resolve such demands, then conflict is produced. Powers (1973) further asserted that conflict is usually accompanied by a continuous flow of different emotions, as discrepancies between goals cannot be easily corrected.

Several theoretical approaches have considered the association between conflicting goals and mixed emotions (e.g., Carver, Sutton, & Scheier, 2000; Ellsworth & Scherer, 2003; Fishbach & Ferguson, 2007). For example, Fishbach and Ferguson (2007) noted that setting multiple goals may hinder the attainment of some of them, and this can lead to experiencing mixed emotions, especially when the means available to progress in one of these goals are incongruent with the means necessary to progress in another. An illustration of conflicting goals leading to mixed emotions would be a salesman evaluating a recent offer to move abroad for a lucrative promotion (instrumental goal) when his wife has just secured her first teaching post, dictating that they need to stay at home (attachment goal).

Previous evidence has offered some insight into the connection between conflicting goals and mixed emotions (Boudreaux & Ozer, 2013; Mukhopadhyay & Johar, 2007). Mukhopadhyay and Johar (2007; Study 1) investigated the affective responses triggered when people make decisions about unintended purchases in consumer scenarios. This kind of scenario activates both the

goal of avoiding spending money unnecessarily and the goal of acquiring and using products (Mukhopadhyay & Johar, 2007). Results showed that participants who decided to buy a product felt happier, guiltier and more remorse than participants who decided not to buy the product. However, the fact that the *buyers* experienced higher average scores for different emotions does not demonstrate the presence of more mixed emotions compared to those who did not buy; in fact, the study did not provide a clear indicator of the presence of mixed emotions (e.g., minimum index; Schimmack, 2001). Furthermore, it is not clear whether the people who decided not to buy were experiencing more, equal or less conflict between goals compared to those who bought an item; therefore, it is difficult to conclude that the outcome reflects the influence of conflicting goals on mixed emotions.

In another study, Boudreaux and Ozer (2013) showed that people who experience more conflict among their goals experienced more mixed feelings compared to goals that facilitate each other. However, they captured mixed emotions using only a single-item measure, and without experimentally investigating the influence of conflicting goals on mixed emotions. Interestingly, they understood mixed feelings as reflecting a lack of well-being, which contrasts with recent research indicating mixed emotions are associated with greater well-being and less GP consultation over a 10-year period (Hershfield, Scheibe, Sims, & Carstensen, 2012).

In sum, different theoretical and empirical contributions suggest that goal conflict may be linked to experiencing mixed emotions. Nevertheless, thus far this hypothesis has been only partially tested, leaving several questions unanswered about the proper activation of conflicting goals, the adequate measurement of mixed emotions and the place of mixed emotions in well-being. This investigation therefore examined in detail the influence of conflicting goals in eliciting mixed emotions. We look to determine whether conflicting goals elicit mixed emotions using more appropriate measures, and examine whether forms of goal multiplicity other than conflicting goals

can instigate mixed emotions. Finally, we explore the place of emotional conflict in the relationship between goal conflict and mixed emotions because it has been found that people can experience high levels of conflict over the emotions felt in one particular moment, and this construct has been viewed as a pernicious type of conflict (King & Emmons, 1990).

## AQ4 OVERVIEW OF STUDIES

Study 1 examined whether people dealing with an elicited conflict between a pro-social goal and a self-interest goal would experience more mixed emotions, as compared to people dealing with the same goals when they were not in conflict (Hypothesis 1). Study 2 also examined whether mixed emotions were a consequence of conflicting goals but this time using naturally occurring goal activation, rather than artificial but controlled activation as in Study 1. The study specifically compared conflicting goals and facilitating goals to verify that it is the conflict and not just multiple goal activation that is responsible for mixed emotions. Our hypothesis was that mixed emotions would be higher following conflicting goals compared to facilitating goals (Hypothesis 2). Study 2 also examined whether experiencing mixed emotions is simply a reflection of the individual's tendency to experience emotional conflict, or should be treated as a separate construct.

## STUDY 1

### Method

In accordance with journal policy, we certify that we report below how we determined our sample size, all data exclusions, all manipulations and all measures for both Study 1 and Study 2.

The participants in this experiment were 35 student volunteers ( $M_{age} = 29.60$  years,  $SD = 9.18$  years; 22 females) who completed the study

online. We determined the sample size by testing as many participants as possible before the academic term finished (with the goal of 20–30 participants in each condition).

Participants completed two separate questions to indicate the level of importance they attached to trying to contribute to charitable organisations (*pro-social goal; I try to contribute to charitable organizations*) and to trying to use their time efficiently (*self-interest goal; I try to save my time and used it efficiently*), using a scale ranging from 1 (*not important at all*) to 5 (*very important*). To ensure activation of goals, participants were asked to write two reasons why they believed in contributing to charity and trying to use time efficiently.

After this initial goal activation procedure, participants were informed that they were about to make a real decision involving the two goals. Following these instructions, participants were assigned by a computer programme to either an experimental or a control condition.<sup>1</sup> The experimental group ( $n = 22$ ) was instructed to choose between two conflicting options, in which the first had higher self-interest value and the second had higher pro-social value. The first option implied that the research would donate £4 (around \$7) to a charitable organisation in return for the participant spending 3 minutes completing a task. The second option implied that the research would donate £24 (around \$40) to a charitable organisation in return for the participant spending 18 minutes completing the same task. In contrast, the control group ( $n = 13$ ) was presented with two non-conflicting options. One option implied that the research would donate £24 to a charitable organisation, and in return, the participant would spend 5 minutes completing a task; the second option kept the amount of money offered identical but involved spending 7 minutes completing the same task.

A four-item subjective scale to directly measure mixed emotions (Berrios, Totterdell, & Kellett, 2013) was administered immediately after participants saw the options in both conditions ( $M = 2.38$ ,  $SD = 1.05$ ;  $\alpha = 0.90$ ; i.e., "I'm feeling contrasting

<sup>1</sup> Several participants' responses during the first days of testing were not recorded by the system because of a programming error, so it was not possible to include them in the final sample.

emotions”; “I’m feeling a mixture of emotions”; “I’m feeling different emotions at the same time”; and “I’m feeling a combination of different emotions at the same time”). Participants were requested to rate the extent to which they were experiencing mixed emotions while deciding about the options presented on a five-point Likert-format scale from 1 (*not at all*) to 5 (*very much*). Conflict was measured using two separate items: (1) rating whether contributing to a charitable organisation had harmful effects on saving their time ( $M = 1.77$ ,  $SD = 1.09$ ; “Did contributing to the charity have harmful effects on saving your time?”) and (2) rating whether saving personal time had harmful effects on contributing to a charitable organisation ( $M = 2.14$ ,  $SD = 1.31$ ; “Did saving your time have harmful effects on contributing to the charity?”), using a five-point Likert-format scale from 1 (*not at all*) to 5 (*very much*).

## Results

Manipulation checks demonstrated that participants in the conflicting goals condition ( $M = 2.10$ ,  $SD = 1.23$ ) perceived more harmful effects of contributing to the charity on saving personal time,  $t(33) = 2.42$ ,  $p < .05$ , compared to the non-conflicting goals condition ( $M = 1.23$ ,  $SD = 0.44$ ). Participants in the conflicting goals condition ( $M = 2.64$ ,  $SD = 1.36$ ) also perceived more harmful effects of saving personal time on trying to contribute to the charity,  $t(33) = 3.29$ ,  $p < .01$ , compared to the non-conflicting goals condition ( $M = 1.31$ ,  $SD = 0.63$ ). More importantly, results showed that participants in the conflicting goals condition ( $M = 2.69$ ,  $SD = 0.98$ ) felt significantly more mixed,  $F(1, 33) = 5.98$ ,  $p < .05$ ,  $d = 0.84$ , compared to the control group ( $M = 1.85$ ,  $SD = 0.99$ ). Significant differences were found for gender on mixed emotions,  $t(33) = 2.28$ ,  $p < .05$ , but the inclusion of gender in the model did not change the main effect observed,  $F(1, 32) = 5.67$ ,  $p < .05$ . The results support our Hypothesis 1 that eliciting conflicting goals can significantly instigate mixed emotions when compared to a condition where the same goals are not in conflict.

## STUDY 2

### Method

Participants were 58 first-year psychology degree students ( $M_{\text{age}} = 19.41$  years,  $SD = 2.46$  years; 48 females) who voluntarily participated in exchange for course credits, and were told that the study intended to understand the effects of recalling recent events related to personal goals on their affective experiences. The sample size was estimated a priori using G\*Power 3.1 (Faul, <sup>AQS</sup> Erdfelder, Lang, & Buchner, 2007) in order to achieve 80% of power, considering two groups, a probability error of .05, and a medium to large effect size (based on a meta-analysis conducted by the authors). One female participant was excluded from the sample because she dropped out of the study before completing the experimental procedure, so the final sample size was composed of 57 participants.

Participants were randomly assigned (using a computer randomizer) to one of two conditions. In the conflicting goals condition ( $n = 30$ ), participants were asked to recall as vividly as possible a recent conflicting goals event. A specific definition of goal conflict and some examples were provided. Participants in the facilitating goals group ( $n = 27$ ) were instructed to recall a recent facilitating goals event and were provided with a specific definition of facilitating goals with some examples. In both conditions, participants wrote a detailed description of the event. Participants were encouraged to write what happened in the event, what they thought and how they felt.

Mixed emotions were measured directly using two items from the four-item mixed emotions scale used in Study 1 (i.e., “I’m feeling contrasting emotions”; “I’m feeling different emotions at the same time”), with the addition of two new reverse-coded items. These two new items were constructed to exclude instances where participants experienced multiple emotions of one valence (positive or negative; i.e., *I’m feeling clearly positive or negative emotions, not both* and “I’m feeling mostly one type of emotion/s”). Averaged scores produced a single direct measure of mixed

emotions ( $M = 3.15$ ,  $SD = 0.98$ ;  $\alpha = 0.74$ ). In order to calculate the minimum index (estimated using the minimum value between positive affect and negative affect of mixed emotions; Schimmack, 2001), participants completed a scale based on 16-emotion adjectives. This was adapted from a measure developed by Giner-Sorolla (2001) using a unipolar format. Dimensions of positive affect (i.e., enthusiasm, proud, calm, excited, confident, at ease, satisfied and relaxed;  $\alpha = 0.91$ ) and negative affect (i.e., sad, nervousness, angry, frustrated, worried, regretful, bored and ashamed;  $\alpha = 0.81$ ) were calculated. For those emotions that were recorded as felt (i.e., marked as “yes”), the scale ranged from 1 (*very little*) to 7 (*extremely*). Emotional adjectives marked as “no” were coded as zero.

The level of conflict between goals was measured after mixed emotions using one item (“To what extent did one goal had harmful effects on the other goal?”) that evaluated the extent to which one of the goals had harmful effects over the other, using a scale ranging from 1 (*not at all*) to 5 (*very much*). The level of facilitation between goals was also measured using one item (“To what extent did one goal help the other goal?”) that asked the extent to which one of the goals had beneficial effects over the other one (same response scale). Finally, participants completed a short version of the ambivalence over emotional expression questionnaire<sup>2</sup> (AEQ; King & Emmons, 1990)—e.g., *I would like to express my affection more physically but I am afraid others will get the wrong impression* ( $\alpha = 0.81$ )—in order to measure emotional conflict.

## Results

Manipulation checks showed that participants who wrote about a recent conflicting goals event ( $M = 3.70$ ,  $SD = 1.06$ ) reported significantly more harmful consequences between the goals involved,  $t(55) = 8.98$ ,  $p < .01$ , compared to the group who wrote about a recent facilitating goals event ( $M = 1.37$ ,  $SD = 0.89$ ). Furthermore, participants in the

conflicting goals group ( $M = 1.43$ ,  $SD = 1.01$ ) reported significantly less beneficial effects between the goals involved,  $t(55) = 12.43$ ,  $p < .01$ , compared to the facilitating goals group ( $M = 4.37$ ,  $SD = 0.74$ ). So as intended, the recent conflicting goals event was perceived as having more harmful effects and less beneficial effects between goals compared to the facilitating goals event.

A multivariate omnibus test showed that the conflicting goals condition produced on average higher mixed emotion scores compared to the facilitating goals condition,  $F(2, 53) = 6.83$ ,  $p = .002$ . In particular, results yielded a significant effect of condition on the direct measure of mixed emotions,  $F(1, 54) = 12.94$ ,  $p < .01$ ,  $d = 0.98$ . Participants in the conflicting goals conditions reported more mixed emotions ( $M = 3.54$ ,  $SD = 0.78$ ) than participants in the facilitating goals conditions ( $M = 2.67$ ,  $SD = 1.01$ ), using the direct measure. Similarly, the test of the between-subject effect of condition on the minimum index of mixed emotions produced a significant effect,  $F(1, 54) = 4.47$ ,  $p < .05$ ,  $d = 0.57$ . Participants in the conflicting goals conditions reported more mixed emotions ( $M = 0.68$ ,  $SD = 0.75$ ) than participants in the facilitating goals conditions ( $M = 0.34$ ,  $SD = 0.38$ ), using the minimum index. These results remained significant after the inclusion of emotional conflict as a covariate. The effects of emotional conflict on both measures of mixed emotions were not significant,  $F_s < 1.5$ . ANOVA analyses revealed no significant differences for gender or age on mixed emotions,  $F_s < 1$ .

As shown in Table 1, the raw correlation between positive affect and negative affect in the conflicting goals group showed a low non-significant negative correlation ( $r = -.28$ ; 95% CI:  $-0.62$  and  $0.13$ ), whereas the facilitating goals group exhibited a strong and significant negative association ( $r = -.75$ ; 95% CI:  $-0.89$  and  $-0.44$ ). It is worth noting that the mixed emotion measures correlated positively with positive affect and negatively with negative affect in the

<sup>2</sup>Original item numbers extracted from King and Emmons (1990) were 1, 3, 4, 5, 6, 8, 10, 11, 15, 23, 26 and 28.

**Table 1.** Descriptive statistics and Spearman's rho correlations of the different measures of affect in Study 2 ( $N = 57$ )

	<i>M</i>	<i>SD</i>	<i>Positive affect</i>	<i>Negative affect</i>	<i>Emotional conflict</i>	<i>Direct measure</i>	<i>Minimum index</i>
<i>Conflicting goals group</i>							
Positive affect	0.79	0.88	–				
Negative affect	2.26	1.19	–0.28	–			
Emotional conflict	2.91	0.82	–0.26	0.38**	–		
<i>Mixed emotion indices</i>							
Direct measure	3.54	0.79	0.38**	–0.24	–0.13	–	
Minimum index	0.68	0.75	0.98***	–0.22	–0.20	0.36**	–
<i>Facilitating goals group</i>							
Positive affect	2.75	1.91	–				
Negative affect	0.63	0.81	–0.75***	–			
Emotional conflict	2.64	0.70	–0.20	0.34*	–		
<i>Mixed emotion indices</i>							
Direct measure	2.67	1.00	–0.42**	0.53***	–0.01	–	
Minimum index	0.34	0.38	–0.45**	0.76**	–0.06	0.50***	–
<i>Full sample</i>							
Positive affect	1.70	1.75	–				
Negative affect	1.50	1.31	–0.69***	–			
Emotional conflict	2.78	0.78	–0.28**	0.39***	–		
<i>Mixed emotion indices</i>							
Direct measure	3.15	0.98	–0.25*	0.37***	–0.01	–	
Minimum index	0.53	0.62	0.18	0.24*	–0.11	0.45***	–

Note: \* $p < .1$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ . Polychoric correlations showed a similar pattern between positive affect and negative affect across groups: conflicting goals group =  $-0.29$ , *ASE*: 0.18; facilitating goals group =  $-0.80$ , *ASE*: 0.08; full sample =  $-0.72$ , *ASE*: 0.07. *ASE*, asymptotic standard error.

conflicting goals condition but showed inverted relations in the facilitating goals condition. Finally, non-parametric correlation between mixed emotions and emotional conflict was almost null ( $r = -.01$ ; 95% CI:  $-0.28$  and  $0.25$ ), with the same pattern evidenced for the correlation between the minimum index of mixed emotions and emotional conflict ( $r = -.11$ ; 95% CI:  $-0.37$  and  $0.16$ ). This provided additional evidence to support the separation of emotional conflict and mixed emotions.

## DISCUSSION

Study 1 showed that mixed emotions were triggered by activating conflict between goals and demonstrated that mixed emotions emerge when a person decides about a conflicting goals situation *in the moment*. This effect has only been previously recorded when evaluating the outcomes of

personal decisions (e.g., Larsen, McGraw, Mellers, & Cacioppo, 2004). Study 2 demonstrated that it is conflict between goals that prompts mixed emotions, rather than multiple goal activation of another kind (i.e., facilitating goals). Moreover, Study 2 showed that the results were similar when measuring mixed emotions using direct items or using a minimum index. Finally, Study 2 showed negligible correlations between emotional conflict and both the direct measure of mixed emotions and the minimum index.

This research makes two distinct contributions to the understanding of mixed emotions. First, the work identified goal conflict as a meaningful precursor or antecedent of mixed emotions; in accordance with previous conceptualisations (e.g., Ellsworth & Scherer, 2003; Fishbach & Ferguson, 2007), conflicting goals were found to be a reliable predictor of mixed emotions, for both artificially activated and naturally occurring goal conflicts.

Experiencing conflicting goals seems to be the rule rather than the exception in life (Köpetz, Faber, Fishbach, & Kruglanski, 2011), and the current research therefore implies that mixed emotions may be similarly ubiquitous. Second, the schism between mixed emotions and emotional conflict that was established appears important in understanding how mixed emotions may possibly contribute to well-being. By differentiating the concepts, it is possible to suggest that mixed emotions do not represent a marked emotional conflict itself, but appear instead as an expected consequence of goal conflict. Mixed emotions and emotional conflict should therefore not be treated as the same construct. However, it is important to note that the evidence presented here focused only on one type of emotional conflict related to emotional expression. This limitation should be addressed in future studies incorporating broader and different methods to unravel the relationship between emotional conflict and mixed emotions.

A recent appraisal theory of affect has asserted that mixed emotions may result from multifaceted evaluations of the relevance and implications of an event (Shuman, Sander, & Scherer, 2013). The theory identifies conflict as a primary source of mixed emotions, but it is the conflict within the appraisal of a situation, between different types of appraisal or in the processing of an appraisal that yields mixed emotions. Our approach views these appraisals as part of the system that indicates progress towards or away from personal goals. Shuman et al. (2013) give the example of sugary food consumption producing mixed emotions, owing to a conflict between pleasantness and goal-conduciveness appraisals. From the conflicting goals perspective, we would argue that sugary food consumption produces mixed emotions as it is in line with a hedonic goal (which feels pleasant), whilst simultaneously obstructing a dental health goal (which feels unpleasant). This implies that the experience of mixed emotions when facing multiple goals may not be merely a residual indicator of an ongoing course of action. Instead mixed emotions may be one step in a goal-directed sequence that permits individuals to first

perceive and experience the conflict, before addressing it behaviourally. This would suggest that different combinations of appraisals arising from varied goal conflicts would lead to different blends of emotions, and the relevance of differing types of conflicting goals for differing mixed emotions should be addressed in future studies.

The association between goal conflict and mixed emotion may have functional significance. For example, one way through which mixed emotions could contribute to better mental health would be by alerting individuals about the presence of goal conflict and at the same time motivating them to resolve this conflict. According to the *affect alarm model* (Inzlicht & Legault, 2014), negative affect—in particular distress—is what initiates efforts to act over conflict, because such feelings signal a discrepancy and motivate people to reduce negative affect and maximise positive affect. We would extend this approach sustaining that in order to maximise positive affect, a certain amount of positive emotions need to be experienced during conflict. Conflicting goals usually involve mixed motives, so the optimal response is unspecified and different behaviours receive similar levels of activation (Hirsh, Mar, & Peterson, 2012). The experience of negative affect during conflict signals the difficulty to address the situation, which is certainly important to identify the problem. Equally, positive affect during conflict signals the potential benefits from adopting each response. Together, positive affect and negative affect might allow flexible behavioural responses to situations that require solutions to mutually incompatible goals.

## CONCLUSIONS

This research aimed to enhance understanding of the precursors of mixed emotions, and such states were demonstrated to be a consequence of the presence of conflicting goals. During conflicting goals, people experience significantly more mixed emotions than in (1) situations where a single goal is the focus (Study 1) and (2) situations where



BERRIOS, TOTTERDELL, KELLETT

different goals facilitate each other in the consummation of their respective ends (Study 2). New research avenues for the study of the relation between mixed emotions and well-being should emerge from the distinction between emotional conflict and mixed emotions. In summary, conflicting goals seem to be a particularly relevant context for the experience of mixed emotions.

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