The Development and Consequences of Group Affective Tone

Amy Collins

BPsySc (Hons)

Griffith Business School
Department of Employment Relations and Human Resources
Griffith University

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Abstract

The rise of team-based structures within organisations has prompted increasing research focused at improving team processes, typically with a view to increasing team performance (e.g., Allen & Hecht, 2004). This expanding team-level focus within the organisational behaviour literature has required researchers to consider the complexities surrounding the conceptualisation and measurement of team-based constructs and phenomena (e.g., team satisfaction; team cohesion; team conflict), including how best to aggregate traditionally individual-level phenomena to the team level (Bliese, 2000; Chan, 1998). Increasing recognition of the role of affect in organisations (e.g., Ashkanasy & Dorris, 2017; Barsade & Gibson, 2007) has similarly led to a growing cohort of researchers conceptually and empirically considering affect-related constructs at the team level (e.g., Ashkanasy, 2003; Barsade & Gibson, 2012; Côté, 2007).

One influential stream within this area is research on group affective tone established by George and her colleagues (e.g., George, 1990, 2002; George & King, 2007). George (1990) provided some of the earliest empirical evidence for group affective tone by demonstrating that individuals in workgroups tend to experience highly similar levels of state affect. The affective tone of a team has been shown to have significant impact on team functioning. A more positive affective tone has been linked with a number of advantageous team outcomes, including better team cooperation (Barsade, 2002), better coordination (Sy, Côté, & Saavedra, 2005), lower team conflict (e.g., Barsade, 2002), lower absence rates within the team (Mason & Griffin, 2003), and more helping behaviours displayed within the team (Chi, Chung, & Tsai, 2011). However, there have also been some counterintuitive findings that suggest the impact of group affective tone on team outcomes is more complex than sometimes theorised.

In line with the IPSO model of team effectiveness (Marks, Mathieu, & Zaccaro, 2001) my program of research will consider the interplay of affective input variables of the team (specifically trait affect and emotional intelligence) on the development of group affective tone and discrete emotional tones as an emergent state. I use affect-as-information theory (Schwarz & Clore, 2003) and the emotions-as-social-information model (EASI; Van Kleef, 2009) to guide my propositions regarding the influence of group affective tone on team dynamics (conflict) and outcomes (team performance and team satisfaction). Finally, my expectations regarding the impact of team conflict on
team outcomes are based on Jehn and Bendersky’s (2003) contingency theory of the consequences of conflict. My broad research questions are:

RQ1. Under what conditions will team members’ positive affect and negative affect converge?

RQ2. What are the consequences of group affective tone on team conflict?

RQ3. What are the consequences of group affective tone on team performance/satisfaction?

RQ4. To what extent does team emotional intelligence influence the interplay of team conflict and team performance?

Three studies were conducted to address these questions. All studies used student samples in order to have a high amount of control over the formation of teams and the tasks they completed. Study 1 involved existing student teams assessed during the completion of a survival decision-making task. It examined the convergence of team members’ affect, and whether the consequences of teams’ affective tone on experienced conflict and objective performance in the task was dependent on teams’ (self-rated) collective emotional intelligence, as well as the role of collective emotional intelligence in determining the effectiveness of team conflict on performance. Study 2 utilised an experimental design of randomly formed university teams, and addressed how the trait affective composition of a team contributed to the affective tone of teams, and whether this link was contingent on teams’ self-rated level of emotional intelligence, as well as the impact of collective emotional intelligence and formally imposed display rules on the link between teams’ affective tone and performance (both self-rated and objective) in a creative task. Finally, the aim of Study 3 was to take a more fine-grained look at the collective emotions of a team, and investigate the convergence of discrete emotions (e.g., joviality, fear, and hostility) in university teams completing a workplace-based decision-making task, as well as whether the consequences of teams’ various emotional tones on experienced conflict and objective performance was dependent on teams’ collective emotional intelligence (assessed via a situational judgement test).

Results of my program of research have both supported previous research on affective tone and extended knowledge regarding the impact of collective emotional intelligence on team interactions with some counterintuitive findings. In an extension of previous research on affect at the team level, I examined specific emotions and their convergence in short tasks, and demonstrated that specific emotions will have
differential influences on team outcomes which are not easily apparent when researchers classify affect as either globally positive or negative in nature.

Regarding the role of emotional intelligence in team affectivity, different facets were found to have opposing effects. My research has extended past findings by demonstrating that the awareness facets of emotional intelligence can be harmful to a team’s functioning when considering the negative affective tone of the team. When a team is lower in negative affective tone, having high awareness of emotions can be detrimental in terms of both relationship conflict experienced in the team, and objective performance of the team. This finding is in contrast to the majority of affective tone models which predict emotional intelligence will help buffer against the harmful impacts of negative affective tone.

However, certain management aspects of emotional intelligence were found to be highly valuable in the interplay between positive affective tone, task conflict, and team performance. Contrary to past theory suggesting the desirability of a highly positive affective tone (e.g., George, 1995), and research demonstrating a simple positive link between positive tone and performance (e.g., Hmielecki, Cole, & Baron, 2012; Kim & Choi, 2012) my research has challenged the notion that a positive affective tone is universally advantageous. Based on my research, during complex decision-making or creative tasks, teams need to be able to manage their positivity so that it remains functional, rather than making them complacent about their task; providing team-level support for affect-as-information theory (Schwarz & Clore, 2003).

The practical implications of my research include the notion that team-level emotional intelligence may be a vital resource for maximising team performance. Managers of teams, in particular, should be aware that a highly positive team atmosphere may not be beneficial unless team members possess the skills to manage that collective positive emotion productively. Team selection which considers the emotional intelligence of potential members to ensure adequate collective levels, or training interventions which aim to increase employees’ emotional intelligence are two options for organisations to consider.
Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Chapter Aims

Overview of the Research

Under What Conditions will Team Members’ Positive and Negative Affect Converge? (Research Question 1)

Convergence of Affect

Convergence of Discrete Emotions

Trait Affect and Emotional Intelligence as Inputs to Affective Tone

What are the Consequences of Group Affective Tone on Team Conflict? (Research Question 2)

Negative Affective Tone and Relationship Conflict

Hostile Tone and Relationship Conflict

What are the Consequences of Group Affective Tone on Team Performance? (Research Question 3)

Positive Affective Tone and Team Performance

Emotional intelligence as a moderator

Negative Affective Tone and Team Performance

Emotional intelligence as a moderator

Display rules as a moderator

To What Extent does Team Emotional Intelligence Influence the Interplay of Team Conflict and Team Performance? (Research Question 4)

Theoretical Contributions

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CHAPTER 1: INTRODUCTION

Chapter Aims

Affective concepts are important to consider in the context of the workplace, as they have been shown to affect a wide variety of behaviours, dynamics and outcomes at various levels of an organisation (Ashkanasy, 2003; Ashkanasy & Dorris, 2017). The term affect has come to represent both mood (i.e., enduring, diffuse and lower intensity feelings) and discrete emotions (i.e., short duration, higher intensity and tied to discrete events; e.g., anger, sadness; Forgas, 1995). Watson, Clark, and Tellegen’s (1988) influential work further separates the independent dimensions of positive and negative affect; where positive affect reflects the degree to which someone feels enthusiastic, active and alert; while negative affect reflects the extent that a person feels anger, contempt, disgust, fear, or nervousness (Watson et al., 1988). State affect reflects the experience of affect, while trait affect represents a person’s relatively stable tendency toward experiencing a particular affect (George, 1996b). Both are important to consider in the dynamics of the workplace, as both can affect interpersonal dynamics, workplace behaviours, and performance in tasks (Kozlowski & Ilgen, 2006). The primary aim of my research is to investigate the phenomenon of group affective tone (both positive and negative), including its formation and consequences on team outcomes, as well as to explore moderating factors that may enhance or constrain those relationships.

Barsade and Knight’s (2015) review highlighted an increasing focus on team-level affective factors, with particular emphasis on group affective tone, defined as “consistent or homogeneous affective reactions within a group” (George, 1990, p. 108). This concept reflects how individuals in workteams tend to experience highly similar levels of state affect, such that individuals’ affect could be meaningfully aggregated to the team level (via team averages) and predict team behaviours such as absenteeism and
pro-social behaviour (George, 1990, 1995). While researchers have increased our understanding of the formation of affective tone, and the various consequences it can have on work teams; further work is needed, specifically on contextual and compositional factors of a team which may influence these affective processes (e.g., Barsade & Knight, 2015; Fulmer & Ostroff, 2016).

The aim of this chapter is to provide a brief overview of the growth of research on affective tone and the closely related dyadic concept of emotional contagion; as well as highlight areas in which group affective tone requires further understanding in order to ensure teams in organisations have the best chance to maximise their effectiveness. I will conclude with an overview of my thesis chapters, outlining how my work addresses the gaps identified in the literature.

**Emotions and Emotional Contagion in the Workplace**

The notion of group affective tone as coined by George (1990) has clear links with the associated dyadic research on emotional contagion (Hatfield, Cacioppo, & Rapson, 1992; Hatfield, Rapson, & Cacioppo, 1994). Emotional contagion was defined by Hatfield et al. (1994) as “a tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person’s and, consequently, to converge emotionally” (p. 5).

Research from a developmental perspective shows that a tendency to mimic those around us is evident from a very early age, and also observed in a number of different species (e.g., Haviland & Lelwicka, 1987; Meltzoff, 1988; Meltzoff & Moore, 1977; Reissland, 1998; Termine & Izard, 1988). Emotional contagion has also been found to be pervasive in both experimental research and field research (e.g., Bavelas, Black, Lemery, & Mullett, 1986; Chartrand & Bargh, 1999; Moody, McIntosh, Mann, & Weisss, 2007; Niedenthal, Halberstadt, Margolin, & Innes-Ker, 2000). Accordingly,
researchers have suggested that contagion may provide adaptive advantages from an evolutionary perspective (e.g., to enhance cohesion; Spoor & Kelly, 2004).

In the context of the workplace, emotional contagion has been studied within marketing contexts, to investigate how the positive affect of salespeople has a positive impact on customer attitudes and behaviours (e.g., Tsai, 2001). For example, Tsai and Huang (2002) observed the affect displayed by sales clerks in retail stores during a service encounter, and surveyed customers as they left the store. Employees’ displayed positive affect was positively related to customers’ willingness to return to the store. Furthermore, results showed that this relationship was mediated by customer positive mood, indicating that emotional contagion was occurring from employee to customer, and that this contagion also has the potential to impact on the behavioural intentions of customers. Similar evidence of contagion in sales encounters was found by Pugh (2001) in terms of bank transactions, in which the contagion of positive emotions affected customers’ assessment of service quality, and Barger and Grandey (2006) in food and coffee service transactions, where contagion was related to ratings of both service quality and service satisfaction.

The interpersonal influence of emotions has also been studied within the context of negotiation. Negotiation may occur in a competitive context, where negotiators have conflicting goals which can give rise to heightened emotions (George, Jones, & Gonzalez, 1998). The emotions of one negotiator can shape the emotions of their counterpart, which may give rise to spirals of either positive or negative affectivity (George et al., 1998), affecting the eventual outcome of the negotiation. For instance, Van Kleef, De Dreu, and Manstead (2004) demonstrated the differential effects of discrete emotions on the negotiation process, as a negotiators’ anger elicited more concessions from their partner than happiness. They further showed that the effect on partner’s behaviour was via tracking (i.e., a cognitive process whereby negotiators
consciously used the emotions of their partner to infer their circumstances within the negotiation. Research has shown that the negotiating partner with the highest power is more likely to shape the negotiation process and outcomes via their levels of dispositional positive affectivity than their lower-power counterparts (Anderson & Thompson, 2004). This is consistent with findings that lower-power individuals are more likely to attend to, and be influenced by, the emotions of high-power individuals than vice versa (Anderson, Keltner, & John, 2003; van Kleef et al., 2004).

Research has also focussed on emotional contagion in leadership (e.g., Dasborough & Ashkanasy, 2002; Lewis, 2000). Pescosolido (2002) theorised that a primary role of a leader is to manage the emotions of the team they lead, and modelling functional reactions to affective events to their followers. He also specified a number of factors which could moderate the leaders’ influence on team affect, including the ambiguity of the event (i.e., team members will follow their leader’s reaction if they are unsure of the appropriate reaction); team norms (i.e., team or organisational display norms), and also the leadership style adopted by the leader (i.e. charismatic leaders are suggested to be particularly likely to transmit their emotions to followers).

Research has demonstrated that the affective displays of leaders can influence followers’ affect (e.g., Lewis, 2000), followers’ perceptions of leaders (e.g., Bono & Ilies, 2006; Dasborough & Ashkanasy, 2002), as well as behavioural outcomes including follower performance (e.g., Damen, Van Knippenberg, & Van Knippenberg, 2008; Johnson, 2008; Van Kleef, Homan, Beersma, Van Knippenberg, Van Knippenberg, & Damen, 2009). Charismatic leaders tend to display more positive affect (e.g., Bono & Ilies, 2006) and to produce better outcomes in their followers (e.g., DeGroot, Kiker, & Cross, 2000), and research has implicated emotional contagion in this process. That is, several researchers propose that charismatic leaders display more positive affect, which leads to more positive affect in followers, and, in turn, better
performance outcomes (Cherulnik, Donley, Wiewel, & Miller, 2001; Erez, Misangyi, Johnson, LePine, & Halverson, 2008; Johnson, 2008, 2009). In sum, it has already been extensively demonstrated that affective convergence (i.e., increasing similarity of affect between individuals over time) does occur in the workplace, and has significant effects on employees’ affect, perceptions, behaviour, and performance.

**Emotions and Emotional Contagion in Work Teams**

While a large bulk of research has addressed emotional sharing at the interpersonal level, there has also been a significant focus given to team affect as an essential consideration for understanding how to enhance teamwork (Barsade & Knight, 2015). Organisations are increasingly relying on team-based structures to maximise performance effectiveness (Kozlowski & Ilgen, 2006; Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017). Whilst ideally, teams should work together synergistically to produce superior performance outcomes (Kozlowski & Bell, 2003), the reality is that often teams experience conflict and struggle with team decision-making and the coordination of tasks and processes (Jehn & Mannix, 2001) that are necessary to achieve team outcomes. Accordingly, an area that is gaining increasing attention is the interpersonal effects of emotions within workteams (Barsade & Gibson, 2007, 2012). Teamwork involves the pervasive experience of emotions (Barsade & Gibson, 1998) as it requires team members to frequently interact, resolve differences of opinion, and come to mutual decisions about team tasks. Thus, consideration of how to utilise teams effectively in organisational settings requires substantial attention given to the affective aspects of teams’ interpersonal behaviours, and subsequent effects on team performance (George, 2002).

Research has shown that the emotions of an employee are strongly shaped by their affective environment, including their exposure to, and affective interactions with their fellow team members (Kelly & Barsade, 2001). That is, the emotions (positive or
negative) felt by an employee can spread to their fellow team members, resulting in a team which is composed of affectively similar members. Additionally, research has shown that a team’s collective experience of emotions can have a significant impact on team outcomes, including performance (e.g., Jordan, Lawrence, & Troth, 2006). It is therefore important to understand how and when teams’ affect will converge, as well as variables that will facilitate or impede this process.

Previous research has examined how individual members within a team become more consistent in their affect (i.e., members experience and display similar emotions and moods), and sometimes members become similar enough that the aggregation of members’ affect can meaningfully represent the ‘affective tone’ of the team (George, 1990, 1996a). Bartel and Saavedra (2000) have identified a number of variables which influence the likelihood of affect convergence occurring in teams, including the membership stability of team members, the degree of task and social interdependence between team members, and the team’s mood regulation norms. However, more information is needed to gain a greater understanding of which variables will influence affective convergence in teams, and whether this process may be constrained (i.e., to prevent negative affective convergence) or promoted (i.e., to encourage positive affective convergence), so that organisations can put into place practices which ensure teams are operating efficiently. This need is reflected in the call by Fulmer and Ostroff (2016) for further examination of the structures, processes and team-level attributes that affect the convergence and emergence of team-level properties including group affective tone.

Also of crucial importance is the differential impact of positive and negative affective tone on the dynamics of the team (e.g., conflict experienced within the team, that can derail a team’s attention and take time away from task-work; Jehn, 1995), and on the objective performance of the team (e.g., Hmieleski, Cole, & Baron, 2012).
Research has already demonstrated that teams do develop affective tones in the workplace, and their tones do influence their self-rated and objectively-rated performance (Barsade, 2002; George, 1995; Hmieleski et al., 2012; Kim & Choi, 2012; Tanghe, Wisse, & Van der Flier, 2010). In consideration of the dynamic and complex nature of work teams, the emphasis of the field has moved to understanding the complexities of these effects, including calls for contextual and team compositional considerations which may help buffer against negative consequences (e.g., Mathieu et al., 2017; Waller, Okhuysen, & Saghafian, 2016).

Factors Influencing the Interplay between Group Affective Tone and Various Team Processes and Outcomes

A number of researchers have identified factors which may influence the complex interplay between team-level emotional concepts, including the emotional intelligence of the team (e.g., George, 2002; Kelly & Barsade, 2001), which refers to the ability to perceive emotions accurately, use emotion to facilitate thought, understand emotions, and manage emotions (Mayer & Salovey, 1997). Another potential moderator is the display rules of the team (e.g., Pescosolido, 2002; Walter & Bruch, 2008); that is, mutually understood rules which specify which emotions are appropriate to express within a certain context (Rafaeli & Sutton, 1987). However, these relationships have yet to be tested empirically.

In sum, organisations need a greater understanding of group affective tone, including how it is developed (and to what extent trait affect and emotional intelligence influence convergence processes), the likely consequences of positive and negative affective tone on team outcomes such as team conflict and team performance (and whether these relationships depend on contextual factors such as task type, and/or team composition characteristics such as collective emotional intelligence or emotional
norms; e.g., George & King, 2007). Finally, organisations could benefit from ways to buffer against the harmful effects of team conflict. Therefore, my research questions are:

RQ1. Under what conditions will team members’ positive affect and negative affect converge?
RQ2. What are the consequences of group affective tone on team conflict?
RQ3. What are the consequences of group affective tone on team performance/satisfaction?
RQ4. To what extent does team emotional intelligence influence the interplay of team conflict and team performance?

**Philosophical Foundations of Research**

Research in the social sciences can be classified according to the paradigm upon which it is based (e.g., positivism, postpositivism, critical theory and constructivism). The basic differences between these paradigms can be described in terms of the ontology they draw from (i.e., their stance on the nature of reality, and how it can be examined), the epistemology they embody (which concerns the perspective on how knowledge can be gained), and also the methodology which is appropriate for the paradigm (Guba & Lincoln, 1994). The program of research in my thesis is based on a postpositivist approach to research, the aim of which is “the prediction and control of phenomena, whether physical or human” (Guba & Lincoln, 1994, p. 113). The postpositivist approach draws from the ontology of critical realism, in which “reality is assumed to exist but to be only imperfectly apprehensible because of basically flawed human intellectual mechanisms and the fundamentally intractable nature of phenomena” (Guba & Lincoln, 1994, p. 110). The epistemology of the postpositivist approach is based on objectivism, the view that “things exist as meaningful entities independently of consciousness and experience, that they have truth and meaning residing in them as
objects” (Crotty, 1998, p. 5). The postpositivist approach assumes that through rigorous research (in which the importance of validity, reliability and objectivity are highlighted) knowledge is accumulated in a gradual and continuing process. Experimental and manipulative methodologies are appropriate for this paradigm, which emphasises the falsification of hypotheses (Guba & Lincoln, 1994).

**Theoretical and Practical Contributions of Research**

The aim of my research is to make a theoretical contribution to the literature on affect in teams in a number of ways. First, my research extends past findings on the antecedents of team affective convergence by considering how emotional intelligence and trait affect influence the development of group affective tone. Secondly, my research extends understanding of the consequences of team-level affect by considering the role of emotional intelligence and display rules in the link between positive and negative affective tone and team dynamics and team performance.

My research also may be used to benefit the wider business community. Specifically, drawing on the findings from my program of research, organisations can put into place practices that encourage or prevents affective convergence in teams, depending on when it will be beneficial or detrimental to the employees in the team, the workteam as a whole, as well as the wider organisation. My program of research also has implications for organisational practices including hiring, forming effective teams, as well as the promotion of formal display rules. For example, managers who are aware of the implications of teams’ display rules may decide to implement behavioural policies (e.g., prohibiting the display of inappropriate anger towards co-workers) to prevent dysfunctional consequences that can arise from a hostile affective tone (e.g., employees unwilling to help their fellow team members, and increased employee absences; George, 1990) or to implement policies to enable positive emotions (e.g., a reward system).
Overview of Chapters

My thesis develops, tests, and assesses a proposed program of research to explore affect in teams. In this chapter, I provided a brief background in the area of team-level affect research, and outlined the need for further research in regards to my proposed research questions. In Chapter 2, I will present a review of the literature on team affect (which has previously been published in the *Journal of Organizational Behavior*, see Collins, Lawrence, Troth, & Jordan, 2013). From this review of the literature, a model of the development and consequences of team affect will be developed and described in detail in Chapter 3, along with corresponding propositions regarding the relationships between variables in the model. In Chapter 4, I discuss Study 1, which involved university student teams completing a decision-making task on a hypothetical survival situation. It addressed the possibility of convergence in short-term tasks (RQ1), and the role of self-rated emotional intelligence as a moderator of affective tone and conflict (RQ2); affective tone and performance (RQ3) and conflict and performance (RQ4). Study 2 is presented in Chapter 5, and involved an experimental design to assess the role of trait affective composition in determining the affective tone of a team (RQ1), and how self-rated emotional intelligence and display rules interacted with affective tone in the prediction of performance (RQ3) in student teams performing a creative task. In Chapter 6, I present Study 3, which investigated the convergence of discrete emotions in student teams completing a workplace-based decision-making task (RQ1), and how collective emotional intelligence (via an ability measure) interacts with affective tone in the prediction of conflict and performance (RQ2 & 3) and interacts with conflict in the prediction of performance (RQ4). Chapter 7 contains a general discussion which compares the results across all three studies, and links my findings back to the key research questions listed in this chapter. I then give an overview of contributions to the field in terms of both theory and practice, and conclude with a
discussion of the limitations of my program of research, as well as future research directions.
CHAPTER 2: LITERATURE REVIEW

This chapter has been published as Collins, A. L., Lawrence, S. A., Troth, A. C., & Jordan, P. J. (2013). Group affective tone: A review and future research directions. *Journal of Organizational Behavior, 34*(S1), S43-S62. Minor updates in literature since publication have been included. For ease of reading, I have changed pronouns from “we” and “our” to “I” and “mine”; and changed from American to British spelling.

**Chapter Aims**

In the previous chapter, I outlined the importance of research in the area of group affective tone, and formed broad research questions to guide my research in the area. In this chapter, I present a comprehensive literature review on group affective tone in order to identify gaps that my research can address.

**Introduction**

The rise of team-based structures within organisations has prompted increasing research focused at improving team processes, typically with a view to increasing team performance (e.g., Allen & Hecht, 2004). This expanding team-level focus within the organisational behaviour literature has required researchers to consider the complexities surrounding the conceptualisation and measurement of team-based constructs and phenomena (e.g., team satisfaction; team cohesion; team conflict), including how best to aggregate traditionally individual-level phenomena to the team level (Bliese, 2000; Chan, 1998). Increasing recognition of the role of affect in organisations (e.g., Barsade & Gibson, 2007; Brief & Weiss, 2002) has similarly led to a growing cohort of researchers conceptually and empirically examining affect-related constructs at the team level (e.g., Ashkanasy, 2003; Côté, 2007).

One influential stream within this area is research on group affective tone established by George and her colleagues (e.g., George, 1990, 2002; George & King,
George (1990) provided some of the earliest empirical evidence for group affective tone by demonstrating that individuals in workgroups tend to experience highly similar levels of state affect. Indeed, the similarity was high enough that individuals’ affect could be meaningfully aggregated to the team level (via team averages) and predicted team behaviours such as absenteeism and pro-social behaviour. Using the Attraction-Selection-Attrition (ASA) framework (which suggests that teams/organisations can be composed of employees with highly similar personalities), George and her colleagues argued that high similarity in trait affectivity (i.e., positive affectivity; negative affectivity) of individual team members led to a very high similarity in state affect (i.e., experienced affect) of the team. She called the occurrence of this highly consistent state affect group affective tone.

Since this seminal work, various conceptual models have been formulated to describe different mechanisms by which affect can converge, resulting in group affective tone. Most of these are based on variations of Hackman’s (1987) well known Inputs-Processes-Outputs (IPO) framework (e.g., Kelly & Barsade, 2001), whereby individual input variables are pooled via affect convergence processes and result in a group affective tone. There are also more complex models acknowledging affective feedback loops (e.g., Hareli & Rafaeli, 2008; Walter & Bruch, 2008). Researchers also have considered the influence of group affective tone, as a group state, on more distal team outputs such as team dynamics and performance (e.g., Barsade, 2002; Cole, Walter, & Bruch, 2008; Mason & Griffin, 2003; Sy, Côté, & Saavedra, 2005; Tsai, Chi, Grandey, & Fung, 2012).

It is important to highlight that the focus of this review is on state affective convergence. Furthermore, the scope of this review is limited to affective convergence at the team level although it can occur simultaneously both within and between different levels of an organisation (e.g., dyadic, team, and organisational). To be best placed to
address the important organisational need for strategies to maximise the effectiveness of team-based structures, a comprehensive examination of state affect at the team level seems most pertinent.

My aim in this review is to outline the current state of research for the phenomenon of group affective tone, its development in work teams, and ongoing consequences for team behaviours and performance. The organising framework for this review is the Inputs-Processes-States-Outputs (IPSO) team dynamics model (Marks, Mathieu, & Zaccaro, 2001; Mathieu, Gilson, & Ruddy, 2006). This review will inform the development of my research model in Chapter 3.

**Affect at the Individual and Team Level**

Affect encompasses both mood (i.e., enduring, diffuse and lower intensity feelings) and discrete emotions (i.e., short duration, higher intensity and tied to discrete events; e.g., anger, sadness; Forgas, 1995). Affect also comprises the two separate and independent dimensions of positive and negative affect (Watson et al., 1988). Positive affect reflects the degree to which someone feels enthusiastic, active and alert; while negative affect reflects the extent that a person feels anger, contempt, disgust, fear, or nervousness (Watson et al., 1988). Affect also can be divided into trait and state affect. Trait affect refers to a person’s general tendency to experience a particular affect, typically labeled as negative affectivity (NA) and positive affectivity (PA; George, 1996b). Research shows that NA and PA are relatively stable over time and orthogonal constructs (Watson et al., 1988). On the other hand, state affect refers to a person’s current experience of affect such as anger at a rude colleague. It is important to note that while affective states are influenced by an individual’s affective tendencies (i.e., trait NA and PA), they are also significantly shaped by other people that have an involvement in their lives, such as colleagues (e.g., Cheshin, Rafaeli, & Bos, 2011; Chi, Chung, & Tsai, 2011; George, 1990; Sy et al., 2005; Totterdell, 2000; Totterdell,
Kellett, Briner, & Teuchmann, 1998). In such circumstances, individuals’ affect can converge, that is, individuals may become more similar in their affect.

In particular, George (1990) initially showed individuals within workgroups tend to experience similar affect (reaching a threshold of within-group agreement; Kozlowski & Klein, 2000). George (1990, p. 108) coined this phenomenon as group affective tone and defined it as “consistent or homogeneous affective reactions within a group”.

Group affect was more comprehensively theorised by Kozlowski and Klein (2000, p. 55; see also Kozlowski & Bell, 2003; Mathieu et al., 2017) as an emergent group state, such that the concept “originates in the cognition, affect, behaviours, or other characteristics of individuals, is amplified by their interactions, and manifests as a higher-level, collective phenomenon”. Accordingly, other researchers describe the state affective tone of a group being created and sustained through a combination of inputs and simultaneously operating top-down and bottom-up processes that occur during team interactions (see George, 2002; Kelly & Barsade, 2001). This is consistent with Marks et al.’s (2001) notion of an emergent state within the IPSO team dynamics model.

Group affective tone, as an emergent group-level variable within the broader teams’ literature, is argued to possess highly dynamic properties which potentially change as the interaction patterns among team members change (Cronin, Weingart, & Todorova, 2011).

Models of Group Affective Tone

Researchers have developed various models to explain the development of group affective tone via affective convergence mechanisms. Some models use the well-known IPO model of group effectiveness (Hackman, 1987) as an underpinning framework (e.g., George, 2002; Kelly & Barsade, 2001), whilst others are more complex (e.g., Elfenbein, 2014) and take temporal dynamics into account (e.g., Hareli &
Rafaeli, 2008; Walter & Bruch, 2008). In essence, these models generally acknowledge that a number of different mechanisms involving both inputs (e.g., affective and non-affective team member characteristics, team characteristics, team task characteristics, team work structure, contextual features) and processes (implicit and explicit bottom-up processes, as well as top-down processes) may work separately, or together, to continuously influence affect convergence in teams leading to the development of groups’ positive and negative affective tone as outputs (e.g., Barsade, 2002; Bartel & Saavedra, 2000; George & Brief, 1992). Researchers have also separately considered the influence of group affective tone on more distal team outputs such as team dynamics and performance (e.g., Mason & Griffin, 2003; Sy et al., 2005; Tsai et al., 2012).

In reconciling these two research streams, and for use as a guide to framing this review, I argue that a more appropriate way of viewing the phenomenon of group affective tone is through the use of Marks et al.’s (2001) IPSO team dynamics model. Marks et al. (2001) argue that it is important to distinguish between outputs and emergent states, such that emergent states are “constructs that characterise properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes” (Marks et al., 2001, p. 357). Group affective tone is one construct that is consistently identified as an emergent team-level state (e.g., Kozlowski & Bell, 2003; Kozlowski & Klein, 2000; Waller et al., 2016). By extension, I argue that the use of the IPSO framework in the broader team dynamics literature (e.g., Marks et al., 2001; Mathieu et al., 2006) can be usefully applied to make sense of the group affective tone literature, as it specifically acknowledges the creation and influence of emergent states (such as group affective tone).

Following the IPSO framework, I comprehensively review the prior literature on inputs (affective and non-affective) and affective processes (bottom-up and top-down) that combine to create and sustain group-level affect. I then describe the
conceptualisation and operationalisation of group affective tone as an *emergent state*.

Following this, research that examines the consequences (i.e., *outputs*) of group affective tone will be reviewed. Figure 1 provides my summary of the current literature on group affective tone, based on the IPSO framework.
Figure 1. A summary of the literature on group affective tone using the IPSO framework.
Inputs

There are various affective and non-affective facets of individuals, teams and the situational context that are key factors in the formation of group affective tone. These play a role in theorised affective convergence mechanisms. In keeping with prior IPO models, the inputs I list are variables thought to “affect group-interaction processes (i.e., the interpersonal transactions that take place among members), which in turn affect the output of the group” (Hackman, 1987, p. 316). I review the affective and non-affective factors that are thought to interact with affective processes to influence individual and team experiences of state affect, as well as those that may have a moderating effect on the likelihood or consequences of group affective tone. I draw on prior models including George and Brief (1992), Kelly and Barsade (2001), Kelly and Spoor (2006), and Pescosolido (2002), as well as current research in both dyadic and team settings, to form my list of key input variables.

Affective Factors

**Trait PA and NA.** As noted previously, trait PA and NA have significant influence on an individual’s affective experience. At the individual level, these affective tendencies will impact on how likely it is for team members to experience certain emotions/moods, and their roles in affective influence processes (Watson et al., 1988). At the team level, the composition of trait NA and trait PA members in a team can have a direct effect on the state affective experiences within the team. For example, George (1990) showed that combinations of individual trait NA and trait PA can predict the (state) negative and positive affective tones of real workgroups respectively. This has resulted in researchers controlling for trait affect (NA and PA) in a broad range of research (e.g., George, 1995; Johnson, 2008) where emotional contagion has the potential to influence outcomes. Indeed the effects of trait NA and trait PA may be enhanced by a complementary concept, emotional contagion susceptibility.
**Emotional contagion susceptibility.** Doherty (1997) suggested susceptibility to emotional contagion may be conceived as a stable personality trait and developed a scale that could reliably predict these tendencies over time. Other researchers have since demonstrated that emotional contagion susceptibility increases the likelihood of an individual converging with their leaders' affect (Johnson, 2008) or converging with their team's affect (Ilies, Wagner, & Morgeson, 2007; Totterdell, 2000).

**Emotional intelligence.** The Emotional Intelligence (EI) of individual team members is thought to influence the bottom-up affective convergence processes within a team (e.g., Kelly & Barsade, 2001). While there is ongoing debate over the emotional intelligence construct (see Cherniss, 2010), research at the dyadic level suggests trait EI influences primitive emotional contagion (an affective convergence process described below). For instance, the ability to perceive another's emotions appears to increase one's susceptibility to another's emotion (Papousek, Freudenthaler, & Schulter, 2008). On the other hand, the ability to regulate one's own emotions decreases one's susceptibility to others' emotions (Papousek et al., 2008). Recent work also suggests the emotional intelligence of individual members may be aggregated to the team level to provide a meaningful representation of the emotional intelligence of the team (e.g., Côté, 2007; Troth, Jordan, Lawrence, & Tse, 2012) that, in turn, predicts team attitudes and behaviours. By extension, it could be that a team with high EI may have a greater chance of developing a functional affective tone that appropriately responds to the demands of the team and therefore enhances their achievement of team goals.

**Influential members as sources of affect.** An extension of the impact of trait NA and trait PA, emotional contagion susceptibility, and EI on contagion is the effect of influential team members in a team. Affective influences can be sourced from individual team members or team leaders, which then combine with bottom-up affective convergence processes to produce group affective tone. Barsade and Gibson (1998)
suggest focusing on individual team members with extreme levels of affect (maximum and minimum affect team members) as they may shape team affect by exerting influence on the less extreme members, through processes of primitive emotional contagion. For example, Felps, Mitchell, and Byington (2006) discuss the detrimental impact one highly negative individual (a bad apple) has on the functioning of their team, as their negative emotions may spread from member to member and result in all team members experiencing negative state affect. Barsade (2002) provided support for the idea that a single individual can shape the affect of their entire team. Confederates were trained in particular affective displays and then worked with others on a team task. The affect of the confederate was found to significantly shape the affect of their team (Barsade, 2002). Eisenkraft and Elfenbein (2010) suggest that individuals differ in their trait affective presence, with some individuals characterised by a strong positive affective presence (i.e., their positivity is easily ‘caught’ by others) or strong negative affective presence (i.e., their negativity is likely to transfer to others around them).

Similarly, team leaders have been found to be a key source of affective influence on their team (e.g., Madrid, Trotterdell, Niven, & Barros, 2016). Charismatic leaders’ display of positive affect has been shown to result in increased levels of positive affect in followers and, in turn, better performance outcomes (Cherulnik et al., 2001; Erez et al., 2008; Johnson, 2008, 2009). Furthermore, research by Sy et al. (2005) demonstrated how leaders’ mood shapes group affective tone even when leaders are arbitrarily chosen, and their mood is manipulated.

**Group affective norms.** Group norms are “informal rules that groups adopt to regulate and regularise group members’ behaviour” (Feldman, 1984, p. 47). These norms can develop through explicit statements by leaders/group members, precedents from previous situations, and behaviours expected from members in similar contexts in the past (Feldman, 1984). Group affective norms, like organisational affective norms,
exist to shape appropriate emotional reactions in the workplace (Morrison, 1993). Recent research on display rules shows workgroups develop shared perceptions of what constitutes appropriate emotional displays within their group (Diefendorff, Grandey, Erickson, & Dahling, 2011). Group affective tone researchers (e.g., George, 2002; Kelly & Barsade, 2001) argue that group affective norms also constrain how team members experience affect to the extent that individual team members alter their experience of state affect to conform to the group’s affective tone.

**Exposure to common affective events.** Finally, employees’ mutual exposure to events, tasks, or outcomes may influence the affect they experience (George, 1995, 2002; Westman, 2002). For example, individuals within a team may encounter a positive event relating to their team (e.g., the team’s successful completion of a task), to which team members are likely to respond in an affectively similar way (e.g., all team members excited about the team’s success). I acknowledge this input may have direct and separate effects on team members’ state affect, independent of team processes. For instance, if all members simultaneously learn that they will receive bonuses and have a similar positive reaction (i.e., no interaction is required between members for the occurrence of consistent positive affective tone; e.g., Klep, Wisse, & Van der Flier, 2011). Therefore, I have classified exposure to common affective events as a contextual input that has a static top-down influence on team affect.

**Non-Affective Factors**

Drawing from the broader teams literature (e.g., Tannenbaum, Beard, & Salas, 1992) a number of non-affective factors are commonly put forward as inputs to influence team processes. These include individual team member characteristics (e.g., gender, age, skills), as well as team task characteristics (e.g., task complexity and task type), and team characteristics (e.g., power distribution). Clearly, these inputs have the potential to interact with affective convergence processes and therefore be involved in
the production of group affective tone. For example, at the individual level, it is conceivable that individuals will be differentially susceptible to affective convergence processes based on personal characteristics such as gender (e.g., some research has found females to be more susceptible to primitive emotional contagion than males; Doherty, Orimoto, Singelis, Hatfield, & Hebb, 1995).

Indeed, research on affective tone already highlights the importance of the intergroup context and physical context, technological conditions (Kelly & Barsade, 2001), group size and proximity of group members (George & Brief, 1992), as well as how long the group has been together, and the amount of interaction between group members (Bartel & Saavedra, 2000; George, 1996a). There have been calls for greater attention to the role of non-affective factors in affective convergence (e.g., George & King, 2007), and recent research suggests that team task characteristics may play a significant role in the functionality of group affect (e.g., task type; Klep et al., 2011). Based on this literature, it is clear that non-affective factors can be seen as influencing group state affect and on this basis should be considered in research dealing with state affective tone.

Summary

While researchers have identified a number of inputs at both the team and individual level which have the potential to interact with affective processes to shape the development of a group affective tone, further empirical research is needed to understand the exact roles that these factors play (e.g., as mediators or moderators of the affect convergence processes), as well as the relative importance of these individual and team factors, to enable managers to influence the affective experiences of teams in organisations.
Processes

One useful method for organising affective convergence mechanisms has been to view them as potentially involving either bottom-up or top-down processes (Barsade & Gibson, 1998, 2012; Kelly & Barsade, 2001). The bottom-up perspective emphasises how the individuals’ affective inputs combine with bottom-up affective processes to shape their group’s collective experience of affect (e.g., individuals’ experienced emotions transferred via primitive emotional contagion) both implicitly (e.g., behavioural entrainment) and explicitly (e.g., empathy). In contrast, the top-down approach looks at the substantial effects that the group or the context can have on shaping an individual’s experience of affect in line with their group’s affective tone, independently or in combination with “bottom-up” affective processes (e.g., group norms can shape individual’s state affect via socialisation processes). In a more recent approach, Klep et al. (2011; Klep, Wisse, & Van der Flier, 2013) distinguishes between the dynamic path to similarity in state affect (inputs and processes that involve the interactive sharing of affect between all group members) and the static path (trait or contextual inputs that may be transmitted through “top-down” processes which cause group members to experience similar affect). Drawing on these prior classification schemes, I outline the processes of affect convergence in more detail below.

It is important to note that researchers on group affective tone generally theorise how one or more affective processes are assumed to have operated to produce a consistent affective tone, but these processes are rarely measured or directly examined empirically in organisational research (e.g., Cole et al., 2008, for an exception see Klep et al., 2011).

Bottom-up Processes

Before reviewing the main affective convergence processes within teams, it is important to highlight how much of our knowledge regarding these mechanisms, such
as primitive emotional contagion (Hatfield et al., 1994) and behavioural entrainment (Kelly, 1988) is derived from dyadic research conducted within controlled laboratory settings. This has given researchers the ability to examine the effects of specific affective convergence processes. These mechanisms (e.g., primitive contagion, entrainment, empathy) have since been adopted to explain affect convergence in teams in various ways. For instance, researchers argue it can occur through a continuous series of dyadic exchanges (i.e., spread from person to person as each interact with team members; Barsade, 2002) or via a particularly influential team member who drives the convergence processes within a team (salient member such as a leader, e.g., Sy et al., 2005). Group convergence might also occur indirectly through spillover (i.e., simply witnessing affective interactions between others can be enough to influence someone’s affect; Felps et al., 2006). Group affect researchers frequently make assumptions about how these processes demonstrated in dyadic research will be applicable to the group context.

**Primitive emotional contagion.** One mechanism frequently considered to account for affect convergence is primitive emotional contagion. This is defined as “a tendency to automatically mimic and synchronise expressions, vocalizations, postures, and movements with those of another person’s and, consequently, to converge emotionally” (Hatfield et al., 1994, p. 5). This has been extended to include the transfer of mood states (Neumann & Strack, 2000). The mechanism by which both primitive emotional and mood contagion operate is termed the facial feedback hypothesis (e.g., Buck, 1980), which contends that people spontaneously and unconsciously mimic the facial expressions of people around them. Displaying emotion then leads individuals to experience the emotion via an afferent feedback process (Adelmann & Zajonc, 1989; Chartrand & Bargh, 1999; Zajonc, 1985). A closely linked process considered to influence affective convergence is behavioural entrainment.
Behavioural entrainment. Behavioural entrainment is an implicit/unconscious process, closely related to primitive emotional contagion, which has also been put forward as an explanatory process to account for affect convergence between individuals and within groups (e.g., Kelly & Barsade, 2001). Kelly’s (1988) model of behavioural entrainment suggests that just as individuals’ behaviour can become entrained (i.e., synchronised) with external processes (e.g., adjusting sleeping patterns to correspond with circadian rhythms), an individual’s behaviour can automatically become entrained with another individual that they are exposed to. This is evident when dyads unconsciously mimic each other’s movements (e.g., Chartrand & Bargh, 1999) or synchronise their speech patterns (e.g., Condon & Ogston, 1966; Giles & Smith, 1979). In line with the similarity-attraction paradigm, the perception of similarity separately induces a positive affective response from both individuals. For example, if two individuals interact with each other over time, behaviours may become entrained, such as certain gestures or mannerisms. Research has shown that this entrainment of behaviours (i.e., displaying the same gestures/mannerisms) is linked with positive sentiments, including increased liking and affiliation (Lakin & Chartrand, 2003). Although the outcome of behavioural entrainment is the same as primitive emotional contagion (i.e., individuals experiencing similar affect), the mechanism is quite different, as it is the perceived synchrony with another individual that can induce a positive response, rather than a transfer of a positive affective state from one individual to another (as in primitive emotional contagion). As such, I argue that a group’s affective tone derived via behavioural entrainment (rather than primitive emotional contagion) may have different consequences for the group (e.g., a weaker link from positive affective tone to group benefits). Empirical research has yet to directly test the separate effects of these mechanisms.
Empathy. Empathy is an explicit/conscious process through which affect may converge between individuals. Empathy is defined as "(1) an affective state, (2) which is isomorphic to another person’s affective state, (3) which is elicited by observing or imagining another person’s affective state, and (4) when we know that the other person’s affective state is the source of our own affective state" (De Vignemont & Singer, 2006, p. 435). Definitions consistently emphasise that empathy is a conscious process involving a cognitive evaluation of another person/situation (Decety & Jackson, 2004), that can lead to a convergence in affect. Empathy is differentiated from primitive contagion and behavioural entrainment as it is explicit and involves a specific cognitive evaluation. However, as both primitive contagion and behavioural entrainment are more implicit/unconscious methods of convergence (and as such are harder to identify/control for in research settings), empathy is rarely tested in isolation of these factors.

Affective interpersonal influence. Finally, affective interpersonal influence can be specifically differentiated from the above processes which can come about naturally through group members’ interactions. This is because it is an explicit/conscious process by which individuals within a group intentionally try to elicit certain affective responses from others, and by doing so, can ultimately influence the affective tone of the group (George, 2002; Kelly & Barsade, 2001). Austin, Farrelly, Black, and Moore (2007), for instance, found that individuals can intentionally manipulate others’ emotions to achieve their own goals. Likewise, researchers have argued that a leader with high levels of EI could deliberately use these skills to influence group affective states (c.f., Côté & Hideg, 2011).

Top-Down Processes

Attraction-Selection-Attrition. The attraction-selection-attrition (ASA) model (Schneider, 1987) proposes that organisations may be composed of people with similar
personality traits because (1) people are attracted to, and will actively seek out, similar others; (2) organisational recruitment processes are designed to select people with certain attributes, and; (3) people are more likely to leave if obliged to work with dissimilar others. These processes result in organisations composed of people with comparable personality and behavioural patterns. This theory has been extended to the group level, suggesting that groups may be similar in their trait affect via ASA processes, leading to consistency in group state affect (e.g., George, 1990; Kozlowski & Ilgen, 2006). Applying Klep et al.'s (2011) framework, ASA has been classified as a top-down and static approach to group-level affect. Although it does not involve convergence, it demonstrates how external constraints (e.g., hiring practices, self-selection to groups) may result in consistent group affective tone. While not being specifically affective in nature, as a process it can draw in affective inputs (e.g., team compositional trait affect) and result in affective tone.

Socialisation. The socialisation of new group members to cultural symbols, values, practices and norms, can also lead to consistency in group affective reactions (e.g., George, 1990; Totterdell, Wall, Holman, Epitropaki, & Diamond, 2004). Socialisation is an active process of information transfer and organisations can deliberately use inputs (e.g., organisational/group affective norms and specific emotional display rules) to continuously constrain the affective experience of individuals in the group. In this way an organisationally-appropriate affective tone can be imposed on work teams. New and existing employees who are not affectively aligned with this tone are encouraged through socialisation processes to shift their state affect to converge with that of the group affective tone. Socialisation is classified as a static, top-down path to consistency in group state affect.

Summary
My preceding review focused on highlighting processes that consistently appeared across the literature. However, it is important to note that researchers on group affective tone generally theorise how one or more affective processes are assumed to have operated to produce a consistent affective tone, but these processes are rarely measured or directly examined empirically in organisational research (e.g., Cole et al., 2008, for an exception see Klep et al., 2011). It is also important to point out that not all affective convergence mechanisms will be applicable to every organisational context. For example, having randomly assigned teams will minimise the impact of top-down ASA processes on group affective tone, while the development of a group based on specific selection criteria may enhance these processes.

It should also be noted that affective convergence processes (both bottom-up and top-down) vary in the extent to which they are deliberate/conscious. An affective tone can be deliberately created via ASA processes (e.g., a manager hiring group members who are all highly positive) and maintained by a group leader via affective interpersonal influence (e.g., the leader modelling and encouraging positivity). Alternatively, ASA processes could also operate in a non-intentional fashion, such as when group members seek out similar others (e.g., a high trait PA individual joining a group of similarly high PA individuals), which may lead to a consistent positive state affective tone.

**Group Affective Tone as an Emergent State**

Following the IPSO structure (Marks et al., 2001) and my earlier justification of group affect as an emergent state, the culmination of these convergence processes is the occurrence of a higher-level, collective concept known as group affective tone, defined as “consistent or homogeneous affective reactions within a group” (George, 1990, p. 108). According to Chan’s (1998) typology, group affective tone is a direct consensus group construct, in which “the meaning of the higher level construct is in the consensus
among lower level units” (p. 236). This is reflected in the measurement of group affective tone.

Aggregation of individuals' state positive affect or negative affect is conditional on group members' affect meeting requirements for high within-group similarity (i.e., $r_{wg}$ values equal to or exceeding .70; James, Demaree, & Wolf, 1993; see also George, 1990). More stringent recommendations for justifying aggregation additionally require that researchers examine both ICC(1) and ICC(2) (Bliese, 2000). In terms of ICC(1), which indicates how much of the total variance is accounted for by group membership, common practice is that aggregation is supported if the $F$-test is significant (Klein & Kozlowski, 2000). ICC(2) additionally estimates the reliability of the group means (i.e., an ICC(2) equal to or greater than .70 is considered appropriate; Bartko, 1976; Klein & Kozlowski, 2000). The majority of research on group affective tone reports these statistics as justification for aggregating to the group level (e.g., Cole et al., 2008; Mason & Griffin, 2003).

Early research on affective tone advocated that groups which do not develop an affective tone (i.e., groups which do not reach the accepted cut-off points to justify aggregation) should be dropped from analyses (e.g., George, 1990, 1995). However, more recent guides to aggregation (e.g., Klein & Kozlowski, 2000) allow for less strict requirements, such as assessing whether the sample as a whole (via mean/median of group similarity measures) are within acceptable levels (e.g., Cole et al., 2008; Tsai et al., 2012). If these statistical requirements are met, group constructs can then be legitimately formed via group averages, and groups can be examined in terms of their positive affective tone (on a continuum from more positive to less positive) and their negative affective tone (on a continuum from more negative to less negative). In sum, researchers are generally encouraged to examine a number of different statistical measures (including $r_{wg}$, ICC(1) and ICC(2)) to guide their decision as to whether, on
the whole, aggregation is appropriate, based on both theoretical and practical
considerations (Bliese, 2000; Klein & Kozlowski, 2000; see also LeBreton & Senter,
2008 for further discussion of these issues). In the following sections, I will address the
research on consequences of group affective tone.

Outputs

Consequences of Group Affective Tone

Research has demonstrated that group affective tone can predict a number of
group outcomes, including group dynamics, group member behaviours and group
performance. In line with Watson et al. (1988), positive and negative affective tone (and
their effects on group outcomes) have generally been assessed separately. Early theories
of group affective tone theorised that a higher positive affective tone would provide a
pleasant and enjoyable work environment, while high negative affective tone would
provide a highly unpleasant work environment (George, 1990, 1996a). However,
research which considers the role of context has demonstrated that these relationships
are more complex.

In terms of groups’ dynamics, higher positive affective tone has been linked to
better group coordination (Sy et al., 2005) as well as greater cooperation and less group
conflict (Barsade, 2002). Higher positive affective tone is predictive of fewer absences
by group members (George, 1990; Mason & Griffin, 2003), and greater willingness to
engage in organisational citizenship behaviours (Tanghe et al., 2010). Groups’ positive
affective tone has also been linked to groups’ performance, such that greater positive
affective tone is predictive of better group performance (both self-rated; Barsade, 2002;
Tanghe et al., 2010; supervisor-rated; George, 1995; Kim & Choi, 2012; and objective
performance; Hmielecki et al., 2012).

On the other hand, higher negative affective tone has been linked to greater
experience of different types of conflict (e.g., Gamero, González-Romá, & Peiró, 2008;
Sessa, 1996), as well as a decrease in prosocial behaviours (George, 1990). There is less
evidence of the detrimental effects of negative affective tone on performance. Cole et al.
(2008) studied work teams in the manufacturing industry, predicting that negative
affective tone would distract members from task completion. In line with this, greater
negative affective tone was associated with decreased team performance (as rated by
supervisors), and this effect was moderated by teams’ nonverbal negative expressivity.
That is, negative affective tone only had detrimental effects on team performance when
the team was free or open in their nonverbal expression of negative affect.

**Task/Team Characteristics as Moderators of the Group Affective Tone –

Outcomes Link**

Theoretical arguments advanced on group affective tone generally assume that
higher positive affective tone will be more beneficial than lower positive affective tone
(e.g., Walter & Bruch, 2008) and that greater negative affective tone will produce worse
outcomes in groups than lower negative affective tone (e.g., Cole et al., 2008).
Emerging theories and research suggest that the impact of group affective tone on group
outcomes is more complex than presented above, such that team task characteristics
may play a moderating role in these relationships.

The completion of tasks requiring creativity is a common example of when a
high positive affective tone may be detrimental to performance (e.g., Kelly & Spoor,
2006). Research by Tsai et al. (2012) supports this idea; demonstrating high positive
affective tone can be detrimental to team performance in a creative task when there is a
high amount of trust in the team. That is, teams with a highly positive affective tone,
and a large amount of trust between team members were less likely to express differing
opinions and thoroughly explore different options, leading to less creativity. Clearly,
under some conditions, a positive affective tone that is too highly positive may be
detrimental to group’s creative performance. On the other hand, Klep et al. (2013)
explicitly examined the importance of task type as a moderator of the negative affective tone-group performance relationship, finding that, consistent with theory, negative affective tone could be detrimental to team performance in tasks requiring creativity, however, can be beneficial to performance in an analytic task.

Likewise, initial research on trait NA in groups has suggested that groups composed of members high in trait NA can perform better in tasks in which information is distributed among members (but not when information was fully shared between members) than groups with members lower in trait NA (Kooij-de Bode, van Knippenberg, & van Ginkel, 2010). While this study examined group composition in terms of trait affect rather than group affective tone, it provides further support to the idea that the nature of affective tone and performance may be dependent on moderators such as task type and this needs to be addressed and tested directly.

In summary, research on the separate effects of positive affective tone and negative affective tone have linked them to various group outcomes, including the dynamics and behaviours of the group, and the group’s performance. Furthermore, moderators of these relationships have been found, which suggest that group affective tone can sometimes work in counterintuitive ways.

**Conclusions**

In this review, I examined the phenomenon of state affective tone in groups. Adopting an IPSO framework, I examined the current research on the individual- and group-level inputs and the processes that allow for convergence to group affective tone, the conceptualisation and operationalisation of group affective tone as an emergent state, and the group outcomes of affective tone. This review has also highlighted some areas requiring further investigation, including the role of collective EI in teams; the impact of display rules; and some counterintuitive results demonstrating the importance of the nature of the tasks being completed. In the following chapter, I develop and
justify my research model to be tested, with the goal of extending knowledge in this area of research.
CHAPTER 3: RESEARCH MODEL DEVELOPMENT

Chapter Aims

In Chapter 1, I introduced the concept of affective convergence in teams, group affective tone, and explained its importance in organisations. I also highlighted gaps in the literature which inform the broad research questions I intend to address in my program of research. In Chapter 2, I reviewed the literature on group affective tone to gain a thorough understanding of the state of research in this area. Guided by those research questions, and in consideration of past theorising and empirical research, I now develop a research model which I justify in this chapter, and test across three studies in Chapters 4, 5, and 6. To reiterate, the overall aim of my research is to investigate the formation and consequences of positive and negative affective tone in teams, and to explore moderating variables that impact on those relationships.

In developing my research model, I draw upon a number of existing frameworks and theories. Chiefly, I use the IPSO (input-process-state-output) model (Marks et al., 2001) as a broad framework for my research on team affect. As explained fully in Chapter 2, the IPSO is a model of team dynamics which describes how various team inputs drive the processes of the team, which contribute to an emergent state which affects various team outcomes. In line with the IPSO model of team effectiveness (Marks et al., 2001), my conceptual model (see Figure 2 below) and corresponding propositions consider the development of group affective tone (P1) as an emergent state and the interplay of affective input variables of the team (trait affect and emotional intelligence; P2). I use affect-as-information theory (Schwarz & Clore, 2003) and the emotions-as-social-information model (EASI; Van Kleef, 2009) to guide my propositions regarding the influence of group affective tone on team dynamics (conflict; P3, P4) and outcomes (team performance and team satisfaction; P4). Finally, my
expectations regarding the impact of team conflict on team outcomes are based on Jehn and Bendersky’s (2003) contingency theory of conflict (P5). Affect-as-information theory (Schwartz & Clore, 2003) argues that an individual’s focus of attention results in associated changes in affective influences. In other words, we use our feelings to guide the information we choose to be informed by when making behavioural decisions. This framework is further enhanced in Van Kleef’s (2016) Emotions as Social Information (EASI) framework.

Figure 1. Research model of the development and consequences of affective tone.

While some researchers use ‘group’ and ‘team’ interchangeably, in my research I am using Salas et al.’s (2000) definition of a team, which states they are “a set of two or more individuals interacting adaptively, interdependently and dynamically towards a common and valued goal” (p. 341). However, I also use the common terminology of ‘group affective tone’ as coined by George (1990) which is widely used in the research area to specify a consistent affective state in a group or team (e.g., Cole et al., 2008; Peralta et al., 2015; Tsai et al., 2012).
Propositions

Convergence of Affect and Emotions

As demonstrated by the literature review in the previous chapter, researchers in the area of group affective tone have drawn upon abundant dyadic research which shows that affect is contagious and converges over time. As discussed in Chapter 2, the mechanisms of affect convergence within groups are largely divided according to Barsade and Gibson’s (1998) classification of bottom-up (individuals’ affective inputs combine to shape their group’s collective experience of affect) and top-down (the impact that the group or the context can have on shaping or constraining individuals’ experience of affect). As I earlier explained, processes of affect convergence include emotional contagion (e.g., Hatfield et al., 1994), behavioural entrainment (Kelly, 1988), empathy (De Vignemont & Singer, 2006), ASA processes (George, 1990; Schneider, 1987), socialisation to group affective norms (Morrison, 1993), as well as exposure to common affective events (Westman, 2002). These processes (which vary from largely unconscious to largely deliberate) have all been shown to contribute to affective convergence in teams, and the development of a consistent group affective tone. Studies on affective convergence at the dyadic level suggest that these processes of convergence are quite robust (e.g., Laird et al., 1994; Sonnby-Borgström, Jönsson, & Svensson, 2008) and can occur immediately and automatically (Hess & Blairy, 2001).

As mentioned previously, the culmination of these convergence processes is the occurrence of a higher-level, collective concept known as group affective tone. Evidence of group affective tone has been found in a wide variety of contexts, including organisational teams which have worked together and interacted over a substantial period of time (e.g., Cole et al., 2008; George, 1990); as well as student teams formed by researchers for the purpose of a single project (e.g., Sy et al., 2005).
There have been calls for more attention to discrete emotional states at the team level (e.g., Barsade & Gibson, 2012; Kelly & Barsade, 2001; Menges & Kilduff, 2015), especially given that at the individual level, specific emotional states have been found to have different antecedents (e.g., Fritz, Sonnentag, Spector, & McInroe, 2010) and differentially predict workplace behaviours (e.g., Lee & Allen, 2002). Dyadic research supports the idea that emotional contagion can also occur with specific emotional states, including fear, anger and sadness (e.g., Bourgeois & Hess, 2008; Lishner, Cooter, & Zald, 2008; Moody et al., 2007; Van der Schalk et al., 2011; Varcin, Bailey, & Henry, 2010). Likewise, the positive emotion of happiness has consistently been found to be contagious in dyadic settings (e.g., Halberstadt, Winkielman, Niedenthal, & Dalle, 2009; Hess & Bourgeois, 2010; Korb, Grandjean, & Scherer, 2010; Van der Schalk et al., 2011; Varcin et al., 2010).

Limited research has demonstrated that over time, teams become more similar in their experience of emotions such as anger and gratitude (Delvaux, Vanbeselaere, & Mesquita, 2015), and branches of certain organisations were found to have highly consistent fearful tones (Ashkanasy & Nicholson, 2003). If these emotions do converge independently within a team, the different emotional tones of a team which generally fall under the same affective umbrella (e.g., anger and fear both typically subsumed into negative affect), will likely have different impacts on the way the team functions. For example, anger can tend to be linked with approach behaviours, whereas fear can have a more inhibiting effect on behaviour (Adams, Ambady, Macrae, & Kleck, 2006). In a team task setting, each discrete emotion may have differential effects in terms of conflict experienced, and overall performance as a team (Barsade & Gibson, 2012), making this an important area to address.

Considering the extensive evidence regarding the development of group negative affective tone and positive affective tone, I propose that:
Proposition 1. Teams will converge in affect and discrete emotions.

Trait Affect of Team Members and Collective EI as Input Variables to Affective Tone

**Trait affective composition.** In developing my next proposition I address how some affective inputs of the team are likely to interact with affective processes to shape the affective tone of a team, in line with the IPSO model. As explained in Chapter 2, research to extend our understanding of the most common or strongest mechanisms driving affective convergence in teams has been extremely limited. Again, the vast majority of empirical research in teams does not directly test the strength or likelihood of affective convergence processes occurring (for an exception see Klep et al., 2011). Measuring convergence processes in real teams, where members communicate with each other dynamically using both verbal and nonverbal channels, is difficult. Both recent empirical work (e.g., Kalish, Luria, & Westman, 2009; Klep et al., 2011) and theoretical work (e.g., Cronin et al., 2011) emphasise the importance of untangling and differentiating the various sources of influence on team concepts such as group affective tone.

Group affective tone is seen as an emergent construct where the state affective tone of a group/team is created and sustained through a combination of inputs and simultaneously operating top-down and bottom-up processes that occur during team interactions (see George, 2002; Kelly & Barsade, 2001). With reference to the broader topic of team dynamics, Cronin et al. (2011, p. 574) proposed that there are various “possible ways in which group phenomena can exist in relation to the synthesis processes that take place among the individual group members”. I argue Cronin et al.’s (2011) ideas are directly relevant to, and consistent with, existing theory about
particular affective convergence mechanisms. In line with Kozlowski and Klein's (2000) definition, emergent constructs are proposed to involve "a process where a higher-level phenomenon comes into existence based on interaction among the lower-level elements" (Cronin et al., 2011, p. 574). Thus, group affective tone as an emergent construct primarily involves bottom-up/dynamic processes (e.g., primitive emotional contagion) which synthesise/combine individual affective and non-affective inputs.

On the other hand, cumulative constructs are team-level properties which arise from stable, pre-existing individual properties, such that no interaction is required to produce the team-level construct (Cronin et al., 2011). Group affective tone arising from the ASA process (in combination with compositional trait affect as an input) is an example of affective tone as a cumulative construct (see Kozlowski & Ilgen, 2006). In that case, affective tone emerges because the team is entirely composed of people with similar affective tendencies (e.g., management selecting a team of high trait PA employees), and thus the affective tone (measured via state affect) of their team is consistent due to stable properties of the individuals. Unlike emergence, no interaction or synthesis of individual inputs is required.

Cronin et al. (2011) stress the importance of properly classifying team dynamic profiles in this way to guide theory and research (including the operationalisation of constructs). This is especially critical to management practices, as some organisations place a high value on positivity in their teams, therefore it is important for them to understand to what extent more static (e.g., ASA via similar trait NA and PA) or more dynamic processes (e.g., affective interpersonal influence, primitive emotional contagion) drive the affective tone of a team.

As specified in Chapter 2, the trait NA and PA composition of a team have been identified as key inputs to group affective tone. George's (1990) seminal research on group affective tone was among the first to show that the average trait NA of a team
predicted the negative affective tone (as an experienced state) and likewise for the average trait PA of teams; and the author attributed this to ASA effects. Since that work there has been relatively little attention paid to the relative importance of a team’s trait NA and PA in determining the affective tone of a team. However, the more dynamic processes of convergence also needs to be considered, as primitive emotional contagion, empathy and affective interpersonal influence will also likely be operating in teams to simultaneously influence the groups’ affective tone, perhaps beyond their average affective composition. I suggest that in certain contexts, the trait NA and trait PA makeup of the team will be less predictive of their negative and positive affective tones than others, and propose emotional intelligence as a factor which influences this (see Figure 2).

**Emotional intelligence.** The role of collective EI on team affective processes was briefly introduced in the literature review in Chapter 2. Before I go into the specific arguments around the impact collective EI will have on various team-level constructs and processes, I define and give more information on EI as a construct, its measurement and validity at both the individual and team levels.

One of the first articles to address this issue was by Salovey and Mayer (1990) who regarded EI as a type of intelligence, and initially defined it as “the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (p. 189). Later, Mayer and Salovey (1997) presented the most widely used ability model of emotional intelligence, in which four branches of abilities are listed (ranging from more basic to more sophisticated abilities). The first branch concerns perceiving emotions, and includes the ability to recognise the emotions of oneself and of others; being able to accurately express felt emotions and identify accurate vs. false emotional expressions in others. The next branch details the ability to
use emotions to facilitate thinking. When people are high in this ability, emotions are used to guide thinking and to enable accurate memory and judgment; and changes in mood states can help prompt changes in ways of thinking and consideration of alternative viewpoints in problem-solving. Understanding emotions (the third branch) concerns the ability to discriminate between and label subtle differences between emotions; as well as recognise when emotional complexities such as experiencing simultaneous emotions; understand the meanings conveyed by emotions, and predict the likely course of emotions. Finally, the last branch (managing emotions) involves the ability to remain open to feelings (whether negative or positive), detach from emotions that are not functional for the context, assess how practical emotions are given context, and manage emotions in oneself and others (without extremes of repression or exaggeration; Mayer & Salovey, 1997).

Ashkanasy and Daus (2005) identified three distinct streams of emotional intelligence research. Stream 1 researchers adhere to the ability model of EI (Mayer & Salovey, 1997), and use an ability instrument for measurement. The most popular of the abilities measures is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002). This measure assesses each of the four branches of the model via a series of tasks with 'correct' answers determined by expert scoring (e.g., perceiving emotion is assessed via the accurate recognition of emotion in photographs; managing emotion is assessed via choosing the correct emotional response to various emotional scenarios; Salovey, Mayer, Caruso, & Lopes, 2001). Another recent abilities measure of the Mayer and Salovey (1997) model was developed by MacCann and Roberts (2008a, 2008b). They used a Situational Judgment Test (i.e., present participants with emotion-laden scenarios, and ask them to choose best responses regarding understanding and management). Answers are assessed against ‘expert scores’ to determine correct responses to the scenarios.
Stream 2 researchers also support the Mayer and Salovey (1997) model, but use measurement instruments which are self-report or peer-report. For example, Wong and Law (2002) use a self-report measure which separately assesses self-emotion appraisal, other-emotion appraisal, use of emotion, and regulation of emotion. Another self-report measure based on the abilities model is the Workplace Emotional Intelligence Profile (Jordan, Ashkanasy, Härtel, & Hooper, 2002; Jordan & Lawrence, 2009). This measure assesses awareness of emotions (both own and others) and management of emotions (own and others) but is specifically tailored to a team-based context (thus items refer to perceptions and actions that occur within the respondent's current work team).

Finally, Ashkanasy and Daus (2005) identify a third stream of research, in which researchers use mixed models of emotional intelligence (i.e., can encompass emotional competencies), and can be assessed via multi-rater measures (e.g., Emotional Competence Inventory, Boyatzis, Goleman, & Rhee, 2000). Cherniss (2010) disputes the inclusion of these models which primarily represent emotional competencies as an accurate representation of a type of intelligence. A meta-analysis by O’Boyle, Humphrey, Pollack, Hawver, and Story (2011) found that in all three streams, emotional intelligence was predictive of job performance. They emphasise that all three streams have benefits and downsides; for example, Stream 1 provides an objective measure which will help avoid social desirability effects, whereas Streams 2 and 3 are subject to those effects. Yet Streams 2 and 3 provide greater incremental validity over and above cognitive ability than Stream 1 measurement. In my research I use the Mayer and Salovey (1997) abilities model of emotional intelligence, and utilise measures from both stream 1 (e.g., abilities tests) and stream 2 (self-report tests), to compensate for their limitations and test replication under different methods of measurement.

Additionally, as my research concerns the effect of emotional intelligence at the team level, I now detail the different ways of aggregation to gain an accurate and
meaningful representation of the collective emotional intelligence of a team. As in all
types of aggregation, researchers have a variety of ways in which to aggregate
individually measured variables at the team level, and each will have merits depending
on the nature of the construct and contextual considerations (e.g., aggregation via mean,
variance, minimum score or maximum score; Kozlowski & Klein, 2000). Unlike the
case of group affective tone (which requires direct consensus within a group to be
meaningful at the group level; Klein & Kozlowski, 2000), emotional intelligence is
generally aggregated via an additive model (Chan, 1998), in which variance between
team members is not a factor. This conceptualisation is based on the view that
emotional intelligence is a “resource that team members draw on and that members of
the team can pool their abilities to share and compensate for one another” (Elfenbein,
2006, p. 170). Thus, an average of team members’ emotional intelligence will represent
the team’s collective emotional intelligence. Prior research suggests this method
provides a good indication of a team’s EI, and can predict team attitudes and behaviours
(e.g., Troth et al., 2012).

Collective emotional intelligence as a moderator of trait affect and affective
tone. I explained above the role that trait affect has in determining the state
(experienced) emotions of individuals, and consequently how the average in team
members’ trait affect plays a role in determining the state (experienced) emotions of the
team which, in turn, make up the group affective tone (George, 1990). However, there
are specific and dynamic affective processes which are occurring in real time in
working teams, and which also contribute to the development of group affective tone.
As mentioned above, one feature that has been identified as essential for affective
sharing in a team context is emotional intelligence. I argue that for emotions to be
dynamically shared in a team context via emotional contagion, empathy, and affective
interpersonal influence and socialisation (which all work to drive the team towards a
specific affective tone); the team members, and thus the team as a whole, need a certain level of emotional intelligence. When there is lower emotional intelligence in a team, these affective processes are less likely to be occurring at a strong level, and thus the affective tone will be driven by more stable affective tendencies/dispositions (trait NA and PA) to a greater extent. Emotional intelligence involves accurate perception of emotion, which is a key prerequisite to many processes of emotional contagion. Hatfield et al. (1992) put forward the theory that processes of contagion are more likely to occur when the receiver of emotion has good emotional perception (e.g., if they are able to pick up on subtle anger cues, they are more likely to respond with anger), whereas a person with less skill at perceiving emotion may continue on, happily unaware. Research by Papousek et al. (2008) has confirmed this in a laboratory setting, as people with higher skill in recognising others’ emotions are more susceptible to ‘catching’ emotion.

Another key emotional intelligence facet is managing your own and others’ emotions. Emotionally intelligent people are able to ‘steer’ the emotions of others around them; for example, emotionally intelligent leaders are able to encourage subordinates when they are feeling low (George, 2000). In a dynamic and interactive team setting, there are many avenues of direct and indirect emotional influence, which may contribute to the level of affective tone, over and above the prediction that can be made by looking at the average of team members’ dispositional affective tendencies. As shown in Figure 2, I propose that collective emotional intelligence (in terms of emotional perception and emotional management) moderates the influence of trait affective composition on a team’s eventual affective tone. When a team has a high collective level of emotional intelligence, it is more likely that processes of contagion occur, and dynamic emotional exchanges take place; lessening the influence of affective tendencies on affective tone. Conversely, when a team has lower emotional intelligence
(e.g., is not aware of the shifting emotional states of a team member, and thus isn't influenced by it), trait affective tendencies (i.e., default affective states) more strongly drive the affective tone which the team develops over time. I propose that emotional intelligence is a moderator of the impact of trait affect onto tone, rather than a direct input to tone, largely because it is increasingly acknowledged that emotional intelligence allows people to recognise when emotions are functional based on context, which may sometimes necessitate less positive emotions (e.g., Kilduff, Chiaburu, & Menges, 2010). Therefore, I include it as the moderator of an input, and take a more nuanced view than suggesting that an emotionally intelligent team will have a highly positive affective tone and very low negative affective tone (which may be too simplistic to account for the needs of a team in an organisational context; where tight deadlines and the presence of competition may signify more complex emotional needs).

To summarise, the value of teams’ trait affect as an input predicting the affective tone of a team will be decreased when teams have high emotional perception and management.

Proposition 2. Emotional intelligence will moderate the positive relationship between teams’ average trait affect and affective tone, such that the relationship will be stronger when teams have lower emotional intelligence.

Consequences of Group Affective Tone

Team conflict. Conflict is a common and oftentimes essential aspect of interaction within teams (Chang, 2017). Jehn (Jehn, 1995; Shah & Jehn, 1993) created a typology of intragroup conflict, which distinguished between relationship conflict (i.e., tension and animosity between team members), and task conflict (disagreements about the task, including differing opinions and approaches; Jehn, 1995). Relationship conflict is generally seen as the more ‘emotional’ type of conflict, as it can contribute to negative emotionality in the group (such as decreased trust and respect; Jehn, Greer,
Levine, & Szulanski, 2008; and decreased team satisfaction; De Dreu & Weingart, 2003), while task conflict has been conceptualised as more cognitive in nature (Yang & Mossholder, 2004), although I acknowledge that both task and relationship conflict may involve emotional aspects (Jehn & Bendersky, 2003).

Previous research indicates that a highly negative affective tone is associated with increased relationship conflicts within the team. Gamero et al. (2008) found that the higher the collective tension in a team, the higher the reports of relationship conflict, and likewise Sessa (1996) identified that a highly negative affective tone was linked with people-oriented conflict (mapping onto Jehn’s relationship conflict), but not to task-oriented conflict. These findings fit within common theories on negative affective tone, which emphasise the detrimental impact it can have on teams’ dynamics such as coordination and cohesion (George, 1990; Sy et al., 2005).

While I agree with past research on the generally detrimental impact of negative affective tone on relationship conflict within a team, I argue that collective emotional intelligence mitigates this link. Emotional intelligence involves focus on both the self (i.e., being aware of your own emotions, and further being able to manage your own emotions) and on others (i.e., being able to recognise and manage the emotions of people around you, such as fellow team members; Jordan & Lawrence, 2009). Individual-level research suggests that individuals with higher emotional intelligence use more functional conflict management strategies (e.g., Jordan & Troth, 2004; Schlaerth, Ensari, & Christian, 2013). I argue that teams with higher collective emotional intelligence are better at managing the detrimental impacts of that collective negativity, and ensuring that conflict is less likely to descend into personal disagreements among its members. This is because these teams recognise the negative tone, and manage their own and others’ negativity such that the conflict does not descend into personality clashes typical of relationship conflict. I propose that:
Proposition 3. Teams’ negative affective tone will be positively related to the conflict experienced in the team, and this link will be weaker when teams have higher emotional intelligence.

Team performance / satisfaction. Theoretical arguments advanced on group affective tone generally assume that higher positive affective tone is more beneficial than lower positive affective tone (e.g., Walter & Bruch, 2008) and that greater negative affective tone produces worse outcomes in teams than lower negative affective tone (e.g., Cole et al., 2008). Teams’ positive affective tone has largely been found to be beneficial to team’s performance in past literature, when performance is self-rated (Barsade, 2002; Tanghe et al., 2010), when it is supervisor-rated (George, 1995; Kim & Choi, 2012) and also when assessed objectively (Hmielecki et al., 2012). There is less evidence of the detrimental effects of negative affective tone on performance (Knight & Eisenkraft, 2015). Cole et al. (2008) studied work teams in the manufacturing industry, predicting that negative affective tone would distract members from task completion. In line with this, greater negative affective tone was associated with decreased team performance (as rated by supervisors), and this effect was moderated by teams’ nonverbal negative expressivity. That is, negative affective tone only had detrimental effects on team performance when the team was free or open in their nonverbal expression of negative affect.

Under the broaden-and-build perspective (Fredrickson, 2001) it is assumed that collective positive affect can increase the amount of information shared between team members (e.g., Bramesfeld & Gasper, 2008), as well as originality of team problem-solving (e.g., Grawitch, Munz, Elliott, & Mathis, 2003a; Grawitch, Munz, & Kramer, 2003b) and increasing team’s goal commitment (e.g., Chi et al., 2011), thus contributing to higher performance. In accordance with this research, it is expected that positive affective tone has a positive relationship with performance, and negative affective tone has a negative relationship with performance.
I further suggest that collective emotional intelligence moderates the influence of affective tone on performance. That is, teams that have high emotional intelligence are better at managing the influence of their team’s affect on various outcomes. With respect to positive affective tone, while there is broad support that it generally contributes positively to performance, researchers have cautioned that it may not always be helpful. Affect-as-information theory (Schwarz, 2012; also known as feelings-as-information theory; Schwarz, 2001) is based on the premise that experienced affect (moods, feelings, emotions) is used as a source of information (a ‘signal’) for individuals. That information can be used to form judgements, and guide information processing style. For example, bad moods can signal problems, and are associated with a more analytic, bottom-up processing style, whereas good moods can signal that everything is fine, and thus are associated with a less effortful, top-down processing style (Schwarz, 2001). Accordingly, negative affect has been linked with better evaluation of arguments and a lesser likelihood of being persuaded to a weak point of view (Schwarz, Bless, & Bohner, 1991). Negative affect has also been shown to improve the quality and persuasiveness of one’s own arguments (Forgas, 2007).

The emotions-as-social information model (Van Kleef, 2009) extends on this theory by positing that observing emotional expressions in others likewise provides information to the observer which may guide their behaviour. For example, when observing anger in a leader, one can infer that they are not performing up to standard; whereas a display of happiness leads to the employee assuming that their behaviour is appropriate. Indeed, some research has supported the notion that affect (own and others’) can be used as important informational and signalling functions, such as when negative affect can enhance motivation in light of failure (Parrott, 2002), angry feedback can enhance creativity (van Kleef, Anastasopoulou, & Nijstad, 2010) or when
positive affect detrimentally serves as a signal that less attention is needed (Martin, Ward, Achee, & Wyer, 1993).

Taking these theories into account, I suggest that teams with higher emotional intelligence will be better able to manage their team’s positive emotions productively, such that it improves teams’ decision-making processes without the downside of complacency among team members regarding the task.

In terms of negative affective tone, the collective experience of negative affect has sometimes been linked to less desirable outcomes (e.g., Cole et al., 2008); however, much of the individual-level literature highlights the functional aspects of negative affect dependent on context (e.g., when negative affect serves as a signal that more focus is needed; Schwarz & Clore, 2003). Teams with higher emotional intelligence are more likely to reap the benefits of positive and negative affective tone, without letting it be too detrimental to their team task effectiveness. On this basis,

Proposition 4. Teams’ affective tone will be related to the performance and satisfaction of the team and this link will be moderated by teams’ emotional intelligence.

Another potential moderator of affective tone and performance is team-level display rules. Emotional display rules specify the emotions which are appropriate to express within a certain context, and may encourage the open display or suppression of positive or negative emotion (Rafaeli & Sutton, 1987). While display rules have generally been considered at an organisational level, recent research demonstrates that local workteams can develop shared perceptions of team-level emotional display rules, with considerable variation between workteams (Diefendorff et al., 2011). These team-level perceptions of display rules have also been shown to predict individual attitudes and outcomes, such as burnout (Diefendorff et al., 2011). Pescosolido (2002) and Walter and Bruch (2008) both acknowledge the likely impact that display rules have on
processes of affective convergence. This link was partially supported by research from Cole et al. (2008), in which the detrimental impact that negative affective tone could have on performance was contingent on the extent to which teams’ expressed nonverbal negativity. When teams were openly expressing their negative affect, the expected deficits on performance were found, but when teams constrained their nonverbal negative expressivity, there were no performance deficits of negative affective tone. This provides initial support that constraining teams’ negative expressivity via explicit display rules may produce the same effect, that is, moderate how harmful a negative affective tone is to performance. While not yet tested, it is also conceivable that encouraging a team to be open in their expression of positive emotions in the workplace may enhance the benefits of a positive affective tone. Based on the theory and research regarding team display rules, I propose that:

Proposition 5. Teams’ affective tone will be related to the performance and satisfaction of the team and this link will be moderated by teams’ display rules.

Conflict, Performance and Emotional Intelligence

Task conflict is generally assumed to help team performance, as it increases the amount of information sharing, prompts members to consider different viewpoints and challenge assumptions about the task and how to complete it (Jehn, 1995; Jehn & Bendersky, 2003). On the other hand, relationship conflict is mostly considered an impediment to team performance, as team members spend time solving interpersonal disagreements rather than focusing on the task; and the rationality of their team’s decision-making can be compromised, as personal issues with other team members may bias them against their arguments and ideas (Jehn & Bendersky, 2003). However, meta-analyses on the effects of different types of conflict on performance shows mixed results. De Dreu and Weingart (2003) found that both task and relationship conflict
were negatively related to team performance, whereas de Wit, Greer, and Jehn (2012) found that the effects of conflict on team outcomes was dependent on many contextual factors (including task type and the co-occurrence of task and relationship conflict); and methodological aspects of the research studies (e.g., excessively high task conflict and the operationalisations of team performance). In particular, they found that task conflict could be beneficial to team performance in decision-making tasks.

These findings fit within Jehn and Bendersky’s (2003) contingency perspective on the relationship between conflict and various outcomes, which suggests that the functionality of different types of conflict may be dependent on various moderating factors of the team, which may amplify, suppress, ameliorate, or exacerbate the influence of conflict on team outcomes. Amplifiers strengthen positive and negative effects of conflict (possible amplifiers include task interdependence, team diversity); whereas suppressors weaken positive and negative effects (a possible suppressor is task routineness). Exacerbators strengthen negative and weaken positive effects (e.g., negative emotions); and finally, ameliorators (which provide the ideal context) strengthen positive and weaken negative effects of conflict. Jehn and Bendersky (2003) suggest that positive emotions, and the inclusion of interest-based third parties are ameliorators of the conflict-performance link. I argue that collective emotional intelligence also ameliorates the effect of conflict on performance (i.e., strengthen the positive effects of task/relationship conflict, and weaken the negative effects of task/relationship conflict on team performance).

Task conflict is generally positively related to team performance through increasing divergent viewpoints. However, more shared information and critical evaluation of options, via criticising or challenging team members’ ideas during task conflict can also cause tension and anxiety that could translate to relationship conflict (Yang & Mossholder, 2004). A team with high emotional intelligence will be better able
to utilise task conflict as a productive force for performance improvement. That is, team members are better able to deal with each others’ different viewpoints and potential criticisms without taking it personally, while maintaining the functional benefits of task conflict. This is consistent with past research by Sessa (1996), who found that when team members had greater emotional sensitivity and perspective taking (i.e., ability to see and understand others’ emotional and cognitive perspectives), they were less likely to see conflict as personal, rather than as a product of the task at hand. Additionally, DeChurch and Marks (2001) found that task conflict was only helpful to performance when teams had effective conflict management strategies, which has been shown to be more likely in teams with higher emotional intelligence (Jordan & Troth, 2004).

While I predict that relationship conflict is detrimental overall to a team’s performance, I suggest that emotional intelligence weakens the negative effects of relationship conflict. A team which is experiencing disagreements between members and personality clashes has the potential to be distracted from a discussion of the task, and thereby globally reduce the effectiveness of team decision-making. However, teams with high collective emotional intelligence may more easily and effectively resolve these personal issues (e.g., Jordan & Troth, 2002, 2004; Yang & Mossholder, 2004), or more effectively manage to keep in check the negative emotions which may arise from such conflicts, thereby reducing the toll that they will take on performance. Therefore, I propose:

Proposition 6. Team emotional intelligence will moderate the link between conflict and performance, such that higher emotional intelligence will increase the positive effects of task conflict and decrease negative effects of relationship conflict.

Conclusion

In this chapter, I have presented my broad research model, and developed general propositions regarding relationships among variables to be tested in my program
of research. In the following chapters, I outline my program of research. In each study I develop specific hypotheses which reflect the context of each study. Study 1 examines student teams completing a decision-making task, with self-rated emotional intelligence measures. Study 2 involves an experimental design, where the display rules of a team were manipulated across conditions, and participants performed a brainstorming task in teams. Finally, in Study 3, participants completed a decision-making task, and their emotional intelligence was assessed via an ability measure. These three studies were each designed to test specific aspects of my overall research model.
CHAPTER 4: STUDY 1 – AFFECTIVE TONE AND DECISION-MAKING PERFORMANCE

Chapter Aims

The aim of this study was to examine the convergence of affect in teams (RQ1), how the affective tone of a team impacted on the conflict experienced by the team (RQ2), as well as the impact on objective team task performance, and whether those links are moderated by emotional intelligence (RQ3). I also test whether team emotional intelligence ameliorates the relationship between team conflict and performance (RQ4). As previous research has linked group affective tone to serious conflict and performance consequences (e.g., Cole et al., 2008), the inclusion of team-level emotional intelligence as a plausible (but not yet tested) moderator of these links can provide valuable insight for researchers and managers alike.

Figure 3. Variables addressed in Study 1.

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Hypothesis Development

Convergence of Affect

As already noted in Chapter 2, affect has been shown to converge in a number of ways; via emotional contagion (e.g., Hatfield et al., 1994), behavioural entrainment (Kelly, 1988), empathy (De Vignemont & Singer, 2006), intentional affective influence (e.g., Austin et al., 2007), ASA processes (George, 1990; Schneider, 1987), socialisation to affective norms (Morrison, 1993), as well as exposure to common affective events (Westman, 2002). These mechanisms are also applicable to team contexts, and can influence affective tone via direct affective exchanges between team members; or indirectly through witnessing affective exchanges between team members (e.g., spillover; Felps et al., 2006). The result of these processes is a consistent affective tone, that is, “consistent or homogeneous affective reactions within a group. The term consistent is key; if affective reactions are not consistent within groups, then it is meaningless to speak of an affective tone of the groups” (George, 1990, p. 108).

Prior research focusing on teams which work together and interact over a substantial amount of time has demonstrated that these teams often experience sufficient convergence in positive affect and negative affect such that they develop a consistent positive affective tone and negative affective tone which characterises their team, and which can predict team behaviours and team performance (e.g., Cole et al., 2008; George, 1990). This effect has also been demonstrated in teams which are formed and interact over a short period of time for completion of a task (e.g., Sy et al., 2005). On this basis, I similarly argue that teams completing a decision-making task across a relatively short duration (25-30 minutes) will converge in positive affect resulting in positive affective tone and converge in negative affect resulting in negative affective tone. Thus:
Hypothesis 1a. Teams will converge in their experience of positive affect during the short-term task, leading to a consistent team positive affective tone.

Hypothesis 1b. Teams will converge in their experience of negative affect during the short-term task, leading to a consistent team negative affective tone.

Emotional Intelligence as a Moderator of Negative Affective Tone and Relationship Conflict

In accordance with increasing recognition of the impact of team-level emotional intelligence on working teams (e.g., Menges & Kilduff, 2015), this study investigates the impact of emotional intelligence on various facets of team affect, including how it may protect a team against harmful conflict resulting from a negative affective tone. It is commonly suggested that negative affective tone is detrimental to the dynamics within the team, in terms of coordination, cooperation, and conflict (George, 1990; Sy et al., 2005). Negative affective tone has been linked to greater experience of different types of conflict in past research (e.g., Gamero et al., 2008).

According to Jehn’s (1995) typology, two commonly distinguished types of conflict that can be experienced within a team are relationship conflict (i.e., tension and animosity between team members), and task conflict (disagreements about the task, including differing opinions and approaches, Jehn, 1995). It is expected that a team with a more highly negative affective tone (i.e., a team which is characterised by anger and frustration, and more irritability and distress) will be more likely to experience relationship conflicts within the team. This is in line with the results of Sessa (1996) who found that negative affective tone was related to people-oriented conflict, but not to task-oriented conflict.

I suggest (also see Chapter 3) that the impact of negative affective tone on relationship conflict is moderated by the collective emotional intelligence of the team. Individuals with high emotional intelligence are able to recognise their emotions
accurately, and subsequently manage their experience of negative emotions, and influence the negative emotions of others around them when necessary (e.g., knowing when to use humour to lift the mood; Mayer & Salovey, 1997). Therefore, in a team situation, having a collectively high level of emotional intelligence may help teams with a negative affective tone, as team members can recognise their individual and collective negativity, and take steps to reduce its impact on interpersonal dynamics.

In line with prior research (e.g., Troth et al., 2012), I conceptualise emotional intelligence at the team level as the average of individual member’s emotional intelligence, based on the view that emotional intelligence is a “resource that team members draw on and that members of the team can pool their abilities to share and compensate for one another” (Elfenbein, 2006, p. 170). I suggest that teams with higher collective emotional intelligence will be better at managing the detrimental impacts of collective negativity, specifically by ensuring that it is less likely to descend into personal disagreements among its members. Thus I propose,

_Hypothesis 2._ Team emotional intelligence moderates the relationship between negative affective tone and relationship conflict, such that negative affective tone is more strongly related to relationship conflict when emotional intelligence is lower, compared to higher.

**Emotional Intelligence as a Moderator of Affective Tone and Performance**

As discussed in Chapter 2, team performance has generally benefitted from a positive affective tone in prior research (e.g., Barsade, 2002; George, 1995; Hmieleski et al., 2012; Kim & Choi, 2012; Tanghe et al., 2010). While there is less research on negative affective tone, Cole et al. (2008) found that greater negative affective tone was associated with a decrease in performance, but only when the team was open in their nonverbal expression of negative affect.
Research has demonstrated that benefits of collective positive affect include greater information sharing within a team (e.g., Bramesfeld & Gasper, 2008) and more original problem-solving solutions (e.g., Grawitch et al., 2003a, 2003b). However, potential downsides include locking teams into a single perspective, which can reduce performance in complex tasks such as decision-making which have no clear correct answer (e.g., George & King, 2007).

I argue that a construct which may help ensure that teams reap positive performance consequences from positive affective tone is team-level emotional intelligence. Teams with higher emotional intelligence are better able to recognise their emotions and assess their functionality for the context, as well as manage their teams’ emotions to ensure appropriate responses (Mayer & Salovey, 1997). This in turn may lead to high level performance without the potential downside of complacency and excessive harmony among team members regarding the task. Thus I propose,

Hypothesis 3. Team emotional intelligence moderates the relationship between positive affective tone and decision-making performance, such that positive affective tone is more beneficial to performance when team emotional intelligence is higher, rather than lower.

Research findings in relation to negative affect are not as straightforward. While limited research has linked collective negative affect and poorer performance at a team level (e.g., Cole et al., 2008); at the individual level, Parrott (2002) suggests that negative affect can be a motivating force in light of setbacks, or can serve as an essential signal that more focus is needed (Schwarz & Clore, 2003). Likewise for negative affective tone, literature has theorised its utility in certain contexts, as a signaling function for a team (e.g., Martin et al., 1993; Schwarz & Clore, 2003; Van Kleef, 2009). Teams with higher emotional intelligence are more likely to reap these benefits of negative affective tone and experience less downsides, as they are more able
to recognise that a negative tone may be useful and seek to address the situation with increased focus, without letting the negativity overwhelm themselves or others. Thus I propose,

*Hypothesis 4.* Team emotional intelligence moderates the relationship between negative affective tone and decision-making performance, such that negative affective tone is less harmful to performance when team emotional intelligence is higher, rather than lower.

**Emotional Intelligence as a Moderator of Conflict and Performance**

According to Jehn (1995), task conflict is theorised as helpful to team performance (by increasing information sharing, prompting consideration of different viewpoints and challenging assumptions; Jehn, 1995; Jehn & Bendersky, 2003). She also argues that relationship conflict can harm team performance, as team members need to devote time to solving interpersonal disagreements rather than focusing on the task (Jehn, 1995). Other research has found that personal issues with other team members may reduce information sharing (Jehn & Bendersky, 2003).

Results of meta-analyses which separate out the effects of these types of conflict show a more complicated picture (e.g., De Dreu & Weingart, 2003), and others have emphasised the role of context in determining the efficacy of types of conflict (de Wit et al., 2012). Consistent with Jehn and Bendersky’s (2003) contingency perspective, I argue that emotional intelligence is an additional moderator of the conflict-performance relationship. That is, it will have an ameliorating effect by strengthening the positive effects of task conflict, and weakening the negative effects of relationship conflict on team performance. I suggest that task conflict overall is positively related to team performance in a decision-making task through more shared information and increasing divergent viewpoints. However, a critical evaluation of options via criticising or challenging team members’ ideas is a part of task conflict that can also cause tension
and anxiety and, in some cases, transform into relationship conflict (Yang & Mossholder, 2004).

Drawing on these arguments, I contend that a team with high emotional intelligence is better able to utilise task conflict as a productive force for performance improvement during decision-making. That is, in teams with higher emotional intelligence, team members are better able to deal with each others’ different viewpoints and potential criticisms without taking it personally, while maintaining the functional benefits of task conflict. This is consistent with past research by Sessa (1996), which found that when team members had greater emotional sensitivity and perspective taking (i.e., ability to see and understand others’ emotional and cognitive perspectives) they were less likely to see conflict as personal, and more as a product of the task at hand. Thus I propose,

*Hypothesis 5.* Team emotional intelligence moderates the positive relationship between task conflict and performance in a decision-making task, such that task conflict is more beneficial to performance when team emotional intelligence is higher, rather than lower.

In terms of relationship conflict, while I predict that it will be detrimental overall to team performance, I suggest that emotional intelligence weakens the negative effects of relationship conflict. A team which is experiencing disagreements between members and personality clashes can certainly distract from discussion during a decision-making task, and globally reduce the effectiveness of teams’ decision-making. However, teams with high collective emotional intelligence are more easily and effectively able to resolve these personal issues (e.g., Jordan & Troth, 2002, 2004), or more effectively manage to keep in check the negative emotions which may arise from such conflicts, thereby reducing the toll that they will take on performance. Thus I propose,
Hypothesis 6. Team emotional intelligence moderates the negative relationship between relationship conflict and decision-making performance, such that relationship conflict is less detrimental to performance when team emotional intelligence is higher, rather than lower.

Method

In order to test these hypotheses, I developed a study incorporating a split administration design, in which existing student teams completed a decision-making task, and were assessed as to their affective tone, experienced conflict, and objectively-rated performance during the task. At a later time point, participants’ emotional intelligence was assessed via a self-rated measure. Ethical approval for this study was obtained from the University Ethics Committee (see Appendix A).

Participants

The participants in this study consisted of students completing a business communication course. At Time 1, data were collected from 254 participants nested in 70 teams (75.37% of the full student sample enrolled in the course), with team sizes ranging from three to six members per team \( (M = 3.59, SD = 0.93) \). At Time 2, data were collected from 290 participants (86.05% of full sample participation). After matching data across Time 1 and Time 2, the final sample comprised 211 participants nested in 61 teams. Participants’ ages ranged from 18 to 49 \( (M = 22.06, SD = 3.71) \), 71% were female, and participants had an average of four years work experience with 95% of the sample reporting having some work experience.

Procedure

As data were collected from students in class at different time points, participants were asked to generate a unique identifying code, so that their responses could be
matched across Time 1 and 2 of the study, while maintaining their anonymity. Students were recruited during tutorial classes, and participation in the study was part of course requirements (while still allowing students the option of not submitting their data for research purposes). At Time 1, a team task was run during class. Participants first completed a survey in which they generated a Unique ID, as well as providing demographic information and level of affect before the task (pre-task affect). Participants were then asked to complete a decision-making task that involved a hypothetical survival situation, both individually and then in their teams (Johnson & Johnson, 2003). Afterwards, participants individually completed surveys addressing their current level of affect (post-task affect), as well as the conflict experienced in their team. Teams were made up of students who had been randomly formed into teams at the start of the semester, in order to create and present a 15 minute persuasive speech to their classes which would be worth 20% of their grade. As such, these teams had known each other and been working together for four weeks at the time of the team task. Four weeks after the Time 1 collection, participants received information about the second part of the study in class, as well as a link to complete the Time 2 survey online, in their own time. Participants had one week to complete the survey, which assessed their emotional intelligence and took approximately 15 minutes.

**Measures**

**State affect.** Participants' state affect was measured immediately before and after the team task, via the validated PANAS (Watson et al., 1988). The scale contains 10 items assessing negative affect (e.g., "irritable") and 10 items assessing positive affect (e.g., "excited"). Items are rated on a scale from 1 (very slightly or not at all) to 5 (extremely) and participants were asked to rate the items with regards to "what extent you feel this way right now, that is, at the present moment". The Cronbach’s alpha for
the negative affect subscale at pre-task was .89, while positive affect had a reliability of .90 at pre-task. The Cronbach’s alpha for the negative affect subscale was .90, and .91 for positive affect at post-task measurement.

**Conflict.** Individual team members’ perception of conflict during the team task was measured using the validated Intragroup Conflict scale (Jehn, 1995; Shah & Jehn, 1993). This scale assesses perceptions of the team’s relationship conflict via three items, e.g., “How much emotional conflict was there in your group?”; (α = .81), and task conflict via two items, e.g., “How frequently were there conflicts about ideas in your group?” (α = .79). Conflict items are measured on a scale from 1 (none) to 5 (a lot).

**Performance.** The team task involved a hypothetical survival situation in which a plane crashed-landed in a wilderness area (Johnson & Johnson, 2003). A list of twelve survival items was provided, which participants individually ranked in order of importance for the survival scenario within a five minute time limit (thus every individual had an **Individual Task Score**). Then their team had a discussion, and came up with their consensus on their team’s rankings of the survival items with a ten minute limit (thus each team had a **Team Task Score**). Individual and Team Task Scores were derived by comparison to the ranking provided by two survival experts (one of whom was an instructor in survival training with the US army, and the other an expert on environmental education; Johnson & Johnson, 2003). These scores were calculated by using absolute difference scores from experts’ rankings of the twelve survival items. Lower scores indicate better performance (i.e., more agreement with experts), with possible scores ranging from 0 (perfect score) to 112 (worst score; Johnson & Johnson, 2003). As this task involves a team deciding on issues with no readily apparent right answer, it is classified as a decision-making task as per McGrath’s (1984) circumplex model of task types.
Taking into account both the Individuals’ Task Scores ($M = 50.91$, $SD = 7.37$) and the Teams’ Task Scores ($M = 50.13$, $SD = 6.51$), I used a measure of team performance that is designed to account for team members’ prior knowledge and resources that they bring to the task. Calculating a measure of *Team Improvement Scores* gives an indication of the improvement of the team’s score as compared to the average of their individual members’ scores (calculated as the team’s task score minus the average of their individual members’ scores). A negative value indicates an improvement from a team’s averaged individuals’ score, zero indicates a team performance equal to the average of its individual members’ scores, and positive scores indicate a worsening of team score as compared to averaged individual responses. The winter survival task is heavily dependent on knowledge of survival techniques and extreme environmental conditions (e.g., requires knowledge of how to make fire with an empty cigarette lighter and steel wool). It is this kind of knowledge that is essential to be shared and utilised in team discussions to determine rankings of items. Therefore, assessing performance using Team Improvement scoring provides a better measure of the success of team processes, including how a team took into account the knowledge already held by its members and utilised its resources appropriately.

Comparing collective team scores to the average of their individual efforts has been commonly used to assess the success of this type of task (e.g., Cooke & Kernaghan, 1987; Hall & Watson, 1970; Rogelberg, Barnes-Farrell, & Lowe, 1992; Volkema & Ronald, 1998), and was chosen because teams in the workplace are generally formed under the assumption that the team will pool its knowledge and resources, and in so doing, achieve more than could be expected by simply combining the individual employee’s efforts (George & King, 2007). Therefore, the team’s ability to share its knowledge, and come up with a better solution than the average of their
individual efforts (i.e., team improvement scores) is the measure of successful team performance.

**Emotional intelligence.** Participants’ emotional intelligence in teams was assessed using the validated Workgroup Emotional Intelligence Profile (WEIP; Jordan & Lawrence, 2009). The scale measures participants’ emotional intelligence in teams through four subscales: awareness of own emotions (4 items, e.g., “I can explain the emotions I feel to team members”; $\alpha = .87$); management of own emotions (4 items, e.g., “I give a fair hearing to team members’ ideas”; $\alpha = .68$); awareness of others’ emotions (4 items, e.g., “I can tell when team members don’t mean what they say”, $\alpha = .84$), and management of others’ emotions (4 items, e.g., I can get fellow team members to share my keenness for a project”; $\alpha = .86$). The reliability for the overall scale was .85. All items were rated on a scale from 1 (strongly disagree) to 7 (strongly agree).

**Results**

**Individual-level Results**

**Data aggregation.** As hypotheses were developed around team-level variables, individual-level data were aggregated to the team level. Consistent with my conceptualisation of emotional intelligence as an additive input (e.g., Chan, 1998; Elfenbein, 2006) at the team level (see Chapter 3), individually assessed emotional intelligence was aggregated to the team level via team means with no statistical requirements needed as justification. However, as both team conflict and group affective tone are direct consensus concepts that rely on agreement within-group and between-group differences for meaning (Bliese, 2000; Chan, 1998; Kozlowski & Klein, 2000), they were statistically assessed to see whether they could adequately represent group-level constructs. This is done by assessing within-group agreement via $r_{wg}$ (using a uniform expected distribution; James et al., 1993), where the generally accepted cutoff
is a median of .70 or higher (Chen, Mathieu, & Bliese, 2004) and ICC(1), which indicates how much of the variance in the focal variable is attributable to group membership (Bliese, 2000). LeBreton and Senter (2008) suggest ICC(1) values of around .01 indicate a small effect, around .10 indicates a medium effect and .25 and above would indicate a large effect. The significance of the F-test for ICC(1) indicates whether the variance in the focal variable is significantly smaller within teams than between teams (Chen et al., 2004). Additionally, ICC(2) values provide a measure of the reliability of the team means (i.e., larger values indicate larger between-group variability; Klein & Kozlowski, 2000). Table 1 presents a summary of the aggregation statistics for team conflict and affective tone.

Table 1
Summary of Aggregation Statistics for Team-Level Variables in Study 1

<table>
<thead>
<tr>
<th>Team Variables</th>
<th>Median ( r_{\text{wg}} )</th>
<th>ICC(1)</th>
<th>F-test for ICC(1)</th>
<th>ICC(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.79</td>
<td>0.11</td>
<td>( F(60, 210) = 1.43, p = .041 )</td>
<td>0.30</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.78</td>
<td>0.12</td>
<td>( F(60, 210) = 1.46, p = .036 )</td>
<td>0.31</td>
</tr>
<tr>
<td>Negative Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.91</td>
<td>0.16</td>
<td>( F(60, 210) = 1.68, p = .006 )</td>
<td>0.40</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.93</td>
<td>0.17</td>
<td>( F(60, 210) = 1.73, p = .004 )</td>
<td>0.42</td>
</tr>
<tr>
<td>Relationship Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Task</td>
<td>.84</td>
<td>0.34</td>
<td>( F(60, 210) = 2.80, p &lt; .001 )</td>
<td>0.64</td>
</tr>
<tr>
<td>Task Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Task</td>
<td>.79</td>
<td>0.34</td>
<td>( F(60, 210) = 2.81, p &lt; .001 )</td>
<td>0.64</td>
</tr>
</tbody>
</table>

Note. \( N = 61 \)

As pre-task affect was not expected or required to be meaningful as a team-level construct, those results are presented in Table 1 only as a point of comparison to post-task affect. Post-task affect and the team conflict measures exceeded the .70 cutoff for \( r_{\text{wg}} \) values; the ICC(1) values indicate significant medium to large effects; and the ICC(2) values are slightly low for post-task affect, but comparable to previous findings on group affective tone (e.g., Cole et al., 2008). The results indicate that post-task negative affect and post-task positive affect can be aggregated to the team level, and meaningfully represent the teams’ negative affective tone and positive affective tone.
respectively. Likewise, relationship and task conflict display sufficient justification for aggregation to the team level. An unexpected finding was that teams' pre-task positive and negative affect were also highly consistent, and meet requirements to represent team-level constructs.

**Convergence of affect.** Hypothesis 1 suggested that teams' affect would converge during the course of the team task; (H1a) that positive affect would converge resulting in positive affective tone, and (H1b) that negative affect would converge, resulting in negative affective tone. Examination of Table 1 suggests similar, or slight improvement in aggregation statistics from pre- to post-task in affect. In line with Sy and Choi (2013), an additional test of convergence is to look at the change in variance of affect for teams at two time points. Paired samples t-tests on variance in affect (via standard deviation) suggests that negative affect did converge from pre-task (average SD of team negative affect = 0.54) to post-task (average SD of team negative affect = 0.44); \( t(60) = 2.64, p = .010 \). However, positive affect showed no significant changes from pre- to post-task; \( t(60) = -1.74, p = .088 \) (average SD's of 0.66 and 0.72 for pre- and post-task positive affect respectively).

Therefore, Hypothesis 1 was partially supported; while both positive affect and negative affect were quite consistent before the team task, negative affect still showed a substantial convergence during the task (supporting H1b), while positive affect showed no substantial convergence (contrary to H1a).

**Team-level Analyses**

As my primary team-level analyses involve moderation, it is important to first set acceptable cutoff points for determining significance. Increasingly, researchers are encouraged to determine significance not by arbitrary cutoffs (of which < .05 is the most popular in management research), but by setting significance levels with
consideration of the specific research context (Aguinis et al., 2010). In light of the low N of this study, combined with the inherent difficulty in detecting interaction effects, and expected low effect sizes (McClelland & Judd, 1993; see also Harrison et al., 1998), I am therefore relaxing the significance levels to $p < .10$ for hypothesis testing of group-level analyses. For the sake of brevity, only the analyses with significant main effects and/or interactions will be presented in tables (full results of non-significant analyses are available on request).

Means, standard deviations, and intercorrelations between team-level variables are reported in Table 2. Initial correlations suggest that positive affective tone and negative affective tone is linked to higher relationship conflict (but not task conflict). Higher management of others’ emotions is linked with higher positive affective tone, and awareness of others’ emotions is linked to higher task conflict. There were no significant direct relationships for team improvement scores.

Table 2 also reveals a high correlation between relationship conflict and task conflict. Although this may be of some concern regarding potential for multicollinearity, my further analysis will only be of relationship conflict as there is no link between task conflict and my variables of interest. On this basis, the relationship between the different types of conflict is not an issue that needs to be addressed in the current study.
<table>
<thead>
<tr>
<th>Team Variables</th>
<th>10</th>
<th>6</th>
<th>8</th>
<th>7</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Awareness of Own Emotions</td>
<td>4.90</td>
<td>0.09</td>
<td>1.11</td>
<td>2.28</td>
<td>4.11</td>
<td>4.05</td>
<td>0.87</td>
<td>5.76</td>
<td>0.43</td>
<td>2.12</td>
</tr>
<tr>
<td>2. Management of Own Emotions</td>
<td>5.07</td>
<td>0.55</td>
<td>4.88</td>
<td>0.89</td>
<td>4.41</td>
<td>3.54</td>
<td>7.98</td>
<td>0.78</td>
<td>1.32</td>
<td>3.21</td>
</tr>
<tr>
<td>3. Awareness of Others' Emotions</td>
<td>4.90</td>
<td>0.09</td>
<td>1.11</td>
<td>2.28</td>
<td>4.11</td>
<td>4.05</td>
<td>0.87</td>
<td>5.76</td>
<td>0.43</td>
<td>2.12</td>
</tr>
<tr>
<td>4. Management of Others' Emotions</td>
<td>5.07</td>
<td>0.55</td>
<td>4.88</td>
<td>0.89</td>
<td>4.41</td>
<td>3.54</td>
<td>7.98</td>
<td>0.78</td>
<td>1.32</td>
<td>3.21</td>
</tr>
<tr>
<td>5. Positive Affective Tone</td>
<td>3.00</td>
<td>0.19</td>
<td>1.10</td>
<td>1.00</td>
<td>0.10</td>
<td>0.05</td>
<td>5.92</td>
<td>0.75</td>
<td>0.33</td>
<td>2.29</td>
</tr>
<tr>
<td>6. Positive Affective Tone</td>
<td>3.00</td>
<td>0.19</td>
<td>1.10</td>
<td>1.00</td>
<td>0.10</td>
<td>0.05</td>
<td>5.92</td>
<td>0.75</td>
<td>0.33</td>
<td>2.29</td>
</tr>
<tr>
<td>7. Relationship Quality</td>
<td>2.00</td>
<td>0.37</td>
<td>1.05</td>
<td>0.20</td>
<td>2.33</td>
<td>1.15</td>
<td>2.07</td>
<td>0.75</td>
<td>0.12</td>
<td>1.20</td>
</tr>
<tr>
<td>8. Task Conflict</td>
<td>2.00</td>
<td>0.37</td>
<td>1.05</td>
<td>0.20</td>
<td>2.33</td>
<td>1.15</td>
<td>2.07</td>
<td>0.75</td>
<td>0.12</td>
<td>1.20</td>
</tr>
<tr>
<td>9. Team Improvement Score</td>
<td>0.08</td>
<td>0.22</td>
<td>0.04</td>
<td>0.78</td>
<td>3.07</td>
<td>1.15</td>
<td>2.07</td>
<td>0.75</td>
<td>0.12</td>
<td>1.20</td>
</tr>
<tr>
<td>10. Team Size</td>
<td>3.46</td>
<td>1.11</td>
<td>1.00</td>
<td>2.33</td>
<td>1.00</td>
<td>0.05</td>
<td>5.92</td>
<td>0.75</td>
<td>0.33</td>
<td>2.29</td>
</tr>
</tbody>
</table>
Emotional intelligence as a moderator of negative affective tone and relationship conflict. Hypothesis 2 suggested that negative affective tone would be positively related to relationship conflict, and this link would be moderated by teams’ emotional intelligence (i.e., the link would be less strong when teams had high emotional intelligence). Four hierarchical regressions were run to assess whether any of the four facets of emotional intelligence moderated this link. In each analysis, both team size and pre-task negative affect were controlled for in the first step, as well as the other emotional intelligence facets. In line with Spector and Brannick (2011) who suggest that control variables be explicitly explained, the control variables included in my regressions were either theoretically (e.g., team size) or empirically (See Table 2) related to my DV and on that basis may account for part of the variance. The IV and moderators were mean-centered prior to their entry in Step 2 to avoid multicollinearity (Aiken & West, 1991). The interaction term was then entered in Step 3. While I expected that all four emotional intelligence facets would be moderators, only awareness of own emotions and awareness of others’ emotions were significant moderators, and the results of those analyses are presented in Tables 4 and 5 below. In line with conventions for reporting moderated regressions, beta values are given for the control variables in step 1, the main effects of the IV and moderator in step 2, and the interaction term in step 3; along with the corresponding changes in $R^2$ and $F$ values at each step of the analysis. Finally, the total $R^2$ and overall $F$-test are given for the overall model at Step 3.

Contrary to expectations, no significant main effect of negative affective tone on relationship conflict was found, though the trend was positive ($\beta = .34$, $p = .106$). However, the interaction of negative affective tone and awareness of own emotions was significant when entered in Step 3 ($\beta = .39$, $p = .018$), supporting Hypothesis 2 (see Table 3).
Table 3
Hierarchical Regression Results for Negative Affective Tone & Awareness of Own Emotions on Relationship Conflict

<table>
<thead>
<tr>
<th></th>
<th>Relationship Conflict</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
<td>ΔF</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Size</td>
<td>.06</td>
<td>.05</td>
<td>0.59</td>
</tr>
<tr>
<td>Team Pre-Task Negative Affect</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>-.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others' Emotions</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others' Emotions</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.05</td>
<td>1.36</td>
</tr>
<tr>
<td>Negative Affective Tone</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.10</td>
<td>5.98**</td>
</tr>
<tr>
<td>Negative Affective Tone x Awareness of Own Emotions</td>
<td>.39**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total R² at Step 3</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F at Step 3</td>
<td></td>
<td>1.53</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 61.  
*p < .10, **p < .05, ***p < .001

In line with Bedeian and Mossholder (1994, see also Bobko & Russell, 1994), who argue that significant interactions are meaningful and should be followed up regardless of the significance of the overall model, follow-up tests were conducted. The significant interaction was examined at high (1 SD above the mean) and low (1 SD below the mean) levels of awareness of own emotions. In contrast to my hypothesis that emotional intelligence facets would help weaken the positive link between negative affective tone and relationship conflict, examination of Figure 4 suggests that high awareness of own emotions leads to a stronger link between those variables. The simple slopes tests revealed that negative affective tone was a significant positive predictor of relationship conflict only when awareness of own emotions was high (β = .96, p = .004), but negative affective tone was not significantly related to relationship conflict when awareness of own emotions was low (β = .14, p = .518). The graph of the interaction is plotted in Figure 4.
Figure 4. Interaction of negative affective tone and awareness of own emotions on relationship conflict.

The results for awareness of others’ emotions as a moderator of negative affective tone and relationship conflict are presented in Table 4.

Table 4
Hierarchical Regression Results for Negative Affective Tone & Awareness of Others’ Emotions on Relationship Conflict

<table>
<thead>
<tr>
<th></th>
<th>Relationship Conflict</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Size</td>
<td>.01</td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>Team Pre-Task Negative Affect</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>-.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others’ Emotions</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td>.09</td>
<td>2.48*</td>
</tr>
<tr>
<td>Negative Affective Tone</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others’ Emotions</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td>.09</td>
<td>6.06**</td>
</tr>
<tr>
<td>Negative Affective Tone x Awareness of Others’ Emotions</td>
<td>-.32***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total $R^2$ at Step 3</strong></td>
<td></td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td><strong>Overall $F$ at Step 3</strong></td>
<td></td>
<td>1.54</td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 61.

$p < .10$, $^* p < .05$, $^** p < .001$
As seen in Table 4, the interaction of negative affective tone and awareness of others’ emotions was significant ($\beta = -.32, p = .017$), consistent with Hypothesis 2. However, the nature of the interaction was contrary to my hypothesis (See Figure 5). Simple slopes tests were conducted (as recommended by Bedeian & Mossholder, 1994) and revealed that negative affective tone was not a significant predictor of relationship conflict when awareness of others’ emotions was high ($\beta = .06, p = .793$). Examination of Figure 5 suggests that relationship conflict remained generally high when teams had more awareness of others’ emotions, regardless of negative affective tone (therefore, awareness was detrimental to relationship conflict across the board). Negative affective tone was significantly and positively related to relationship conflict when awareness of others’ emotions was low ($\beta = .66, p = .007$). The graph of the interaction is presented below in Figure 5.

**Figure 5.** Interaction of negative affective tone and awareness of others’ emotions on relationship conflict.
Overall, my expectation was that negative affective tone would be positively related to relationship conflict, and that higher emotional intelligence would be helpful in weakening this link. My results are contradictory to this notion, as I found that the awareness facets of emotional intelligence (awareness of own emotions and awareness of others’ emotions) were detrimental for the link between negative affective tone and relationship conflict.

**Emotional intelligence as a moderator of affective tone and performance.**

Hypothesis 3 suggested that positive affective tone would be positively related to team performance, and this relationship would be moderated by the average emotional intelligence of the team (i.e., there would be more performance benefits to positive affective tone when teams had higher emotional intelligence than lower emotional intelligence). A series of moderated regressions were performed to determine whether the facets of emotional intelligence moderated the effect of positive affective tone on team performance. Team size and pre-task positive affect, as well as other emotional intelligence facets were controlled for in the first step, and the IV and moderator were mean-centered prior to entry in Step 2 to avoid multicollinearity (Aiken & West, 1991). The interaction term was entered in Step 3.

Only management of others’ emotions was a significant moderator of positive affective tone and team performance (assessed via team improvement score), the results of the regression are presented below in Table 5.
Table 5
Hierarchical Regression Results for Positive Affective Tone and Management of Others’ Emotions on Team Improvement Scores

<table>
<thead>
<tr>
<th></th>
<th>Team Improvement Score</th>
<th>( \Delta R^2 )</th>
<th>( \Delta F )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Size</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Pre-Task Positive Affect</td>
<td>-.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others’ Emotions</td>
<td>-.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affective Tone</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others’ Emotions</td>
<td>-.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.11</td>
<td>6.91**</td>
</tr>
<tr>
<td>Positive Affective Tone x Management of Others’ Emotions</td>
<td>-.35**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total ( R^2 ) at Step 3</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall ( F ) at Step 3</td>
<td>1.58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \( N = 61 \).
* \( p < .10 \), ** \( p < .05 \), *** \( p < .001 \)

In line with Hypothesis 3, Table 5 demonstrates a significant interaction of positive affective tone and management of others’ emotions on team improvement (\( \beta = -.35, p = .011 \)), which was plotted in Figure 6 and analyses at high and low levels of the moderator (Bedeian & Moskholder, 1994). In partial support of Hypothesis 2, the figure suggests that when teams have high management of others’ emotions, positive affective tone is helpful to performance (since lower scores indicate greater performance). The figure also shows a somewhat unexpected finding, which is that for teams with low management of others’ emotions, positive affective tone is not just less helpful to performance (which I hypothesised), but increasing positive affective tone is actually harmful to performance (see Figure 6).
Figure 6. Interaction of positive affective tone and management of others’ emotions on team improvement (lower scores indicate better performance).

Simple slopes tests support these observations, as positive affective tone was significantly detrimental to team improvement when management of others’ emotions was low (β = .53, p = .044), and was trending towards significance as helpful to performance (though not reaching significance) when management of others’ emotions was high (β = -.14, p = .565).

Hypothesis 4 predicted that negative affective tone negatively influences performance, and that this effect is moderated by emotional intelligence. However, no significant main effects or interactions were found for any facets of emotional intelligence and negative affective tone on team improvement scores.

**Emotional intelligence as a moderator of conflict and performance.**

Hypothesis 5 predicted that task conflict is related to performance, and this effect is moderated by emotional intelligence (such that emotional intelligence increases the performance benefits of task conflict). Table 6 supports this, showing a significant
interaction between task conflict and management of others’ emotions on team improvement score ($\beta = .27, p = .058$). The significant interaction is plotted in Figure 7 below.

Table 6
Hierarchical Regression Results for Task Conflict and Management of Others’ Emotions on Team Improvement Scores

<table>
<thead>
<tr>
<th>Step</th>
<th>Team Improvement Score</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td>.04</td>
<td>.04</td>
<td>0.50</td>
</tr>
<tr>
<td>Team Size</td>
<td></td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td></td>
<td>-.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td></td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others’ Emotions</td>
<td></td>
<td>-.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.03</td>
<td>.03</td>
<td>0.86</td>
</tr>
<tr>
<td>Task Conflict</td>
<td></td>
<td>-.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others’ Emotions</td>
<td></td>
<td>-.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.06</td>
<td>.06</td>
<td>3.74*</td>
</tr>
<tr>
<td>Task Conflict x Management of Others’ Emotions</td>
<td></td>
<td>.27*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$ at Step 3</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Overall $F$ at Step 3</td>
<td></td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 61.

$p < .10$, $**p < .05$, $***p < .001$

Figure 7. Interaction of task conflict and management of others’ emotions on team improvement (lower scores indicate better performance)
The interaction effect on team improvement was then followed up with simple slopes analyses for high (1 SD above the mean) and low (1 SD below the mean) levels of management of others’ emotions (Bedeian & Mossholder, 1994). Contrary to predictions, task conflict was not a significant predictor of team performance when management of others’ emotions was high ($\beta = .07, p = .636$), as performance was high across the board for teams with high management of others’ emotions. Task conflict was significantly beneficial to team performance when management of others’ emotions was low ($\beta = -.40, p = .049$).

Finally, Hypothesis 6 predicted that relationship conflict is related to performance, and that this link is moderated by emotional intelligence. No significant main effects or interactions were found for relationship conflict.

**Discussion**

The aim of this study was to investigate the impact of team emotional intelligence among the interplay of affective tone, team conflict and team performance. To assess these relationships, I measured student teams’ affect before and after completing a decision-making task, had them report their teams’ conflict, and assessed performance via an objective measurement calculation. Participants’ self-reported emotional intelligence was collected at a different time point.

**Convergence of affect.** In line with prior research, I found that existing teams which were brought together to perform a short-term decision-making task still demonstrated the typical convergence in positive affect that is generally found in long-term teams, such that teams developed positive affective tone (e.g., George, 1990). While there was less evidence of convergence for negative affect over time (as teams began the task already quite similar in negative affect), teams also exhibited negative
affective tone (e.g., Cole et al., 2007). This provides further support to the robust nature of affect convergence within teams specifically in short-term tasks.

I note that both pre-task and post-task were convergent and note that these teams had known each other and been working together for four weeks at the time of the team task. In line with Elfenbein (2014), these teams had been subject to shared stimulus and on that basis may have already converged in affect as a result of working together.

**Emotional intelligence as a moderator of negative affective tone and relationship conflict.** There was an unexpected result that higher team levels of awareness of own and others’ emotions had largely harmful effects on the link between negative affective tone and relationship conflict. Some prior research (Elfenbein & Ambady, 2002) has identified that more skill in perceiving negative emotions can be associated with less optimal outcomes, especially in younger samples in which emotional perception may not necessarily lead to emotional management (Elfenbein et al., 2007; Gross et al., 1997). Conceivably, a team which can easily pick up on more subtle cues of negativity from team members might be more likely to let it affect their behaviour in the team leading to more personality clashes, than a team in which subtle anger or frustration cues from others are missed.

**Emotional intelligence as a moderator of affective tone and performance.**

Prior research has generally found a net positive effect of positive affective tone on team performance (e.g., Barsade, 2002; George, 1995; Hmieleski et al., 2012; Kim & Choi, 2012; Tanghe et al., 2010). My research instead found that team’s management of others’ emotions was a crucial factor in determining whether positive affective tone was helpful or harmful to team performance. More specifically, positive affective tone was helpful to performance when teams could manage each others’
emotions, but higher positive affective tone was actually harmful to team performance when teams had lower management of others’ emotions. Some researchers have previously suggested that positive affective tone might be harmful to teams in certain circumstances, such as in complex tasks, or tasks requiring creativity (George & King, 2007.)

Tsai et al. (2012) provides support for the conditional nature of positive affective tone in creativity. The authors found that a high positive affective tone in combination with high trust between team members had a negative impact on team creativity; as team members refrained from arguing different viewpoints and considering alternative options which can be crucial for innovative performance. Likewise, in the case of complex decision-making, the presence of less positivity in team members can be crucial to team performance in tasks in which information is distributed among members, and thus needs to be shared for effective performance outcomes (Kooij-de Bode et al., 2010).

The task used in the current study required team members to discuss their theories with fellow teammates and come to a group consensus with no clear “correct” answer. This requires vigorous debate and the consideration of multiple viewpoints. As such, this may be the type of task in which higher positive affective tone is detrimental to a team’s performance, especially as the performance indicator in this study was an assessment of the team’s ability to share their knowledge/resources with their fellow members, in order to exceed the average of their individual efforts via discussion and debate. In teams which could not manage each others’ emotions effectively, positive affective tone may have led to complacency about the task (as per affect-as-information theory; Schwarz & Clore, 2003), a lack of effort to share their knowledge (e.g., Kooij-de Bode et al., 2010), and made it less likely to argue for the
merits of their rankings in the performance task and investigate different opinions (e.g., Tsai et al., 2012), leading to decreased performance.

**Emotional intelligence as a moderator of conflict and performance.**

Management of others’ emotions was also shown to be an important factor in the relationship between a team’s experience of task conflict and their performance. As the task in the current study was a complex decision-making task, I expected that task conflict would be helpful to team performance; by increasing the amount of knowledge shared between team members, and encouraging team members to approach the task from different perspectives (Jehn & Bendersky 2003). I hypothesised that emotional intelligence would strengthen the positive effects of task conflict on performance, as team members would be more likely to view task conflict as constructive, rather than let it distract or lead to excessive negativity (Jehn & Bendersky 2003; Yang & Mossholder 2004; Sessa 1996). Instead, I found that for teams with higher management of others’ emotions, all levels of task conflict were associated with high performance. However, in cases where teams had lower management of others’ emotions, high task conflict was essential to achieving high performance.

Contrary to expectations, the current study found no link between the experience of relationship conflict and team performance, nor did emotional intelligence interact with relationship conflict in the prediction of performance. The mean levels of relationship conflict in my study are somewhat lower than is usually reported in studies which do find significant links between relationship conflict and performance. For example, de Wit et al.’s (2012) meta-analysis on conflict types found across 116 published studies (and 8,880 teams) an average score of 2.72 ($SD = 0.70$) for relationship conflict (whereas my study had a mean of $2.07$, $SD = 0.76$). This
lower average score may be due to the shortness of my decision-making task (10 minutes maximum), as studies have shown that it takes time for relationship conflict to develop in teams (e.g., Jehn & Mannix, 2001).

Additionally, the lack of performance consequences of relationship conflict may be due to the short-term nature of the decision-making task. Some researchers have found that teams completing a short-term task are less likely to experience the usual deficits of conflict, as members are aware of the temporary nature of the task and so find it easier to ignore the conflicts (e.g., Bakker, Boros, Kenis, & Oerlemans, 2012; Saunders & Ahuja, 2006).

**Summary.** The results of Study 1 provided valuable insights into the role of collective emotional intelligence determining the impact of group affective tone on team conflict and performance. In the following chapter, I present Study 2, which both supports and extends the results of Study 1. The sample for Study 1 comprised existing student teams, (i.e., team members knew each other) prior to completing the decision-making task. In Study 2, student teams are formed randomly immediately prior to the group task, a creativity-based brainstorming task. While Study 1 focused solely on the consequences of affective tone, Study 2 also examines the antecedents of affective tone, and more specifically the personality composition of a team (in terms of their trait PA and trait NA), and how emotional intelligence moderates the development of group affective tone. Furthermore, Study 2 examines the impact of display rules on the consequences of affective tone, by manipulating display rules within teams.
CHAPTER 5: STUDY 2 – THE FORMATION OF AFFECTIVE TONE AND ITS IMPACT ON CREATIVE PERFORMANCE

Chapter Aims

Study 2 builds on the results of Study 1 in a number of ways. First, in this study I examine how the trait affective composition of a team affects the development of group affective tone, and whether this depends on collective emotional intelligence (RQ1). To support the results of Study 1, I also investigate whether collective emotional intelligence moderates the link between affective tone and team performance under different circumstances (in this case, with randomly formed teams completing a creative task), as per RQ3. Additionally, my aim was to examine the impact of formally imposed display rules on the relationship between affective tone and team performance (RQ3).

![Diagram of the study's variables and relationships]

*Figure 8. Variables addressed in Study 2.*

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Hypothesis Development

Convergence of Affect

Prior research focusing on teams which work together and interact over a substantial amount of time has demonstrated that these teams often experience sufficient convergence in positive affect and negative affect such that they develop a consistent positive affective tone and negative affective tone which characterises their team, and which can predict team behaviours and team performance (e.g., Cole et al., 2008; George, 1990; Sy et al., 2005). In the previous chapter (Study 1), I demonstrated that this effect occurs in existing teams which complete a team task over a short period of time, when team members are familiar with each other prior to the task. I suggest that, in line with previous research on the robust nature of convergence (e.g., Sy et al., 2005), this also occurs with teams which are randomly formed with little familiarity completing a short team task.

_Hypothesis 1a._ Teams will converge in their experience of positive affect during the creative task, leading to a team positive affective tone.

_Hypothesis 1b._ Teams will converge in their experience of negative affect during the creative task, leading to a team negative affective tone.

Trait Affect and Emotional Intelligence as Inputs to Affective Tone

As noted previously, trait PA and NA have significant influence on an individual’s affective experience. At the individual level, these affective tendencies impact on how likely it is for team members to experience certain emotions/moods, and their roles in affective influence processes (Watson et al., 1988). At the team level, the composition of trait NA and trait PA members in a team can have a direct effect on the state affective experiences within the team. A team composed mostly of individuals with high trait NA (which represents a general tendency) are also most likely be
characterised by high state NA (which represents an experienced affect). For example, George (1990) showed that the aggregation of individual trait NA and trait PA of individual team members can predict the (state) negative and positive affective tones of real workgroups. In line with these findings, it is predicted that teams' average trait affect serves as an input variable to their group affective tone that is created during a creative performance task such that:

- *Hypothesis 2a.* Teams' average trait PA is related to the positive affective tone of the team.
- *Hypothesis 2b.* Teams' average trait NA is related to the negative affective tone of the team.

Although trait PA and trait NA in teams have been demonstrated to be an important input factor to affective tone (e.g., George, 1990, 1995), the processes of emotional contagion also need to be considered. That is, processes of primitive emotional contagion, empathy, intentional affective influence, and other contagion processes mean that emotions are constantly being passed around in real time as teams interact (Walter & Bruch, 2008). I suggest that the relationship of teams' trait NA/PA to the affective tone of workteams is moderated by the team's emotional intelligence (see also Chapter 3). That is, the processes of contagion are more present when teams have high recognition of their own and others' emotions. (i.e., they engage in more emotional contagion, more in-the-moment emotions passed around to derive their affective tone), rather than when teams have lower recognition of their own and others' emotions (i.e., their trait affect stands out and has a stronger influence on their final affective tone, rather than moment-to-moment emotions, which they may not be aware of, and therefore may not be contagious within the team). This is in line with Hatfield et al.'s (1992) initial conceptualization of the processes of emotional contagion, such that in
order for an individual to receive others’ emotion, they must be able to read the non-verbal cues of senders, as well as have good awareness of their own emotional responses. Papousek et al. (2008) provided further support for this when they found that the ability to perceive another’s emotions (i.e., awareness of others’ emotions) appears to increase one’s susceptibility to another’s emotion. Likewise, the ability to manage own and others’ emotions is also an important factor in enabling emotional contagion. The ability to influence both your own and others’ emotions (e.g., cheer others up) also likely leads to increased emotional influences and increased emotional contagion in an interactive team situation. I argue that without the presence of these emotional intelligence facets in a team enabling strong emotional influences, the importance of teams’ trait affective tendencies as an input variable to group affective tone is increased (i.e., state affect will be determined primarily by trait affect, rather than dynamic situational exchanges). Based on these arguments, I predict that:

*Hypothesis 3a.* The relationship between team trait PA composition and positive affective tone is moderated by emotional intelligence, such that trait PA is more strongly predictive of positive affective tone when team EI is lower.

*Hypothesis 3b.* The relationship between team trait NA composition and negative affective tone is moderated by emotional intelligence, such that trait NA is more strongly predictive of negative affective tone when team EI is lower.

**Emotional Intelligence as a Moderator of Affective Tone and Performance**

As outlined previously in Study 1, I suggest that collective emotional intelligence moderates the influence of affective tone on performance (see Figure 8). In Study 1, I found that emotional intelligence moderated the link between affective tone and performance in a complex decision-making task. Turning to a different task type, while positive affective tone has been found to increase team-level creativity (Shin, 2014), researchers have nominated creative tasks as a context in which affective tone
may require collective emotional intelligence to ensure optimal performance (e.g., Kelly & Spoor, 2006; Tsai et al., 2012). Research at the individual level supports the notion that emotional intelligence is necessary for individuals to effectively use positive affect to enhance their creativity (Parke, Seo, & Sherf, 2015).

As an extension of this, it is plausible that a team with high emotional intelligence is better at managing the influence of their team’s affect on various outcomes, such as ensuring positive affective tone does not create complacency, and will instead enhance their collective creativity (e.g., George & King, 2007; Van Kleef, 2009). Alternatively, they may require negative affective tone to serve a constructive purpose such as signalling attention or motivating the team (e.g., Martin et al., 1993; Parrott, 2002; Schwarz & Clore, 2003). Therefore:

Hypothesis 4a. Team emotional intelligence moderates the relationship between positive affective tone and creative performance, such that positive affective tone is more beneficial to performance when team emotional intelligence is higher, rather than lower.

Hypothesis 4b. Team emotional intelligence moderates the relationship between negative affective tone and creative performance, such that negative affective tone is less harmful to performance when team emotional intelligence is higher, rather than lower.

Display Rules as a Moderator of Affective Tone and Performance

Finally, as seen in Figure 2, I also argue that team-level display rules moderates the processes of affective influence (Pescosolido, 2002; Walter & Bruch, 2008). A team with display rules encouraging the open expression of negative emotion are more likely to have performance deficits from a negative affective tone (initial evidence for which was found by Cole et al., 2008 regarding nonverbal negative displays). On the other hand, teams which encourage positive emotional expression and suppress negative expression may enhance any beneficial effects of positive affective tone on performance.
(with the caveat that some research has found compliance with display rules can have a resource cost; Grandey, Rupp, & Brice, 2015). In the current study, this relationship is tested with manipulated display rules. Some teams have imposed integrative display rules based on their common prevalence in organisations; that is, a requirement to suppress negative emotional displays and increase positive emotional displays (i.e., their display is constrained, as per Brotheridge & Grandey, 2002), while other teams will be allowed autonomy in their emotional displays (i.e., encouraged to display any negative and positive emotions naturally). On this basis I predict:

_Hypothesis 5a._ Display rules moderate the relationship between positive affective tone and creative performance, such that positive affective tone is more beneficial to creative performance when display rules are imposed rather than when display is autonomous.

_Hypothesis 5b._ Display rules moderate the relationship between negative affective tone and creative performance, such that negative affective tone is more detrimental to creative performance when display is autonomous, rather than constrained by display rules.

**Method**

This study was conducted using randomly-formed student teams completing a creative brainstorming task, and involved an experimental design in which display rules were manipulated across teams. Performance was assessed via both self-rated satisfaction and an objective score. Administration was split across time points, with self-rated emotional intelligence and trait affect being assessed prior to the team task. Ethical approval for this study was obtained from the University Ethics Committee (see Appendix B).

**Participants**

The participants in this study were students completing a business course. This is a different sample from that of Study 1. Participation in the study was voluntary and
although the data collection was linked to assessment, no student was disadvantaged in their course grades as a result of non-participation in the study. Study administration was split across two data collections across the semester. At Time 1, data were collected from 296 participants. At Time 2, data were collected from 221 participants nested in 71 teams (76.21% participation of full course enrolment), with team sizes ranging from two to four members per team ($M = 2.64, SD = 0.61$).

After matching data across Time 1 and 2, the final sample comprised 124 participants nested in 47 teams. Participants’ ages ranged from 18 to 55 ($M = 22.54, SD = 4.52$), 64% were female, and 93% of participants reported having some work experience ($M = 4.17$ years, $SD = 5.37$).

**Procedure**

As data were collected from respondents at different time points, participants were asked to generate a unique identifying code, so that their responses could be matched across data collections of the study, while maintaining their anonymity. Respondents were recruited during tutorial classes, and participation in the study was part of the course activities (while still allowing students the option of not submitting their data for research purposes). During tutorials, respondents were given information about the study, as well as a link to complete the Time 1 survey online, in their own time (see Appendix B). The survey consisted of questions about emotional intelligence and trait affect. Participants had one week to complete the survey. Completion of the survey took approximately 20 minutes. Nine weeks after the Time 1 data collection, a team task was completed during tutorials. Participants first completed a survey requesting the Unique ID they generated in Time 1, as well as demographic information and current level of affect. Participants were then randomly assigned to teams by their tutor in order to complete a brainstorming exercise. Each tutorial was randomly assigned to
conditions – they either had imposed Display Rules or were given Display Autonomy. Teams in the Display Autonomy condition \( n = 26 \) teams) were instructed to display their emotions (both positive and negative) naturally during the task. Teams in the Display Rules condition \( n = 21 \) teams) were encouraged to openly express their positive emotions, and outwardly suppress any negative emotions they may feel during the upcoming task (see Appendix B, instructions adapted from Goldberg & Grandey, 2007).

Those particular display requirements were chosen because of their representativeness of commonly required workplace display rules (i.e., Hochschild, 1983), and have been successfully manipulated in prior research (Goldberg & Grandey, 2007). The brainstorming exercise was an idea-generation task, in which participants were given a scenario (regarding the starting of a new business on campus), and asked to come up with as many creative ideas as possible to solve the problem (10 minutes maximum). Instructions for the task are contained in Appendix B. Idea generation tasks are classified as creative tasks in McGrath’s (1984) task type circumplex. Time limits were strictly enforced. Immediately following the team task, participants reported their current level of affect, rated their satisfaction with their team performance, as well as the emotional display behaviours of their team as a check of the success of the display rules manipulation.

**Measures**

**Emotional intelligence.** Participants’ emotional intelligence in teams was assessed via the validated Workgroup Emotional Intelligence Profile (WEIP; Jordan & Lawrence, 2009). As this was also used in Study 1, please refer to the Chapter 4 Methods section for full details of the measure. The reliability for the full sample was \( \alpha = .80 \) for awareness of own emotions; \( \alpha = .61 \) for management of own emotions; \( \alpha = .72 \)
for awareness of others’ emotions and $\alpha = .81$ for management of others’ emotions. All items were rated on a scale from 1 (strongly disagree) to 7 (strongly agree).

**Trait affect.** Participants’ trait affect was measured via the validated PANAS (Watson et al., 1988). Scale items were identical to those used in Study 1 (see Chapter 4 for full details). Participants were asked to rate the affect items with regards to “what extent you generally feel this way, that is, how you feel on average”. Alpha reliability for the negative affect subscale was $\alpha = .85$, and for the positive subscale was $\alpha = .84$.

**State affect.** Participants’ state affect was measured both prior to and immediately following the team task, via the PANAS (Watson et al., 1988; full details on scale items in Chapter 4). Participants rated items with respect to “what extent you feel this way right now, that is, at the present moment”. The Cronbach’s alpha for the negative affect subscale at pre-task was $\alpha = .86$. The reliability of post-task negative affect was $\alpha = .86$. Pre-task positive affect had a reliability of $\alpha = .89$. Finally, post-task positive affect had a reliability of $\alpha = .91$.

**Teams’ creative performance.** Team’s objective performance on the brainstorming task was measured through the number of ideas the team produced in the ten minute time limit. Common solutions provided by the teams included bank, childcare facility, gym and others. The average number of ideas generated over the ten minutes was 31.49, ranging from 12 to 82 ideas across teams.

A self-rated measure of team performance was also included, via participants’ satisfaction with their team’s performance (e.g., “I am satisfied with the quality of my team’s brainstorming”) which was measured through five items adapted from Gevers and Peeter (2009). All items were rated on a scale from 1 (disagree strongly) to 5 (agree strongly). Alpha reliability for satisfaction with team performance was $\alpha = .94$. 

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Emotional display management. As a check of participants' compliance with the display rules manipulation, each participant reported on their team's emotional displays during the brainstorming task with six items adapted from Diefendorff and Richard (2003). Participants rated each item in relation to the display behaviours of their team (e.g., “My team displayed excitement and enthusiasm during the task”), to ensure teams could be differentiated between those which had to comply with display rules for positive displays only, and teams which were allowed to display both positive and negative emotions during the task. Items were rated on a scale from 1 (disagree strongly) to 5 (agree strongly). Alpha reliability for this measure was $\alpha = .61$.

Results

Individual-Level Results

Manipulation check. A manipulation check was performed on participants' reported emotional display management in their team. Results showed that participants in the Display Rules condition reported their teams engaging in significantly higher positive emotional displays during the task ($M = 3.97$) than participants in the Display Autonomy condition ($M = 3.65$), $F(1, 121) = 9.59, p = .001$.

Data aggregation. Post-task affect and team satisfaction measures were assessed to see whether they could meaningfully represent team-level constructs, by assessing within-group agreement via $r_w$ (using a uniform expected distribution; James et al., 1993) and ICC(1), and the reliability of aggregate scores via ICC(2) as per the recommendations of Bliwise (2000). Table 7 presents a summary of aggregation statistics for these variables.
Table 7

Summary of Aggregation Statistics for Team-Level Variables in Study 2

<table>
<thead>
<tr>
<th>Team Variables</th>
<th>Median $r_{wg}$</th>
<th>ICC(1)</th>
<th>$F$-test for ICC(1)</th>
<th>ICC(2)</th>
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<tr>
<td>Positive Affect</td>
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<td>Pre-Task</td>
<td>.86</td>
<td>0.06</td>
<td>$F(46, 123) = 1.18, p = .256$</td>
<td>0.15</td>
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<td>Post-Task</td>
<td>.84</td>
<td>0.23</td>
<td>$F(46, 123) = 1.78, p = .013$</td>
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<td>Negative Affect</td>
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<td>Pre-Task</td>
<td>.88</td>
<td>-0.03</td>
<td>$F(46, 123) = 0.92, p = .622$</td>
<td>-0.09</td>
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<td>Post-Task</td>
<td>.98</td>
<td>0.17</td>
<td>$F(46, 123) = 1.53, p = .048$</td>
<td>0.35</td>
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<tr>
<td>Satisfaction w/ Performance</td>
<td>Post-Task</td>
<td>.91</td>
<td>0.19</td>
<td>$F(46, 123) = 1.61, p = .033$</td>
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</table>

*Note. N = 47*

Post-task affect and team satisfaction exceed the .70 cutoff point for $r_{wg}$ values (Chen et al., 2004) indicating a high amount of within-group consistency in scores; the ICC(2) values indicate a medium to large amount of the variance in those variables can be attributed to group membership (and have significantly smaller variance within than between groups); and ICC(2) values suggest that team means could be reliably differentiated (e.g., Cole et al., 2008). Therefore, post-task negative affect and post-task positive affect can be aggregated to the team level, and meaningfully represent the teams’ negative affective tone and positive affective tone respectively. Likewise, the satisfaction measure displays sufficient justification for aggregation to the team level. In accordance with the conceptualisation of trait affect and emotional intelligence as additive constructs at the team level (Chan, 1998), these were aggregated via team means with no requirement for consistency within teams.

**Convergence of affect.** Hypothesis 1 suggested that teams’ affect would converge during the course of the team creative performance task, such that (1a) positive affect would converge resulting in positive affective tone, and (1b) negative affect would converge, resulting in negative affective tone. The $r_{wg}$ values suggest a substantial increase in within-group consistency for negative affect only. Paired samples $t$-tests on variance in affect further support that only negative affect converged during the task: negative affect showed a significant convergence from pre-task (average team
SD in negative affect = 0.59) to post-task (average team SD in negative affect = 0.36), t(46) = 5.81, p < .001. Positive affect showed no significant changes in consistency from pre- to post-task: t(46) = -0.33, p = .746 (average SD of positive affect = 0.63 pre-task and 0.65 post-task).

The ICC values indicate that at baseline measurement, there was no significant between-group variance to allow either positive or negative affect to be considered a true group-level construct (e.g., all participants were feeling similar levels of positivity and negativity regardless of group membership). The significant ICC(1) and ICC(2) values at post-task show that teams began to differ from other teams in their experience of positive and negative affect; while remaining rather consistent within teams. Therefore, Hypothesis 1a is partially supported. While positive affect showed no improvement in consistency over time, between-group differences did emerge, resulting in the eligibility of positive affect to be a legitimate ‘group-level’ concept, and be classified as group affective tone (as per Kozlowski & Klein, 2000). Hypothesis 1b was fully supported, as negative affect showed substantial convergence within teams, leading to the occurrence of negative affective tone at post-task measurement.

**Team-Level Analyses**

In line with recommendations from Aguinis et al. (2010), and as a consequence of the relatively low N of this study (N = 47), as well as the difficulty in detecting interactions in moderated regressions with low expected effect sizes (McClelland & Judd, 1993), I will relax significance to p < .10 for team-level hypothesis testing. In order to present results concisely, analyses with significant main effects or interactions will be presented fully in tables, while non-significant analyses will be available on request. Means, standard deviations, and intercorrelations between team-level variables are reported in Table 8.
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**Table 8**

Means, Standard Deviations, and Intercorrelations between Team-Level Variables in Study 2
As seen in Table 8, initial correlations demonstrate that neither positive affective tone nor negative affective tone had a direct relationship with creative performance, but positive affective tone was linked to greater satisfaction with performance, and negative affective tone was linked with less satisfaction with performance. Trait positive affect and trait negative affect were strongly linked with positive and negative affective tone respectively. Management of own emotions was associated with increased satisfaction with performance. Display rule condition also had a direct effect on creative performance, such that teams with display rules (i.e., encouraged to display positive emotions but suppress display of negative emotions) had worse creative performance than those with display autonomy (i.e., encouraged to freely express positive and negative emotions). While this relationship was not specifically hypothesised, it does fit with some literature on display rules which emphasise the draining of resources that can occur from having to monitor and manage emotional displays, and thus decrease time and effort given to task performance (e.g., Grandey et al., 2015). As team size was not significantly correlated with any team-level variables (and had a highly restricted range of between two to four members per team), it was not included as a control in further analyses (e.g., Becker, 2005).

**Trait affect and emotional intelligence as inputs to affective tone.** Hypothesis 2 suggested that teams’ average trait affect would predict the affective tone developed by the team. Partial correlations (controlling for display condition) demonstrate that the average trait PA of teams was significantly and positively related to the positive affective tone that developed in teams during the task \( r = .32, p = .032 \), supporting Hypothesis 2a. Likewise, the average trait NA of teams was also significantly and positively related to the negative affective tone of teams post-task \( r = .36, p = .015 \), in line with Hypothesis 2b.
Hypothesis 3a argues that the relationship between trait PA composition and positive affective tone is moderated by emotional intelligence, such that trait PA is more strongly predictive of positive affective tone when team emotional intelligence is lower rather than higher.

Four hierarchical regressions were run to test the moderation of the four facets of emotional intelligence on the link between trait PA and positive affective tone. For each analysis, teams’ display condition, pre-task affect and other emotional intelligence facets were controlled for via entry in Step 1, and the IV and moderators were mean-centered and entered in Step 2 to avoid multicollinearity (Aiken & West, 1991). The interaction term was entered in Step 3. Both awareness of own emotions (see Table 9) and management of others’ emotions (see Table 10) moderated the relationship between trait PA and positive affective tone.

Table 9
Hierarchical Regression of Team Trait Positive Affect & Awareness of Own Emotions on Positive Affective Tone

<table>
<thead>
<tr>
<th>Step</th>
<th>Positive Affective Tone</th>
<th>$\beta$</th>
<th>$AR^2$</th>
<th>$AF$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td>.73***</td>
<td>.52</td>
<td>8.98***</td>
</tr>
<tr>
<td></td>
<td>Team Pre-Task Positive Affect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Condition</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Management of Own Emotions</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of Others’ Emotions</td>
<td>-.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Management of Others’ Emotions</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.01</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Team Trait PA</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of Own Emotions</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.08</td>
<td>7.13**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Team Trait PA x Awareness of Own Emotions</td>
<td>-.28**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$ at Step 3</td>
<td></td>
<td>.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall $F$ at Step 3</td>
<td></td>
<td></td>
<td>7.20***</td>
<td></td>
</tr>
</tbody>
</table>

$N = 47$

$p < .10$, **$p < .05$, ***$p < .001$
The significant interaction of team trait PA and awareness of own emotions on positive affective tone was followed up with a simple slopes analysis (see Figure 9).

![Graph showing interaction of team trait PA and awareness of own emotions on positive affective tone.]

\[ \text{Low Awareness of Own Emotions} \]
\[ \text{High Awareness of Own Emotions} \]

**Figure 9.** Interaction of team trait positive affect and awareness of own emotions on positive affective tone.

Simple slopes analysis revealed that trait PA did not significantly predict positive affective tone when awareness of own emotions was high ($\beta = .30, p = .154$), but trait PA was significantly and positively related to the positive affective tone of the team when own awareness was low ($\beta = .40, p = .035$), providing support to Hypothesis 3a. These results suggest that when a team has low awareness of their own emotions, their positive affective tone is primarily derived from their trait positive affect composition. However, when a team has higher awareness of their own emotions, trait positive affect composition no longer predicts the group affective tone that develops in the team.
Management of others’ emotions also moderated the link between trait PA and positive affective tone (see Table 10 below).

Table 10

Hierarchical Regression of Team Trait Positive Affect & Management of Others’ Emotions on Positive Affective Tone

<table>
<thead>
<tr>
<th>Step</th>
<th>Positive Affective Tone</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>( \Delta R^2 )</td>
<td>( \Delta F )</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Pre-Task Positive Affect</td>
<td>.73***</td>
<td>.52</td>
<td>8.90***</td>
</tr>
<tr>
<td>Display Condition</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others’ Emotions</td>
<td>-.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.01</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>Team Trait PA</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others’ Emotions</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.12</td>
<td>13.32**</td>
<td></td>
</tr>
<tr>
<td>Team Trait PA x Management of Others’ Emotions</td>
<td>-.41**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total ( R^2 ) at Step 3</td>
<td>.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall ( F ) at Step 3</td>
<td></td>
<td>8.84***</td>
<td></td>
</tr>
</tbody>
</table>

\( N = 47 \)

\( * p < .10, ** p < .05, *** p < .001 \)

As seen in Table 10, management of others’ emotions also interacted with team trait PA in predicting positive affective tone. Simple slopes analyses revealed that trait PA was negatively related to positive affective tone when management of others’ emotions was high (\( \beta = -.34, p = .070 \)), but trait PA was significantly and positively related to the positive affective tone of the team (\( \beta = .44, p = .010 \)) when management of others’ emotions was low (see Figure 10).
Figure 10. Interaction of team trait positive affect and management of others’ emotions on positive affective tone.

In line with predictions, positive affective tone is positively linked to the trait PA composition of the team when the team is low on certain facets of emotional intelligence. Therefore, Hypothesis 3a was partly supported, as the relationship of trait PA composition with positive affective tone was moderated by some factors of emotional intelligence; such that trait PA was more strongly predictive of positive affective tone when i) teams’ awareness of own emotions was lower and ii) teams’ management of others’ emotions was lower.

Hypothesis 3b suggests that the relationship of trait NA composition with negative affective tone is moderated by emotional intelligence, such that trait NA is more strongly predictive of negative affective tone when team emotional intelligence is lower. Hypothesis 3b was not supported, as none of the facets of emotional intelligence moderated that link (though trait NA did have a significant direct relationship with
negative affective tone; via partial correlation controlling for display condition: $r = .36$, $p = .015$, as presented in Hypothesis 2).

**Emotional intelligence as a moderator of affective tone and performance.** I further proposed that, in line with the results of Study 1, team emotional intelligence moderates the relationship between positive affective tone and performance, such that positive affective tone is more beneficial to performance when team emotional intelligence is higher, rather than lower (Hypothesis 4a). Hierarchical regressions were run to test the hypotheses for objective performance (i.e., team creative performance) and subjective performance (i.e., teams’ satisfaction with their performance). The control variables (pre-task affect, other emotional intelligence facets, and the other performance measure, as well as display condition) were entered in Step 1, and the focal emotional intelligence facet and affective tone was entered in the second step. The interaction term was entered in Step 3. Similar to the results of Study 1, a significant interaction was found for positive affective tone and management of others’ emotions in the prediction of creative team performance and subjective satisfaction with performance (see Table 11).
Table 11
**Hierarchical Regression of Positive Affective Tone & Management of Others' Emotions on Teams' Creative Performance**

<table>
<thead>
<tr>
<th></th>
<th>Creative Team Performance</th>
<th>Satisfaction with Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Pre-Task Positive Affect</td>
<td>.10</td>
<td>.27</td>
</tr>
<tr>
<td>Display Condition</td>
<td>-.27**</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with Performance</td>
<td>.41**</td>
<td></td>
</tr>
<tr>
<td>Creative Team Performance</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>-.09</td>
<td></td>
</tr>
<tr>
<td>Awareness of Others' Emotions</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affective Tone</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td>Management of Others' Emotions</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affective Tone x Management of Others' Emotions</td>
<td>.37**</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>.35</td>
<td></td>
</tr>
<tr>
<td><strong>Total R² at Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall F at Step 3</strong></td>
<td>2.26**</td>
<td></td>
</tr>
</tbody>
</table>

\( N = 47 \)

\( ^* p < .10, \ \ ^{**} p < .05, \ \ ^{***} p < .001 \)

As can be seen in Table 11, positive affective tone had a positive main effect on satisfaction with performance, but not creative performance. However, the interaction of positive affective tone and management of others’ emotions was significant for both creative performance and satisfaction with performance.

In terms of creative performance, simple slopes analysis revealed that positive affective tone was a significant and positive predictor of performance when management of others’ emotions was high (\( \beta = .53, p = .038 \)), whereas positive affective tone was not significantly related to performance (\( \beta = -.12, p = .623 \)) when management of others’ emotions was low (see Figure 11).
Figure 11. Interaction of positive affective tone and management of other’s emotions on teams' creative performance (higher scores indicate better performance).

For satisfaction with performance (see Figure 12), positive affective tone was not a significant predictor of satisfaction when management of others’ emotions was high ($\beta = .15, p = .553$), whereas positive affective tone was significantly positively related to satisfaction ($\beta = .67, p = .004$) when management of others’ emotions was low (see Figure 12).
Figure 12. The interaction of positive affective tone and management of others’ emotions on teams’ satisfaction with performance.

To sum up the results for positive affective tone, Figure 11 shows that when a team has a high ability to manage others’ emotions, having a higher positive affective tone improves performance; however, for teams with lower ability to manage others’ emotions, positive affective tone is not predictive of team performance. Figure 12 shows a different result for satisfaction with performance, as teams with low management of others’ emotions showed increasing satisfaction with their performance as their positive affective tone increased (even though their actual performance didn’t increase with more positive affective tone, as demonstrated in Figure 11). Therefore, there was partial support for Hypothesis 4a, in that only management of others’ emotions was a significant moderator of the relationship between positive affective tone and team performance measures (consistent with the results of Study 1).

Moving to the relationship between negative affective tone and performance, Hypothesis 4b predicted that team emotional intelligence moderates the relationship between negative affective tone and performance, such that negative affective tone is
less harmful to performance when team emotional intelligence is higher, rather than lower. Only a team’s awareness of own emotions was found to moderate the relationship between negative affective tone and a performance measure (creative performance only, no results were found for satisfaction with performance).

Table 12
Hierarchical Regression of Negative Affective Tone & Awareness of Own Emotions on Teams’ Creative Performance

<table>
<thead>
<tr>
<th></th>
<th>Creative Team Performance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>ΔR²</td>
<td>ΔF</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Pre-Task Negative Affect</td>
<td>-.06</td>
<td>.26</td>
<td>2.35**</td>
</tr>
<tr>
<td>Display Condition</td>
<td>-.27*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with Performance</td>
<td>.39**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Own Emotions</td>
<td>-.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Others’ Emotions</td>
<td>-.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Others’ Emotions</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.03</td>
<td>0.65</td>
</tr>
<tr>
<td>Negative Affective Tone</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of Own Emotions</td>
<td>-.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.06</td>
<td>3.54*</td>
</tr>
<tr>
<td>Negative Affective Tone x Awareness of Own Emotions</td>
<td>.26*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total R² at Step 3</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F at Step 3</td>
<td>2.19**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 47
*p < .10, **p < .05, ***p < .001

Simple slopes analysis revealed that negative affective tone was a positive predictor of performance (though not reaching significance) when own awareness was high (β = .39, p = .115). Negative affective tone was not significantly related to performance when own awareness was low (β = -.05, p = .847; see Figure 13).
Figure 13. The interaction of negative affective tone and awareness of own emotions on teams’ creative performance (higher scores indicate better performance)

While neither slope reached significance, an examination of Figure 13 suggests that when a team has high negative affective tone, there’s no impact of awareness of own emotions on performance (i.e., at such highly negative levels, it is easily perceivable to all, regardless of own awareness, and thus is equally detrimental to performance). However, when a team has lower negative affective tone, higher awareness of own emotions is actually harmful to team performance, in comparison to lower awareness of own emotions (i.e., when teams are at lower negativity, teams with high own awareness are more likely to recognise and have performance deficits of subtle negativity).

This result is contrary to Hypothesis 4b, which predicted that negative affective tone would be less harmful to performance when emotional intelligence was higher. My analysis suggests that when negative affective tone is low, having a higher awareness of
own emotions within a team is actually harmful to performance, in contrast to having lower awareness of own emotions.

**Display rules as a moderator of affective tone and performance.** Hypothesis 5 addressed the role of display rules in the relationship between affective tone and performance indicators. More specifically, Hypothesis 5a suggested that display rules moderate the relationship between positive affective tone and performance, such that positive affective tone is more beneficial to performance when display is constrained (i.e., when teams are given instructions to express positive, but not negative emotions: Display Rules condition) rather than autonomous (i.e., teams are given instructions to freely express positive and negative emotions: Display Autonomy condition). The results of a hierarchical regression of positive affective tone and display rules on team satisfaction and team performance are given in Table 13.

Table 13

*Hierarchical Regression Results for Positive Affective Tone and Display Rules on Teams’ Satisfaction with Performance and Creative Performance*

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction w/Performance</th>
<th>Team Creative Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Pre-Task Positive Affect</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td>Satisfaction w/Performance</td>
<td>-.</td>
<td></td>
</tr>
<tr>
<td>Creative Performance</td>
<td>.42**</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.11</td>
<td>3.14*</td>
</tr>
<tr>
<td>Positive Affective Tone</td>
<td>.46**</td>
<td></td>
</tr>
<tr>
<td>Display Rules</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.00</td>
<td>0.12</td>
</tr>
<tr>
<td>Positive Affective Tone x Display Rules</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>Total R² at Step 3</td>
<td>.28</td>
<td></td>
</tr>
<tr>
<td>Overall F at Step 3</td>
<td>3.26**</td>
<td></td>
</tr>
</tbody>
</table>

* N = 47

* p < .10, ** p < .05, *** p < .001
Based on Table 13, Hypothesis 5a was not supported, as display rules didn’t moderate the impact of positive affective tone on either team satisfaction or team performance. However, as mentioned previously, display rules did significantly predict creative performance, such that imposing display rules (encouraging teams to express positive emotions, but suppress negative emotional displays) was detrimental to creative performance.

Hypothesis 5b suggested that display rules moderate the relationship between negative affective tone and satisfaction/performance, such that negative affective tone is more detrimental to performance when display is autonomous rather than constrained. The results of these analyses are given in Table 14.

Table 14
Hierarchical Regression Results for Negative Affective Tone and Display Rules on Teams’ Satisfaction with Performance and Creative Performance

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Satisfaction w/Performance</th>
<th>Team Creative Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td>Team Pre-Task Negative Affect</td>
<td>-.12</td>
<td>.19</td>
</tr>
<tr>
<td>Satisfaction w/Performance</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Creative Performance</td>
<td>.39**</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Affective Tone</td>
<td>-.27</td>
<td>.04</td>
</tr>
<tr>
<td>Display Rules</td>
<td>-.11</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Affective Tone x Display Rules</td>
<td>.35**</td>
<td>.12</td>
</tr>
<tr>
<td>Total R² at Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F at Step 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 47
*p < .10, **p < .05, ***p < .001

A significant interaction was found between negative affective tone and display rules in the prediction of team satisfaction, but not team performance. The significant interaction was then followed up with simple slopes analyses for both conditions of the
moderator (Display Rules [High] vs. Display Autonomy [Low]). The simple slopes tests revealed that negative affective tone was associated with decreased satisfaction with performance only in the display autonomy condition ($\beta = -.62, p = .011$), but negative affective tone was not significantly related to satisfaction in the display rules condition ($\beta = .22, p = .400$). That is, negative affective tone does not decrease teams’ satisfaction with their performance when a team has imposed display rules encouraging the expression of positive emotions and the suppression of negative emotional displays. However, increasing negative affective tone is associated with decreased satisfaction when a team has display autonomy (i.e., are encouraged to express both positive and negative emotions freely). The graph of the interaction is plotted in Figure 14.

![Graph](image)

**Figure 14.** The interaction of display rules and negative affective tone on satisfaction with performance.

Therefore, Hypothesis 5b was partially supported, as display rules did moderate the relationship between negative affective tone and satisfaction with performance in
the expected direction, but did not moderate the relationship between negative affective tone and objectively-rated performance as expected.

Discussion

The aims of this study were to examine the formation of group affective tone and the consequences of affective tone on teams' satisfaction with performance and creative performance, as well as the impact of moderating variables including team emotional intelligence and formally imposed display rules.

Convergence of affect. Consistent with predictions, the randomly formed teams developed positive affective tone and negative affective tone over the course of the 15 minute creative task. This result supports the findings of Study 1, in which existing teams also developed affective tones over the course of a short decision-making task, as well as previous literature on affective tone in student teams (e.g., Sy et al., 2005).

Trait affect and emotional intelligence as inputs to affective tone. Previous research has highlighted the importance of teams’ personality composition as an input factor in the development of group affective tone, such that higher trait PA leads to higher positive affective tone, and higher trait NA leads to higher negative affective tone (George, 1990). The current study found that while teams’ trait affect positively predicted their group affective tone, team emotional intelligence was a crucial factor in whether the trait PA composition of the team impacted on their resulting positive affective tone. More specifically, teams’ average trait PA composition was only found to affect positive affective tone when teams had low awareness of own emotions, and low management of others’ emotions. That is, when teams are not good at recognising their own emotions (e.g., awareness of pride) or are not good at managing others’
emotions (e.g., unable to make others enthusiastic), the development of group affective tone emerges from trait affect. On the other hand, if a team has good moment-to-moment recognition of the emotions they are experiencing, and are able to influence the emotions of others, group affective tone is derived from their interactions and experiences in the team, rather than their average affective trait composition.

**Emotional intelligence as a moderator of affective tone and performance.**

Although previous research has found that positive affective tone is generally helpful to team performance, and negative affective tone is generally harmful to team performance (e.g., George, 1995; Hmielecki et al., 2012), the results of my study suggest this is not always the case. I found that positive affective tone was positively linked with performance only when team had a high ability to manage others’ emotions. When a team had low management of others’ emotions, positive affective tone was not predictive of team performance. This result is in line with the idea that positive affect needs to be managed correctly in order to be beneficial to a team’s performance. George and King (2007) especially highlight the possible downsides of high positive affective tone in tasks requiring creativity, such as the brainstorming task used in the current study. If a team is not able to manage their positive emotions effectively, the positive affect may lead them to be complacent about their task (e.g., Martin et al., 1993; Schwarz & Clore, 2003). These results are comparable to my findings in Study I utilising a decision-making task, in which management of others’ emotions was also a moderator of the link between affective tone and performance.

In terms of negative affective tone, my study found that a teams’ awareness of own emotions moderated the link between negative affective tone and team performance. Contrary to predictions, a high awareness of own emotions was actually detrimental to team performance when there was a low negative team affective tone.
That is, when teams have a highly negative affective tone, it doesn’t matter to performance whether the team is high or low on awareness of own emotions (i.e., when a team is that highly negative, it is easily recognised and affects performance). However, when teams have a lower negative affective tone, greater awareness of own emotions is detrimental to performance (i.e., they are more aware of the subtle negative emotions in their team, and are more likely to let it affect their performance). This result, while counter to my predictions, fits with prior research by Elfenbein et al. (2007) who found that teams with greater negative emotion recognition accuracy displayed worse performance than teams with less accuracy in recognising negative emotions. The authors suggest that their sample of young adults “may not have had the skills, autonomy, and flexibility to change their behavior based on colleagues’ negative moods, and so such information may have served only as an aversive backdrop to the team’s work” (Elfenbein et al., 2007, p. 113). Likewise, in the current study, I propose that the awareness of emotions may have been detrimental due to the relatively young sample (mean age 22) not having developed an accompanying ability to manage their emotions, which can emerge with life experience (Gross et al., 1997). Thus the awareness of negative affect had primarily harmful effects. Additionally, the relatively short nature of the task (around 15 minutes) may not have given sufficient time for team members who recognised their own negative emotions to be able to manage them constructively.

**Display rules as a moderator of affective tone and performance.** Finally, this study examined the impact of display rules on the consequences of affective tone. First, I found that imposing display rules was significantly detrimental to creative performance. While this result was not predicted, it is supported by some prior literature on the downsides of display rules, including the resource-depletion argument, in which
having to comply with display rules takes time and effort away from working on task goals (e.g., Grandey et al., 2015). While display rules were harmful to creative performance, I found that the presence of display rules moderated the relationship between negative affective tone and teams’ satisfaction with performance in a more helpful way. That is, when teams had imposed display rules (the requirement to avoid expressing negative emotions, and encouraged to express positive emotions), negative affective tone was not detrimental to their team satisfaction. On the other hand, when teams were not constrained in their emotional displays, negative affective tone was related to worse satisfaction with their team’s performance. However, these effects did not replicate in terms of objectively rated performance, thus, while constraining negative displays may cause participants to feel as if their team has done better, this did not translate into actual performance benefits.

Previously, Cole et al. (2008) found that negative affective tone was more detrimental to task performance when teams had free expression of negative affect, which was the basis of my prediction that display rules would help buffer against performance deficits from negative affective tone. My results are contrary to this. However, my study used formally imposed display rules (i.e., instructions from facilitator for a short task) whereas Cole et al. (2008) measured naturally occurring negative emotional displays (i.e., nonverbal negative expressivity) within teams. Therefore, teams in Cole et al.’s study are presumably comfortable with, and had a role in forming their emotional display norms; and may need to expend less effort to comply with them. In my short-term task, participants may have needed to engage in more effortful surface-acting to comply with display rule requirements, thus leading to a net harmful effect of display rules (Goldberg & Grandey, 2007; Grandey et al., 2015).
Summary. The results of Study 2 demonstrate the robust convergence of affect (in randomly formed teams, as an extension to the longer term teams tested in Study 1); and support the idea that collective emotional intelligence will help determine the importance of trait affective composition on affective tone. My findings also support the idea that emotional intelligence sometimes moderates the impact of affective tone and creative performance (in line with the findings of Study 1 regarding decision-making performance) and further demonstrates that display rules do the same, in the case of negative affective tone and satisfaction with performance only. In the next Chapter, I outline Study 3, which provides a deeper insight to these phenomena, by assessing the convergence of specific emotions within teams. I also examine the impact of emotional tones on team conflict and team decision-making performance, and the possible moderating role of collective emotional intelligence.
Chapter Aims

The aim of this study is to extend beyond global measures of affective tone (i.e., positive affect and negative affect as assessed in Study 1 and 2) by assessing the formation and consequences of discrete emotional states at the team level (RQ1). I also examine the interaction of emotional tones with team emotional intelligence in the prediction of team conflict (RQ2) and team performance (RQ3). Finally, to provide supporting evidence for Study 1, I again consider the interaction of team emotional intelligence and team conflict on performance (RQ4).

Figure 15. Variables addressed in Study 3.
Hypothesis Development

Convergence of Discrete Emotions

Team-level affective experiences have generally been examined in terms of the broad dimensions of positive affect and negative affect. Numerous studies have demonstrated that teams converge in the broad global dimensions of positive and negative affect (e.g., Cole et al., 2008; George, 1990; Sy et al., 2005). However, there have been calls for more attention to discrete affective states at the team level (e.g., Barsade & Gibson, 2012). At the individual level, specific affective states have been found to have different antecedents (e.g., Fritz et al., 2010) and to differentially predict workplace behaviours (e.g., Lee & Allen, 2002).

As yet, there is little research about teams’ convergence of more specific discrete emotions such as joy, fear and hostility. These emotions vary in terms of their salience/visibility to others, vary in their likelihood of being relevant in a typical team situation, and are likely to have different impacts on the way the team functions in terms of their conflict experienced, and their overall performance as a team (Barsade & Gibson, 2012).

In line with the hierarchical model of affect (Watson & Clark, 1992, 1994), discrete emotions are considered to be nested within the broad umbrella of positive affect and negative affect. Accordingly, Watson and Clark (1994) have expanded the PANAS to measure discrete affective experiences via three positive emotions (joviality, self-assurance and attentiveness), and via four basic negative emotions (fear, hostility, guilt, and sadness). Watson and Clark (1992, 1994) provide evidence of the validity of separating positive affect and negative affect into its discrete emotional components, and more recent research has further supported the validity and importance of
delineation of positive affect into its discrete emotional components (Egloff, Schmukle, Burns, Kohlmann, & Hock, 2003; Lee & Allen, 2002).

In this study, I focus on the positive emotions of joviality, self-assurance and attentiveness, and the negative emotions of fear and anger. Guilt and sadness were not included in the current study because they are assumed to be less relevant to participants' experiences within the short-term task completed as part of this study.

The positive emotion of happiness has consistently been found to be contagious in dyadic settings (e.g., Halberstadt et al., 2009; Hess & Bourgeois, 2010; Korb et al., 2010; Van der Schalk et al., 2011; Varcin et al., 2010). In contrast, self-assurance and attentiveness may be less visible and less easily transferred within a team context (Hatfield et al., 1994). Unlike happiness/joviality, these affective states have not been examined in isolation in dyadic contagion studies, so their potential for convergence is less established. Happiness or joviality has been classified as a high activation emotion (see the circumplex model; Russell, 1980), and as such I assume this emotion to be easily visible and easily contagious within a team context. On the other hand, self-assurance (characterised by feelings of pride and strength) and attentiveness (characterised by feeling alert, attentive, and determined) may be less easily identifiable to others in the team context, and thus may be less likely to converge towards homogeneity. This notion is partially supported by research by Bartel and Saavedra (2000) who found that pleasant and unpleasant moods with low arousal (e.g., contentment for pleasant, and sluggishness for unpleasant) were harder for an observer to identify, and displayed weaker convergence within a team, in comparison to moods with higher arousal (e.g., excitement for pleasant, and distress for unpleasant). Despite this, convergence still occurred for all mood categories. Likewise, Barsade (2002) found contagion occurred in a team context regardless of the energy level of the emotion

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spread by a confederate, for both positive emotions (i.e., both cheerful enthusiasm and serene warmth were contagious); and for negative emotions (i.e., both hostile irritability and depressed sluggishness spread throughout the team). Based on these results, and supporting evidence from dyadic research, I predict that:

*Hypothesis 1.* Teams will converge in their experience of discrete positive emotions during the task, leading to (a) Jovial Tone, (b) Self-Assured Tone and (c) Attentive Tone.

In terms of negative emotions, various studies have demonstrated the contagious nature of both fear and anger (e.g., Bourgeois & Hess, 2008; Kelly, Iannone, & McCarty, 2016; Van der Schalk et al., 2011; Varcin et al., 2010). In a team context, Delvaux et al. (2015) found that over time, a team’s experience of anger did tend to converge. Other research has found that fearful tones are consistent within specific sections of an organisation, and can differ between sections of an organisation (Ashkanasy & Nicholson, 2003). Therefore, I predict:

*Hypothesis 2.* Teams will converge in their experience of discrete negative emotional states during the task, leading to (a) Fearful Tone and (b) Hostile Tone.

**Emotional Intelligence as a Moderator of Hostile Tone and Relationship Conflict**

It is commonly suggested that negative affective tone will be detrimental to the dynamics within the team, in terms of coordination, cooperation, and conflict (George, 1990; Sy et al., 2005). This assertion is supported by research into conflict (e.g., Jehn et al., 2008). Relationship conflict is generally seen as the more ‘emotional’ type of conflict, as it can contribute to negative emotionality in the team such as decreased trust and respect (Jehn et al., 2008), and decreased team satisfaction (De Dreu & Weingart, 2003). Task conflict has been conceptualised as more cognitive in nature (Yang &
Mossholder, 2004), although both task and relationship conflict can involve emotional aspects (Jehn & Bendersky, 2003). Research examining the dimensions of conflict separately has generally found that teams with a more highly negative affective tone to be more likely to experience greater relationship (but not task) conflicts within the team (e.g., Sessa, 1996). As previously stated, in the current study I seek to further delineate negative affect into two discrete emotions: fear and hostility (Watson & Clark, 1992, 1994). Hostility is commonly considered as the primary companion to relationship conflict, which is generally characterised as tension and animosity between team members (Jehn, 1995). On this basis, I predict that in terms of the discrete negative states, the hostile tone of a team (that is, a team whose members report high levels of anger, hostility and irritation) is positively linked to the experience of relationship conflict.

In line with previous studies, the emotional intelligence of the team is expected to moderate the link between hostile tone and relationship conflict. While in Study 1 and 2 I used self-rated emotional intelligence measures, in consideration of the weaknesses of using self-ratings (e.g., requires cognition and memory; Dasborough, Sinclair, Bennett, & Tombs, 2008), I will now use an ability test to examine replication of my previous results with different methods. In the current study, emotional intelligence is assessed using a performance-based measure (a situational judgement test) which assesses individuals’ emotional management and emotional understanding (STEM & STEU; MacCann & Roberts, 2008a, 2008b). I suggest that teams with higher collective emotional intelligence are better at managing the detrimental impacts of collective hostility, and ensuring that the presence of a hostile tone is less likely to descend into personal disagreements among its members.

Hypothesis 3. Team emotional intelligence moderates the relationship between hostile tone and relationship conflict, such that hostile tone is less strongly
related to relationship conflict when emotional intelligence is higher, compared to lower.

**Emotional Intelligence as a Moderator of Emotional Tones and Performance**

Teams’ positive affective tone has largely been found to be beneficial to team’s performance in past literature (e.g., Barsade, 2002; George, 1995). However, more recent theories suggest the relationship between positive affective tone and performance is contingent on a number of factors, such as task type (e.g., George & King, 2007). Similarly, my results from Study 1 and Study 2 have indicated that the impact of positive affective tone on performance is conditional, that is, whether positive affect is helpful in teams depends on the emotional abilities of its team members. This finding was present in both a survival-based decision-making task and a brainstorming creative task. In the current study, I similarly predict that a jovial tone and self-assured tone may only be helpful to workplace-based decision-making performance when teams are high in emotional intelligence, that is, have a good understanding of emotions and how to manage emotions effectively. This may be necessary to ensure that highly jovial, or highly self-assured teams maintain focus on the task at hand, and do not allow their joviality to compromise or distract from their decision-making (Schwarz & Clore, 2003), or experience complacency about the task due to high self-assurance (e.g., Martin et al., 1993). On the other hand, theories of the possible downsides of positive affect do not apply to attentiveness, and I suggest that this will be positively linked with team decision-making performance, with no moderating effect of emotional intelligence needed to buffer against downsides of the experienced affect. Therefore, I predict:

*Hypothesis 4a.* Attentive tone is positively linked with decision-making performance.
Hypothesis 4b. Team emotional intelligence moderates the relationship between jovial tone and decision-making performance, such that jovial tone is more beneficial to performance when team emotional intelligence is higher, rather than lower.

Hypothesis 4c. Team emotional intelligence moderates the relationship between self-assured tone and decision-making performance, such that self-assured tone is more beneficial to performance when team emotional intelligence is higher, rather than lower.

Similarly, while the detrimental effects of negative affective states (e.g., fear and hostility) are not generally examined separately, the collective experience of negative affect has generally been linked to less desirable outcomes (e.g., Cole et al., 2008), and I argue that collective emotional intelligence may ameliorate these negative effects.

Teams with more emotionally intelligent members may be more able to focus on the task at hand despite the presence of anxiety or nerves (in the case of a fearful affective tone), and be less vulnerable to a hostile tone and its potential impact on team decision-making (e.g., as a distraction, or as a constraint on all members feeling free to share their opinions and ideas, which is crucial to complex decision-making tasks). Thus:

Hypothesis 5a. Team emotional intelligence moderates the relationship between fearful tone and performance, such that fearful tone is less harmful to performance when team emotional intelligence is higher, rather than lower.

Hypothesis 5b. Team emotional intelligence moderates the relationship between hostile tone and performance, such that hostile tone is less harmful to performance when team emotional intelligence is higher, rather than lower.

Emotional Intelligence as a Moderator of Conflict and Performance

In line with the contingency perspective on conflict (e.g., Jehn & Bendersky, 2003) and in line with supporting results from Study 1 (for task conflict), I expect that
the functionality of task and relationship conflict on team performance will be contingent on the emotional intelligence of the team.

I argue that a team with high emotional intelligence is better able to utilise task conflict as a productive force for performance improvement. That is, team members are better able to deal with each other’s different viewpoints and potential criticisms without taking it personally, while maintaining the functional benefits of task conflict. This is consistent with past research by Sessa (1996), who found that team members who had greater emotional sensitivity and perspective taking (i.e., ability to see and understand others’ emotional and cognitive perspectives) were less likely to see conflict as personal, and rather as a product of the task at hand.

In terms of relationship conflict, while I predict that it will be detrimental overall to teams’ performance, I also contend that emotional intelligence will weaken the negative effects of relationship conflict. A team which is experiencing disagreements between members and personality clashes may be distracted from decision-making. Although the distractions commensurate with relationship conflict can globally reduce the effectiveness of teams decision-making, teams with high collective emotional intelligence are more easily and effectively able to resolve these personal issues (e.g., Jordan & Troth, 2002, 2004). This is because they are able to more effectively manage and to keep in check the negative emotions which may arise from such conflicts, thereby reducing the toll that they will take on performance. Therefore I predict that:

*Hypothesis 6.* Team emotional intelligence moderates the positive relationship between task conflict and decision-making performance, such that task conflict is more beneficial to performance when team emotional intelligence is higher, rather than lower.
Hypothesis 7. Team emotional intelligence moderates the negative relationship between relationship conflict and decision-making performance, such that relationship conflict is less detrimental to performance when team emotional intelligence is higher, rather than lower.

Method

To test my hypotheses, I used a split administration design, where emotional intelligence was assessed via an ability test at Time 1. I then had student teams complete a workplace-based decision-making task with objective performance scores at Time 2. Ethical approval for this study was obtained from the University Ethics Committee (see Appendix C).

Participants

The participants in this study consisted of students completing a business course (total enrolment of 282 students) using a different sample from Studies 1 and 2. At Time 1, data were collected from 248 participants via an online survey (response rate of 87.94% of full class enrolment). At Time 2, data were collected during a class tutorial from 220 participants nested in 62 teams (78.01% of full class enrolment), with team sizes ranging from three to six members per team \((M = 3.53, SD = 0.90)\). The final matched sample for hypothesis testing (which required both time points) comprised 142 participants nested in 48 teams \((M = 2.96, SD = 0.74)\). Across the full sample, participants’ ages ranged from 18 to 49 \((M = 22.72, SD = 4.25)\), 57% were female, and participants had an average of 3.55 years work experience \((SD = 4.17)\), with 85% of the sample reporting having some paid work experience.
Procedure

As data were collected from participants at different time points, participants were asked to generate a unique identifying code, so that their responses could be matched across Time 1 and 2 of the study, while maintaining their anonymity. Participants were recruited during classes, and participation in the study was part of course requirements (while still allowing students the option of not submitting their data for research purposes). Participants received information about the study in class, as well as being provided with a web link to complete the Time 1 survey online, in their own time. Participants had one week to complete the survey, which assessed their emotional intelligence. Completion of the survey took approximately 25 minutes.

A team task was completed during class two weeks after the first survey (Time 2 data collection). Participants recorded demographic information and their level of affect before the task (baseline affect). Participants were then asked to complete a decision-making task that involved a hypothetical situation where they ranked in the order a list of five employees who were to be made redundant (task adapted from Harvey & Brown, 1996). Participants were given a variety of information on the employees, including factors relating to their work performance (working output, loyalty, potential for promotion), as well as personal information (age, marital status, number of children). Participants had to sort through this information and decide which were the most important aspects to take into account when deciding the order that the employees should be laid off. As this involves making decisions with no readily apparent correct answer, McGrath’s (1984) circumplex model classifies it as a decision-making task.

Objective performance measurement for this task is based on expert ratings (given by organisational vice presidents), who favoured work performance over personal information in making their decision. This task has been used as a measure of
work-based performance in prior literature (e.g., Day & Carroll, 2004). Participants ranked the employees individually (five minutes maximum), then they were asked to discuss their rankings as a team, and come to a consensus on their team’s ranking (ten minutes maximum). Afterwards, participants individually completed surveys assessing affect experienced during the team task (post-task affect), as well as the conflict experienced in their team. Teams were made up of students who had voluntarily formed into teams at the start of the semester, in order to create and present a fifteen minute talk to their classes. Therefore, they were already familiar with their team members at the time of the task (between one to two weeks since team formation).

Measures

**Emotional intelligence.** Participants’ emotional intelligence was measured via short forms of the Situational Test of Emotion Management (STEM) and Situational Test of Emotional Understanding (STEU; MacCann & Roberts, 2008a, 2008b). The STEM consists of 20 items in which participants read a short description of a situation requiring emotional management, and must choose the most effective action in response to that situation from four response options. Scores for each item are based on the proportion of experts selecting each response option (e.g., if 100% of experts select “a” as the best option, it would equal 1, and options b to d would equal zero; if 50% of experts selected “a” it would be worth 0.50 and so on). Experts were trained psychologists, life coaches with psychology or counselling backgrounds, and members of an emotional intelligence consortium. The alpha reliability of the STEM was $\alpha = .73$. The STEU consists of 25 items in which participants read a short description of a situation eliciting an emotional response, and must choose the emotional response that is most likely to be elicited in that situation from five response options. Scoring for the STEU is based on Roseman’s (2001) appraisal theory, thus for each item there is one
correct alternative (scored as 1) and four incorrect alternatives (scored as 0). The alpha reliability of the STEU was $\alpha = .76$. Total scores for the STEM and STEU are calculated via the mean of item scores, with higher scores indicating higher emotional intelligence.

**State emotions.** Discrete emotions were measured via a shortened version of the PANAS-X (Watson & Clark, 1994), which breaks positive and negative affect into discrete emotional states. These affective experiences were captured both prior to the team task (affect) and after the team task (post-task affect). At baseline measurement, participants were asked to rate each of the states with respect to “how you are feeling right now”, while at post-task measurement, participants were asked to rate each state based on “how they felt during the group exercise”. Each item was rated on a scale from 1 (not at all) to 5 (extremely). Based on Watson and Clark’s (1994) delineation of various affective states, fear was measured with four items (“afraid”, “scared”, “nervous”, “jittery”; $\alpha = .89$ at baseline and .91 post-task), and hostility with six items (“angry”, “hostile”, “irritable”, “scornful”, “disgusted”, “loathing”, $\alpha = .82$ at baseline and .85 post-task). Basic positive emotions scales were also assessed including joviality with two items (“excited”, “enthusiastic”; $\alpha = .78$ at baseline and .76 post-task), self-assurance via two items (“proud”, “strong”; $\alpha = .71$ at baseline and .74 post-task) and attentiveness via three items (“alert”, “attentive”, “determined”; $\alpha = .77$ at baseline and .73 post-task).

**Conflict.** Individual team members’ perception of conflict during the team task was measured using the Intragroup Conflict scale ( Jehn, 1995). Four items assessed relationship conflict (e.g., “how much were personality conflicts evident in your group?"; $\alpha = .83$) and four items measured task conflict (e.g., “how frequently were
there conflicts about ideas in your group?"; $\alpha = .81$). Items are measured on a scale from 1 (none) to 5 (a lot).

**Performance.** Both Individual and Team Task Scores were calculated as the sum of absolute differences between the individuals’ (or teams’) score and experts’ scores. Lower scores indicate better performance on the ranking task, with 0 indicating perfect agreement with experts. The mean of Individuals’ Task scores was 3.29 ($SD = 2.79$), and for Team Task Scores the mean was 2.30 ($SD = 2.22$).

**Results**

**Individual-Level Results**

**Confirmatory factor analyses for discrete emotions.** As the delineation of affect into discrete affective states has been relatively less studied, I conducted confirmatory factor analyses in AMOS to ensure the 5-factor model of discrete affective experiences was valid. At the post-task measurement of affect; the five factor model of affect provided an adequate fit to the data; $\chi^2 (109) = 205.63, p < .001$; CFI = .94; IFI = .94; TLI = .92; GFI = .90; RMSEA = .06; SRMR = .05. Comparable results were found for pre-task affect; the five-factor model provided an adequate fit to the data; $\chi^2 (109) = 228.342, p < .001$; CFI = .91; IFI = .91, TLI = .89, GFI = .89, RMSEA = .07, SRMR = .06.

**Data aggregation.** Conflict and post-task affect were assessed to see whether they could meaningfully represent team-level constructs, by assessing within-group agreement via $r_{wg}$ (using a uniform expected distribution; James et al., 1993) and ICC(1), and the reliability of aggregate scores via ICC(2) as per the recommendations of Bliese (2000). Since emotional intelligence was conceptualised as an additive team composition input, it was not expected or necessary for it to be similar within teams and
different between teams (Chan, 1998). Task conflict was shown to be suitable for aggregation to the team level: ICC(1) = .50, ICC(2) = .78, F(61, 219) = 4.49, p < .001, with a median $r_{wg}$ of .93. Likewise, relationship conflict was also fit for aggregation: ICC(1) = .42; ICC(2) = .72, F(61, 219) = 3.66, p < .001, and a median $r_{wg}$ value of .95.

To assess whether the team’s affective experiences during the task met the requirement for a valid ‘emotional tone’, post-task emotional states were assessed and results are presented in Table 15. As a point of comparison, and to chart the emotion convergence that occurred during the task, the pre-task emotion measurements are also included (which were not expected or required to meet aggregation guidelines).

<table>
<thead>
<tr>
<th>Team Variables</th>
<th>Median $r_{wg}$</th>
<th>ICC(1)</th>
<th>$F$-test for ICC(1)</th>
<th>ICC(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.86</td>
<td>.14</td>
<td>$F(61, 219) = 1.59, p = .012$</td>
<td>.37</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.97</td>
<td>.26</td>
<td>$F(61, 219) = 2.26, p &lt; .001$</td>
<td>.57</td>
</tr>
<tr>
<td>Hostility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.94</td>
<td>.13</td>
<td>$F(61, 219) = 1.52, p = .020$</td>
<td>.34</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.97</td>
<td>.12</td>
<td>$F(61, 219) = 1.47, p = .030$</td>
<td>.33</td>
</tr>
<tr>
<td>Joviality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.67</td>
<td>.04</td>
<td>$F(61, 219) = 1.17, p = .221$</td>
<td>.14</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.71</td>
<td>.20</td>
<td>$F(61, 219) = 1.85, p = .001$</td>
<td>.47</td>
</tr>
<tr>
<td>Self-Assurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.71</td>
<td>.06</td>
<td>$F(61, 219) = 1.23, p = .161$</td>
<td>.18</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.66</td>
<td>.18</td>
<td>$F(61, 219) = 1.75, p = .003$</td>
<td>.43</td>
</tr>
<tr>
<td>Attentiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Task</td>
<td>.61</td>
<td>-.03</td>
<td>$F(61, 219) = 0.90, p = .669$</td>
<td>-.11</td>
</tr>
<tr>
<td>Post-Task</td>
<td>.65</td>
<td>.11</td>
<td>$F(61, 219) = 1.45, p = .034$</td>
<td>.31</td>
</tr>
</tbody>
</table>

*Note. N = 62.*

As can be seen in Table 15, not all of the post-task emotional states had sufficient justification to justify aggregation to the team level in terms of within-team agreement, and between-group reliability. Specifically, while the ICC tests indicate that teams did differ in their level of self-assurance and attentiveness experienced post-task, the amount of within-team agreement of these two positive emotions (median $r_{wg}$ of .66 for self-assurance and .65 for attentiveness) was too low for their average value to be
considered representative of the team’s tone (Chen et al., 2004). Therefore, Hypotheses 1b and 1c were not supported.

In contrast, fear, hostility and joviality all had high within-group consistency ($r_{wg}$'s exceeding .70; Chen et al., 2004). Their ICC(1) values show that a sufficient amount of variance in affect could be attributed to group membership, and that variance was significantly smaller within than between groups. Finally, the ICC(2) values demonstrate that groups could be reliably differentiated. Therefore, teams can be characterised and examined in terms of their jovial tone, fearful tone, and hostile tone.

**Convergence of discrete emotions.** As seen in Table 17, comparison of baseline emotion (before task interaction) and post-task emotion demonstrates increasing affective consistency within teams and increasing differences between teams as they interact, share affective experiences, and converge towards an emotional tone. However, it also should be noted that fear, joviality and hostility started out as fairly similar within teams at baseline measurement (despite teams having limited interaction on this measurement occasion before the team task). Paired samples t-tests suggest that only fear significantly converged during the task, with average $SD$ of fear in teams reducing from 0.55 to 0.40 ($t(61) = 3.04, p = .003$). Joviality did not have a significant reduction in $SD$ (0.84 to 0.82) ($t(61) = 0.30, p = .760$), and neither did hostility ($SD$ of 0.36 to 0.30 over time) ($t(61) = 1.26, p = .210$).

Hypothesis 1a suggested that jovial tone would converge leading to a specific tone, and Hypothesis 2b suggested that hostility would converge and develop into a distinct tone. Joviality and hostility did not demonstrate convergence over time (with both starting out already highly similar within teams). Nevertheless the analysis reveals at post-task measurement they were able to meaningfully represent ‘emotional tones’ of the team. On this basis, Hypothesis 1a and 2b were partially supported. Hypothesis 2a
suggested that teams’ fear would converge and lead to the development of a distinct fearful tone. This hypothesis was fully supported, as fear showed convergence within groups over time, and qualified as a group construct at post-task measurement, allowing the formation of fearful affective tone as a meaningful concept.

**Team-Level Analyses**

In line with my previous studies, I have chosen to set my significance cut off for team-level analysed as \( p < .10 \), due to the nature of my sample size and analysis techniques (e.g., Aguinis et al., 2010; McClelland & Judd, 1993). For the sake of brevity, only the analyses with significant main effects and/or interactions will be presented in tables (full results of non-significant analyses are available on request).

Means, standard deviations, and intercorrelations between team-level variables are given in Table 16. Initial correlations demonstrate that both fearful tone and hostile tone are linked with more conflict and worse team performance (as higher scores indicate lower performance). Jovial tone is linked with more task conflict (but not relationship conflict) and is not directly linked with team performance. Emotional management is negatively linked with hostile tone, and emotional understanding is negatively linked with both hostile and fearful tones, and neither emotional intelligence facet had a direct effect on performance. I note that large team size was positively related to team emotional management and emotion understanding and negatively related to team fearful tone. It appears that in larger teams there is more opportunity for these skills to be demonstrated.
The table below presents the mean and standard deviations for various constructs across Study 3:

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean (M)</th>
<th>SD</th>
<th>Table 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Understanding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Higher scores indicate better performance. The table includes data from Study 3 only.
Emotional intelligence as a moderator of hostile tone and relationship conflict.

Hypothesis 3 proposed a positive relationship between hostile tone and relationship conflict, which would be moderated by team emotional intelligence (emotional management and understanding). Results of these hierarchical regression analyses are presented in Table 17 (emotional management) and Table 18 (emotional understanding). In each analysis, the control variables were entered in the first step, the IV and moderator were mean-centered and entered in the second step, and the interaction was entered in the third step.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Relationship Conflict</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Size</td>
<td></td>
<td>.20</td>
<td>.06</td>
<td>0.96</td>
</tr>
<tr>
<td>Team Pre-Task Hostility</td>
<td></td>
<td>-.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Understanding</td>
<td></td>
<td>-.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.11</td>
<td>2.77*</td>
<td></td>
</tr>
<tr>
<td>Hostile Tone</td>
<td></td>
<td>.53**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Management</td>
<td></td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.00</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Hostile Tone x Emotional</td>
<td></td>
<td>-.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$ at Step 3</td>
<td></td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall $F$ at Step 3</td>
<td></td>
<td>1.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$N = 48$, $^*p < .10$, $^**p < .05$, $^***p < .001$
Table 18
Hierarchical Regression Results for Emotional Understanding Moderating the Effects of Hostile Tone on Relationship Conflict

<table>
<thead>
<tr>
<th></th>
<th>Relationship Conflict</th>
<th>( \Delta R^2 )</th>
<th>( \Delta F )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Size</td>
<td>.23</td>
<td>.05</td>
<td>0.73</td>
</tr>
<tr>
<td>Team Pre-Task Hostility</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Management</td>
<td>-.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostile Tone</td>
<td>.53**</td>
<td>.13</td>
<td>3.13*</td>
</tr>
<tr>
<td>Emotional Understanding</td>
<td>-.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostile Tone x Emotional Understanding</td>
<td>-.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total ( R^2 ) at Step 3</td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall ( F ) at Step 3</td>
<td>1.41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( N = 48 \)

\( ^* p < .10, ^{**} p < .05, ^{***} p < .001 \)

The results in Tables 17 and 18 indicate that, while hostile tone was significantly related to higher relationship conflict in the team, this effect was not moderated by team emotional management (see Table 17) or team emotional understanding (see Table 18), thus Hypothesis 3 was only partially supported.

**Emotional intelligence as a moderator of emotional tones and performance.**

Unfortunately, Hypothesis 4a (attentive tone is positively linked with performance) and Hypothesis 4c (self-assured tone is positively linked with performance when teams have higher emotional intelligence) are unable to be tested, as attentiveness and self-assuredness did not meet criteria to be meaningful at the team level as emotional tones. Hypothesis 4b suggested that jovial tone would be beneficial to team performance, and this relationship would be moderated by teams’ emotional intelligence, such that jovial tone would be more helpful to performance when teams had higher emotional intelligence. Only emotional understanding was found to be a moderator of this link (see Table 19).
Table 19
Hierarchical Regression of Jovial Tone and Emotional Understanding on Team Performance

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Team Size</td>
<td>-.17</td>
<td>.04</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>Team Pre-Task Joviality</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional Management</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>Jovial Tone</td>
<td>-.22</td>
<td>.04</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>Emotional Understanding</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>Jovial Tone x Emotional Understanding</td>
<td>.30*</td>
<td>.06</td>
<td>3.15*</td>
</tr>
</tbody>
</table>

Total $R^2$ at Step 3 | .14
Overall $F$ at Step 3 | 1.15

$N = 48$
*p < .10, **p < .05, ***p < .001

The results in Table 19 reveal that team emotional understanding interacted with jovial tone in the prediction of team performance. A follow-up analysis of simple slopes revealed that jovial tone was not a significant predictor of performance when emotional understanding was high ($\beta = .08, p = .744$), whereas jovial tone was significantly beneficial to performance ($\beta = -.57, p = .017$) when emotional understanding was low (see Figure 16).

Examination of Figure 16 suggests that when teams have a high jovial tone, performance is good irrespective of the teams’ emotional understanding. However, when teams have lower jovial tone, there is a significant performance benefit to having a high emotional understanding (as lower scores indicate better performance).
Figure 16. Team emotional understanding moderating the effect of jovial tone on team performance (lower scores indicate better performance).

Hypothesis 5a suggested that teams' fearful tone would have a negative relationship with team performance, which would be moderated by team emotional intelligence. No main effects were found, and neither emotional management nor emotional understanding moderated this relationship. Therefore, Hypothesis 5a was not supported.

Hypothesis 5b suggested that hostile tone would interact with emotional intelligence in the prediction of team performance, such that performance deficits from hostility would be less present when teams had higher emotional intelligence. Hierarchical regression showed no significant main effects or interaction in terms of team performance, contrary to Hypothesis 5b.

Emotional intelligence as a moderator of task conflict and performance.

Hypothesis 6 suggested that team emotional intelligence moderates the link between
task conflict and performance, such that task conflict is more beneficial to performance when teams have higher emotional management and higher emotional understanding. Only emotional management was a moderator of this link, see Table 20 below.

Table 20
Hierarchical Regression of Task Conflict and Emotional Management on Team Performance

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Team Performance</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Size</td>
<td></td>
<td>-.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td></td>
<td>-.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.01</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Task Conflict</td>
<td></td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td></td>
<td>-.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td>.11</td>
<td>5.52**</td>
<td></td>
</tr>
<tr>
<td>Task Conflict x Emotional Management</td>
<td>-39**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total R² at Step 3 .22
Overall F at Step 3 2.13*

N = 48
*p < .10, **p < .05, ***p < .001

While there were no main effects of task conflict on team performance, the results in Table 20 indicate that team emotional management moderated the relationship between task conflict and team performance (see Figure 17). Simple slopes analysis was undertaken as per Aiken and West (1991), which indicated that task conflict is not significantly related to team performance when emotional management is high; β = -.24, p = .273 (although it was trending as helpful to performance). On the other hand, when emotional management is low, task conflict is significantly detrimental to performance; β = .67, p = .033 (since lower scores indicate better performance).
Figure 17. The interaction of task conflict and emotional management in the prediction of team performance (lower scores indicate better performance).

While Hypothesis 7 predicted that team emotional intelligence would also moderate the link between relationship conflict and performance, no significant main effects or interactions were found, thus Hypothesis 7 was not supported.

Discussion

The aim of this study was to extend knowledge on affect convergence in teams, by assessing the formation and consequences of affective tone via discrete emotional states, and the moderating role of emotional intelligence (as assessed via an ability test) during a workplace-based decision-making task.

Convergence of discrete emotional states. In line with predictions, teams demonstrated that specific discrete positive and negative affective states converged, and fit the requirements for aggregation to the team-level concept of ‘emotional tone’. Specifically, teams in my study could be assessed in terms of their jovial tone, fearful tone, and hostile
tone. Contrary to predictions, the additional two positive affective states that were measured (self-assured tone and attentive tone) did not display enough within-group similarity at post-task measurement to be considered representative of the team’s tone. While this was against predictions, it fits with the idea that convergence is most likely to occur with affective states that are more salient, have higher energy level, and are more observable to others (Bartel & Savavedra, 2000; Hatfield et al., 1994). In a relatively quick team task (i.e., ten minutes interaction in my study) participants may find it hard to observe these affective states in others, and thus are less affected by them personally, preventing the convergence that leads to consistent tone within a team.

Additionally, a somewhat unexpected result was that hostility and fear started out as highly similar, and could be reliably differentiated between teams at the baseline measurement. There are a few possible explanations for this. First, as stated previously, team members were familiar with each other as a part of their university cohort, and students had time for some interaction with their team members prior to the team task. This may have been sufficient exposure to team members in order to develop distinct tones in terms of fear and hostility. Some research has shown that negative emotions are more salient and thus more contagious than positive (e.g., Bartel & Saavedra, 2000; Rozin & Royzman, 2001; Saxbe & Repetti, 2010; Spoor & Kelly, 2009).

**Emotional intelligence as a moderator of hostile tone and relationship conflict.** In line with predictions, teams’ hostile tone had a direct positive link with teams’ relationship conflict, however, this relationship was not found to be moderated by team’s emotional intelligence as measured by either the STEM (emotional management) or the STEU (emotional understanding, MacCann & Roberts, 2008a, 2008b). Therefore, it seems that teams that experience a higher amount of hostility (i.e., members feeling angry, irritable, etc.) also have the largest problems with relationship conflict (i.e., disagreements between
members, personality clashes). This fits within, and provides further specificity to previous research which has linked global negative affective tone with relationship conflicts (e.g., Sessa, 1996).

**Emotional intelligence as a moderator of emotional tones and performance.**

Jovial tone was found to interact with teams’ emotional understanding, such that at low joviality, there is a significant performance benefit to having higher team emotional understanding. This result is comparable to previous findings on the performance benefits of positive affect (e.g., Barsade, 2002; George, 1995) as well as previous theorising that moderating factors (in this case, emotional understanding) can act to influence this link (e.g., George & King, 2007). Neither fearful tone nor hostile tone were shown to have any relationship with team performance, likewise neither interacted with team emotional intelligence in the prediction of performance.

**Emotional intelligence as a moderator of conflict and performance.** On the other hand, team’s emotional management was found to be important in the relationship between teams’ task conflict and their task performance. When teams have high emotional management, task conflict was not detrimental to team performance, however, when teams had lower emotional management, the presence of more task conflict was related to worse task performance. These results support Yang and Mossholder’s (2004) assertions of the importance of emotional intelligence in determining the efficacy of conflict, and also support the inclusion of emotional intelligence as an addition to Jehn and Bendersky’s (2003) contingency perspective on conflict.

**Summary.** In this chapter I examined the emergence of emotional tones for discrete emotions and found that tone does not emerge uniformly for all discrete emotions. I also examined the impact of various discrete emotional tones on team conflict and performance,
and found, comparable to my previous two studies, certain facets of emotional intelligence are moderators of the consequences of discrete emotional tones. In the final chapter of my thesis, the results of the three studies I have described are drawn together in order to compare results across my studies, and to explain how they fit within and extend past literature.
CHAPTER 7: INTEGRATION AND DISCUSSION

Chapter Aims

In this chapter, I draw together the results of the three studies presented in Chapters 4, 5 and 6 and explain how they address my research questions formed in Chapter 1 and my research model proposed in Chapter 3 (see Figure 2). I highlight the themes consistently drawn out across the three studies, and describe how they fit within and extend existing literature on the formation and consequences of group affective tone. Contributions to both theory and practice that emerge from my program of research are also discussed, as well as the limitations and future directions.

Overview of the Research

My overall research model and accompanying research questions were constructed with a view to better understanding the complexities of the affective experiences of teams. My broad research questions were:

RQ1. Under what conditions will team members’ positive affect and negative affect converge?
RQ2. What are the consequences of team affective tone on team conflict?
RQ3. What are the consequences of team affective tone on team performance/satisfaction?
RQ4. To what extent does team emotional intelligence influence the interplay of team conflict and team performance?

Three studies were conducted to address these questions. Different outcome measures were used across all three studies. Study 1 involved existing student teams during the completion of a logical decision-making task. This study examined the convergence of team members’ affect (RQ1), and whether the consequences of teams’ affective tone on experienced conflict and objective performance in the task was dependent on teams’ (self-
rated) collective emotional intelligence (RQ2 & 3), as well as the role of collective emotional intelligence in determining the effectiveness of team conflict on performance (RQ4).

Study 2 utilised an experimental design using randomly formed teams, and examined how the trait affective composition of a team contributed to the affective tone of teams. I also tested whether this link was contingent on teams’ self-rated level of emotional intelligence (RQ1), as well as the impact of collective emotional intelligence and formally imposed display rules on the link between teams’ affective tone and performance (both self-rated and objective) in a creative task (RQ3).

Finally, Study 3 enabled me to take a more fine-grained look at the collective discrete emotions of a team. In this study I investigated the convergence of specific emotions in university teams completing a workplace-based decision-making task (RQ1). I also examined whether the consequences of teams’ various emotional tones on experienced conflict and objective performance in the task was dependent on teams’ collective emotional intelligence (assessed via an objective situational judgement test; RQ2 & 3). In combination, the findings of these three studies have provided support for some previously theorised aspects of the convergence of team affect, as well as illuminating some counterintuitive relationships regarding the benefits of affective tone and collective emotional intelligence. The major findings derived from my program of research are organised by research question in the following sections.

Under What Conditions will Team Members’ Positive and Negative Affect Converge? (Research Question 1)

The current program of research examined this issue in three ways (convergence of affect, convergence of discrete emotions, and the combined roles of trait affect and emotional intelligence as inputs to affective tone). First, I examined whether positive affect and negative
affect converges in temporary teams during a single task, such that teams developed positive and negative affective tone (RQ1, Study 1 and Study 2).

Convergence of Affect

The findings of both Study 1 and 2 support the robustness of affect convergence demonstrated in prior literature (e.g., Barsade, 2002; Sy et al., 2005), as there was evidence of convergence in positive affect and negative affect in temporary teams completing a single task when members were familiar with each other (coherent existing teams: Study 1) and when randomly formed (ad hoc teams: Study 2). In both studies, negative affect and positive affect had fulfilled requirements to be accurately classified as ‘tone’ by the end of the tasks (i.e., highly similar affective levels within teams, and sufficient affective differences between teams; Kozlowsk & Klein, 2000). However, it is noteworthy that in both studies, negative affect showed more convergence than positive affect. Negative affect started out less similar across team members prior to the task, whereas positive affect was generally already fairly similar within teams before the task. This finding may be a consequence of the context of these studies, which were conducted during class exercises. It is conceivable that a level of positive tone may have already been set by the facilitator, or already developed simply by proximity to others in the same room (as convergence of salient emotions can occur without any interactions, but mere proximity; e.g., Sonnby-Borgström et al., 2008).

Convergence of Discrete Emotions

In an extension of the findings of Studies 1 and 2, I applied a more fine-grained approach to team-level affect in Study 3 and examined whether discrete positive and negative emotions converge in temporary teams during a single task, such that teams developed consistent emotional tones (RQ1). Study 3 demonstrated that, when you take a closer look at discrete emotions in teams, convergence is dependent on the salience of the specific emotion.
Initial evidence of this was found by Bartel and Saavedra (2000) who found that pleasant and unpleasant moods with low arousal (e.g., contentment for pleasant, and sluggishness for unpleasant) were harder for an observer to identify, and displayed weaker convergence within a group, in comparison to moods with higher arousal (e.g., excitement for pleasant, and distress for unpleasant). While Bartel and Saavedra (2000) found weaker convergence for less visible mood states, my research found that only the more highly visible emotions (joviality, fear, and hostility) showed convergence, whereas less visible emotions (self-assured, attentiveness) did not. Despite a lack of empirical evidence to support this, it is possible that if teams had more time together (rather than completing a short task together), even the less salient emotions would become consistent enough to represent the ‘tone’ of the team. Alternatively, when team members have made closer ties, they may be more honest in their expression of emotion, and engage in less impression management (Bolino et al., 2016).

**Trait Affect and Emotional Intelligence as Inputs to Affective Tone**

Finally, under this broad research question and in terms of examining the conditions under which affect converged, I examined to what extent group members’ trait affective composition and team emotional intelligence influenced the development of group affective tone. I addressed this in Study 2, and determined that, in line with Kelly and Barsade (2001) and George (1990), the trait affective composition of the team was a significant input variable contributing to the affective tone of a team (as measured after a brainstorming task). In general, if a team is made up of members whose individual trait negative affect is fairly high, the team as an entity develops a more negative affective tone (as an experienced emotion rather than a trait). This supports previous research that demonstrates trait negative affect is a significant input to the teams’ affective processes (George, 1990).

For positive affect, the story was more complex. Positive affective trait composition was a determining factor of the level of positive affective tone that developed in teams only
when certain facets of emotional intelligence were low. Specifically, when teams collectively had low awareness of their own emotions, and low management of other members’ emotions, there was a strong link between the team’s average trait PA, and their positive affective tone. Alternatively, in teams with higher awareness of their own emotions (i.e., can recognise that they are feeling positive) and high management of others’ emotions (i.e., can influence their team’s positivity to cheer everyone up or calm them down), average trait PA was no longer predictive of positive tone.

The prevailing theories on processes of emotional contagion leading to affective tone emphasise the dynamic nature of emotional exchanges that can occur during team interactions, and how they can provide many opportunities for emotional influence, above and beyond general affective tendencies of team members (e.g., Hareli & Rafaeli, 2008; Kelly & Barsade, 2001; Walter & Bruch, 2008). However, both unconscious (e.g., primitive emotional contagion; Hatfield et al., 1992) and conscious (e.g., empathy; Decety & Jackson, 2004) mechanisms of affective influence require attendance to, and recognition of others’ affect (Elfenbein & Shirako, 2006; Hatfield et al., 1994) in order for the affect to be ‘caught’ and further circulated within a team context. My findings in Study 2 suggest that these processes of affective exchange are (in the case of positive affect) strongly dependent on teams’ collective emotional skills. In order to influence and be influenced by the emotions of others in your team, you need to be aware of your emotions, and manage others’ emotions. If these skills are lacking, and members are not influencing/being influenced by each other, their general affective tendencies will drive the teams’ collective affect. The implications of this finding is that if a team is composed of primarily lower trait PA members (and do not have key collective EI skills), the major determinant of the positivity of their team will be their trait PA, and thus they will likely have a very low positive affective tone.
What are the Consequences of Group Affective Tone on Team Conflict?

(Research Question 2)

Negative Affective Tone and Relationship Conflict

Group affective tone has been linked to certain types of conflict, and many models of tone suggest that negative tone impacts particularly on relationship conflict (e.g., personality clashes), which is generally seen as the more emotional form of conflict (distinct from the more cognitive disagreements which characterise task conflict; Jehn & Bendersky, 2003). There is evidence at the individual level that suggests emotional intelligence may help constrain the amount of relationship conflict that occurs between people (Jehn & Bendersky, 2003; Sessa, 1996). I wanted to extend this idea to a team’s collective emotional skills and explore the extent that team emotional intelligence influences the relationship between negative affective tone and task and relationship conflict.

In Study 1, I found some counterintuitive effects of emotional intelligence. While negative affective tone was not directly related to relationship conflict, the two awareness facets of emotional intelligence (awareness of own emotions and awareness of others’ emotions) moderated the link between negative affective tone and relationship conflict. Contrary to predictions that collective emotional intelligence would be helpful (e.g., Kelly & Barsade, 2001), my findings suggested that for teams with higher skill in recognising their own emotions (e.g., are very aware of any internal negativity), a highly negative affective tone leads to more relationship conflict within the team. Likewise, for teams in which members are more likely to recognise the emotions of team members (e.g., aware of when others are giving subtle cues that they are frustrated), there is a stronger link between negative affective tone and the experience of relationship conflict. These results suggest that having collectively low awareness of own and others’ emotions can weaken the link between negative affective tone and relationship conflicts, as teams with more emotional awareness let
their negativity affect their conflict behaviours, and teams with lower emotional awareness do this less. Prior research has also suggested possible harmful effects of emotional awareness on team functioning, when it is not also accompanied by increases in emotional management ability (e.g., Elfenbein et al., 2007; Elfenbein & Ambady, 2002).

Hostile Tone and Relationship Conflict

Study 3, which separated negative affect into discrete emotions of fear and hostility, found a direct relationship between hostile tone and relationship conflict (but not fearful tone and relationship conflict). This conforms to researchers’ explanation of relationship conflict, which typically features anger around personal disagreements, rather than fear (Jeoh, 1995). In my study, however, the collective emotional intelligence of the team did not moderate this link (in contrast to Study 1, where I found emotional awareness to be detrimental for the link between negative affective tone and relationship conflict). I note that emotional intelligence was assessed in Study 3 via an ability measure comprising the STEM (situational test of emotional management) and STEU (situational test of emotional understanding; MacCann & Roberts, 2008a, 2008b). The choice of measurement instrument may have affected these findings. My measurement of emotional awareness in Study 1, and Elfenbein et al.’s (2007) findings in relation to emotional awareness can be classified as per Mayer and Salovey’s (1997) classification of emotional intelligence branches. This is conceptually distinct from emotional understanding as assessed by the STEU, which includes not just awareness but also involves skill in understanding when emotions are functional or appropriate for the context (MacCann & Roberts, 2008a). On this basis the STEU may be seen as a more complex measure of emotional awareness abilities. This may account for the lack of negative impacts of emotional understanding in Study 3, as compared to Study 1 where a self-report measure of emotional awareness was used. Conceivably, awareness of
negative emotions is more likely to be detrimental when not accompanied by an understanding of that negativity and how it arises and its contextual functionality.

The findings of both Study 1 and 3 indicate that, while negative affective tone (and specifically a hostile tone) is linked with increased relationship conflicts, this can actually be exacerbated by emotional awareness abilities. These studies also illustrate that different emotional tones have different effects on team dynamics. This provides support for calls emphasising the value in differentiating specific emotions from the global category of negative affect in future research (Lee & Allen, 2002).

What are the Consequences of Group Affective Tone on Team Performance?

(Research Question 3)

My third research question involved examining the consequences of affective tone on team performance and team satisfaction. More specifically, I examined two potential moderators of this link, collective emotional intelligence and team display rules.

Positive Affective Tone and Team Performance

Emotional intelligence as a moderator. Across Studies 1 and 2, one specific facet of emotional intelligence (being able to manage the emotions of team members) was identified as a consistent moderator of the relationship between positive affective tone and team performance. In Study 1, I found that the facet of management of others' emotions moderated the relationship between positive affective tone and team performance in a logical decision-making task. These results were supported in Study 2, in which management of others' emotions was again found to moderate the impact of positive tone on team performance, this time in a creative idea-generation task.
While the skill of managing others' emotions was identified as a moderator across Studies 1 and 2, there was a change in the pattern of moderation. My broad expectations were that positive affective tone would be helpful to performance when collective emotional intelligence was high, and positive affective tone would be detrimental (or less helpful) to performance when emotional intelligence was low (e.g., George & King, 2007; Schwarz & Clore, 2003; Van Kleef, 2009). Positive affective tone did have a positive impact on performance when teams had greater emotional skills in the creative idea generation task in Study 2 (in terms of the skill of managing others’ emotions), but the same relationship did not reach significance in Study 1 (the logical decision-making task). My expectation that positive affective tone would have a detrimental effect on team performance when teams had poorer emotional skills was supported in Study 1 (for the skill of managing others’ emotions), but failed to reach significance in Study 2.

This differing pattern of moderation may be due to the nature of the tasks involved. Study 1 employed a decision-making task in which team members had to discuss and debate the merits of various ideas, and come to a team consensus within a tight timeframe. This may explain why the predicted deficits of high positivity were so apparent for teams with lower skills in emotional management. Perhaps teams that could not manage their positivity productively in Study 1 (e.g., were joking around instead of encouraging enthusiasm and focusing on the task), missed vigorous debate and failed to ensure that all opinions were heard and all options considered, which is crucial for a good performance score (e.g., Kerr & Tindale, 2004). In contrast, the task in Study 2 was an idea-generation task, in which team members collaboratively discussed and came up with ideas in a brainstorming session. There was no requirement for consensus on this task, only that the team come up with as many ideas as possible. Therefore, this type of task may be less likely to have such harsh consequences for excessive positivity in comparison to the decision-making task (e.g., Isen,
Despite these differences, the role of managing others’ emotions was a clear moderator of this relationship. In Study 3, the moderating role of emotional intelligence was again supported, in the case of joviality and team performance. In this study, emotional intelligence was measured via situational judgement tests (rather than self-report) and emotional understanding moderated the link between joviality and performance. When teams had a highly jovial tone, performance was good (independent of teams’ emotional understanding). However, in teams with lower joviality, teams that had higher understanding of emotions did better in the task than teams with lower emotional understanding.

**Negative Affective Tone and Team Performance**

*Emotional intelligence as a moderator.* In terms of negative affective tone, Study 2 again found unexpected effects for the awareness facets of emotional intelligence. Similar to the results regarding negative affective tone and relationship conflict found in Study 1, a collective awareness of own emotions was detrimental to team’s performance when there was low negative affective tone. Presumably, when there is a high negative affective tone, it is more visible to others and has a more universal harm for task processes, whereas in the case of low negative affective tone, teams who have a high awareness will still be aware of the negativity present in low levels (while those with lower awareness may leave it unacknowledged), and suffer the penalties. This conforms with research undertaken by Elfenbein et al. (2007) who found that young adults (as was mostly the case in my program of research) may not have the ability or the time in a short task to, after recognising their negative emotions, be able to implement strategies to manage it appropriately. On this basis, the respondents may have got all the bad effects of awareness (e.g., hypervigilance) without an accompanying benefit of being able to constructively influence the outcomes of the team.
Display rules as a moderator. Study 2 employed an experimental design to vary teams’ display rules while completing their task, with the expectation that open expression of negative emotions would increase the harmful impact of negative affective tone on performance (e.g., Cole et al., 2008). In teams given instructions to impose display rules (avoid expressing negative emotions, and boost the display of positive emotions) negative affective tone was not detrimental to teams’ satisfaction with performance. Negative affective tone was linked with greater dissatisfaction with performance in teams without constrained display rules. Therefore, my research has shown that display rules can sometimes buffer against the harmful effects of negative affective tone on satisfaction with team, but without necessarily buffering against the impact on objective performance.

Collectively, my findings suggest that positive affective tone (and specific positive emotions) does not universally contribute to improved team performance. Depending on the task (e.g., complex decision-making tasks, or idea-generation tasks) a team’s potential for managing each other’s emotions and their understanding of emotions will be a necessary factor to consider in order to ensure optimal team outcomes can be gained from a positive affective tone. My results also suggest that awareness facets of emotional intelligence may be detrimental to performance when there is a high negative affective tone, while constraining the display of negative emotions can be beneficial to perceived performance (but not objectively-rated performance) in the case of negative affective tone.

To What Extent does Team Emotional Intelligence Influence the Interplay of Team Conflict and Team Performance? (Research Question 4)

In both Studies 1 and 3, emotional intelligence ameliorated the link between task conflict and team performance. Jehn and Bendersky (2003) argue that in complex decision-making tasks, task conflict can be helpful by increasing the amount of knowledge shared
between team members, and encouraging the team members to approach the task from different perspectives. In line with the contingency perspective, I tested whether emotional intelligence would increase the benefits of task conflict (e.g., Sessa, 1996; Yang & Mossholder, 2004). Further emphasising the key role of emotional management for teams’ affective experiences, in Study 1 I found that management of others’ emotions and task conflict interacted in a compensatory way to predict a team’s objective performance. That is, when teams had good management of others’ emotions, performance was generally high irrespective of the amount of task conflict. When teams were lacking in management of others’ emotions, the presence of task conflict was needed to ensure performance of a level equivalent with a high management of others’ emotions. Therefore, my results suggest that high task conflict can compensate for the performance deficit that occurs when collective emotional management skills are low. This provides an additional factor (emotional management of others) that I suggest should be included as a contingency factor in Jehn and Bendersky’s (2003) contingency theory of conflict.

Likewise, in Study 3, teams’ emotional management (assessed via situational judgement test) moderated the link between task conflict and performance. At high levels of task conflict, teams with higher emotional management had better performance than teams with lower emotional management. These findings suggest that emotional management (and particularly management of others’ emotions) may be key to explaining previous contradictory effects of task conflict (e.g., De Dreu & Weingart, 2003; de Wit et al., 2012). As has been suggested by Jehn and Bendersky (2003), the functionality of task conflict is determined by a number of facets of the team and its context. My research especially highlights the role of emotional management (overall, and specifically management of team members) in determining the advantages of task conflict.
Theoretical Contributions

The three studies in my program of research have both supported previous research on affective tone and extended knowledge regarding the impact of collective emotional intelligence on team interactions with some counterintuitive findings. In an extension of previous research on affect at the team level, I examined specific discrete emotions and their convergence in short tasks, and demonstrated that specific discrete emotions have differential influences on team outcomes which aren’t apparent when researchers focus on broad issues of valance and classify affect as either globally positive or negative in nature (e.g., Lee & Allen, 2002). My research suggests that this type of categorisation ignores the fact that discrete emotions can work very differently on teams’ functioning (e.g., emotional tones such as fear and anger).

Although the role of team-level emotional intelligence had been theorised to affect various team affective processes (e.g., Kelly & Barsade, 2001), its potential moderating influence on the relationship between affective tone and team outcomes has not been examined until now. Different facets of emotional intelligence were found to have opposing effects. My research has extended past findings by demonstrating that the awareness facets of emotional intelligence (Jordan & Lawrence, 2009) can be harmful to a team’s functioning when considering the negative affective tone of the team. When a team is lower in negative affective tone, having high awareness of emotions is detrimental in terms of both relationship conflict experienced in the team, and objective performance of the team, which is consistent with some prior findings on awareness of negative emotions (e.g., Elfenbein et al., 2007). This finding is in contrast to the majority of affective tone models which predict emotional intelligence will help buffer against the harmful impacts of negative affective tone (e.g., Barsade & Gibson, 2001). Therefore, future models should separately consider the effects of
various emotional abilities in considering the impact of affective tone on various team outcomes.

In contrast, however, certain management aspects of emotional intelligence were found to be highly valuable in the interplay between positive affective tone, task conflict, and team performance. Contrary to past theory suggesting the desirability of a highly positive affective tone (e.g., George, 1995), and research demonstrating a simple positive link between positive tone and performance (e.g., Hmieleski et al., 2012; Kim & Choi, 2012; Knight & Eisenkraft, 2015), my research has challenged the notion that a positive affective tone is universally advantageous. My findings provide additional support for the affect-as-information theory (Schwarz & Clore, 2003). Based on my research, during complex decision-making or creative tasks, teams need to be able to manage their positivity so that it remains functional. Rather than making them complacent about their task, positive affectivity needs to be managed ensuring team members don’t prioritise harmony in the team over the importance of offering dissenting viewpoints or arguing the merits of alternative approaches to the task.

Taken as a whole, the findings of my studies have revealed the many complexities inherent in affective experiences in teams. Teams are constantly changing, as they engage in many interactions, which include dynamic exchanges of affect, and working together in multiple ways to achieve goals (Mathieu et al., 2017). Accordingly, an understanding of teams’ collective affective experiences needs to acknowledge and account for difference in teams’ trait affective composition, their collective emotional intelligence (in terms of specific emotional abilities), and their display rules. A consideration of the interplay of these factors is needed in order to make predictions as to their functionality with regard to experienced conflicts, and team outcomes including subjective satisfaction with their team’s performance, and the objective performance of the team as a whole.
Contributions to Practice

The findings of my research program have a number of implications for practices in organisations. Many employers form their employees into team-based structures with the understanding that teams work together to achieve goals in a way that is more time-efficient and more successful than they would be able to achieve individually (i.e., the team is greater than the sum of its parts; Fulmer & Ostroff, 2016). Furthermore, a popular theory contends that the more positive your workforce is, the better they work together (e.g., George, 1995). However, a number of factors need to be in place to ensure that teams perform to their maximum potential in complex tasks, as teams are dynamic and complex (Waller et al., 2016). A positive team may not work as constructively as they could unless, as a team, they can draw on certain emotional intelligence resources, that is, enough members in the team who are skilled at managing others’ emotions. My findings suggest that only when, collectively, a team is skilled at managing emotions (e.g., can cheer up their teammates when needed, can calm them down when it’s time to buckle down to work) should a more positive affective tone be encouraged by managers. Training in emotional intelligence for employees may help increase emotional management abilities in team members, which offsets this risk (e.g., Slaksi & Cartwright, 2003).

Managers who find that their happiest teams are not necessarily their most successful in complex decision-making or brainstorming tasks, could consider reforming teams to ensure an appropriate collective level of emotional management skills is met in each team, such that members with higher skill can compensate for those with lower skill. Emotional intelligence instruments could be used to inform choices about forming teams within departments, and in cases where transfers between workteams are being considered (e.g., Jordan & Lawrence, 2009; MacCann & Roberts, 2008a, 2008b). This would also have the added benefit of ensuring that any task conflicts that may occur will not derail the
performance benefits expected from differing viewpoints and need for compromises that can arise.

Limitations & Future Directions

While my research has contributed to the literature on affective tone, there were some limitations across the three studies. I have outlined the major limitations below, as well as possible avenues for future research that addresses them.

Samples

First, the use of student samples from a university course may limit the generalisability of the results. Although this decision allowed for the implementation of a rigorous methodological design, the samples from all studies were relatively young, and the majority of the participants were female. As already acknowledged, some of the more unexpected findings (e.g., awareness of emotions being harmful to relationship conflict and performance) may be due to the young sample in which awareness of emotions is not necessarily accompanied by sufficient emotional management abilities (e.g., Elfenbein et al., 2007). Studies using older samples, or a greater age range will shed further light on these potential relationships. Additionally, while examination of the samples demographics revealed a substantial proportion of participants in each study reported having prior work experience, the extension of this research to working populations is warranted. Future research is needed to examine whether the relationships found in my program of research can be replicated in workplace samples with a more diverse age range. Finally, my three studies had relatively small sample sizes (i.e., from 47 to 62 teams across studies), and in deference to this, I followed recommendations to relax significance testing to $p < .10$ for group-level analyses (Aguinis et al., 2010; McClelland & Judd, 1993). In future, larger sample sizes will provide greater support for the findings in my studies.
The Setting of the Tasks

Second, the tasks that the student teams were asked to complete were chosen because they are generally accepted as reflective of tasks (both rational decision-making and creative idea generation) in the workplace (e.g., Day & Carroll, 2004; Goncalo & Staw, 2006; Rogelberg et al., 1992). However, the tasks carried no meaningful stakes as would be expected of a decision made in the workplace, where project teams members’ worth and employability would be ultimately judged based on the consequences of those decisions. This may have changed the way participants approached the task. I acknowledge that participants undertaking short-term and low-stakes tasks are potentially less likely to argue and debate different options with their team members (and risk causing friction) in order to arrive at the right answers (e.g., Driskell & Salas, 1991), and may be slower at task completion (e.g., Beersma et al., 2003). This may account for some lack of results in terms of relationship conflict and negative affective tone. Future studies with student samples could manipulate the stakes of the tasks, and create higher competition between teams. Additionally, while studying students samples in tightly controlled settings allowed a more rigorous methodological design, it should be acknowledged that the same relationships need to be confirmed in workplace teams completing projects over time.

The Use of Self-Rated Measures

For the sake of study administration, some self-report measures were used. I chose widely used and well validated measures for team conflict (Study 1 and 3), experienced affect (all studies) and emotional intelligence (Study 1 and 2). While objective measures of experienced emotion do exist (e.g., blood pressure, galvanic skin responses) they are not ideal for team situations, where assessment needs to occur directly before and directly after the task for best results (Dasborough et al., 2008). Although research has been completed using
observer-rated emotions in the past, I did not use this in my research as observation sometimes does not properly reflect the experienced affect of team members (as is required for the definition of affective tone; George, 1990). A number of factors including respondent emotional regulation (e.g., suppression of emotional display; Gross, 1998) and impression management result in observation capturing expressed rather than experienced affect.

Additionally, I used a self-rated measure of emotional intelligence in Studies 1 and 2 (WEIP; Jordan & Lawrence, 2009). While self-rated measures do have limitations, in that they require cognition and memory functions (Dasborough et al., 2008) they are easily administered, and the measure I chose was valuable as it was specifically tailored to a team context. In order to reduce these concerns, I used an ability measure of emotional intelligence in Study 3 (the STEM/STEU; MacCann & Roberts, 2008a, 2008b). At present no team level ability measure of emotional intelligence is available.

**Common Method Variance**

There was a possibility of common methods variance in my studies, as a number of self-rated measures were used within each study. However, I attempted to minimise this risk by using a split administration which separated the measurement of emotional intelligence from all other measures (in Study 1 and 2) and by using an ability measure of emotional intelligence in Study 3. Likewise, for performance, I used objective measures of performance across all three studies, with an additional self-rated performance measure in Study 2. While not completely eliminating the potential for common method variance, I consider that these precautions have minimised the possible impact of common method variance in my results (Podsakoff et al., 2003).

I acknowledge that a range of other factors such as the inclusion of a marker variable (Williams, Hartman, & Cavazotte, 2010) or the collection of data from another respondent (such as a supervisor or a peer) as a variable in my research (Podsakoff et al., 2003) may have
assisted in minimising Common Method Variance in my data. These type of measures could be used in future research to overcome this issue.

**Direction of Causality**

Finally, the cross-sectional design of my three research studies does not allow for assumptions of the direction of causality in terms of affective tone, conflict, and performance. My model follows major theoretical frameworks that support an assumed directionality of team conflict and team performance as consequences of affective tone. There is also some experimental research that supports this view (e.g., Grawitch et al., 2003). More likely, there are a number of feedback loops operating simultaneously, with conflict and perceived performance also having a reinforcing effect on affective tone (e.g., Hareli & Rafaeli, 2008; Kelly & Barsade, 2001). Research that manipulates tone (e.g., Sy et al., 2005) or takes measurements of focal variables at multiple time points (e.g., Knight, 2015) will help in further understanding the directions of the affective processes.

**Further Directions for Research**

Despite the presence of models that emphasise the dynamic and changing nature of emotional influence between employees (e.g., Hareli & Rafaeli, 2008; Walter & Bruch, 2008), researchers have traditionally measured affective tone at a single time point, or within short timeframes. This does not reflect the temporally dynamic, varying nature of affective tone in workgroups that undergo many changes over time (see Cronin et al., 2011). Groups can experience a variety of affective states over the lifecycle of the group, as projects are generally completed over extended periods of time. Therefore, it is overly simplistic to measure affect at a single point in time, and expect to get a clear idea of its effect on group dynamics/performance. Future research should be encouraged to apply methods such as experience sampling of groups during tasks over time (e.g., Knight, 2011).
Positive affect and negative affect are considered orthogonal constructs (Watson et al., 1988). As such, the majority of research on affective tone has examined positive and negative affective tone as completely separate constructs. However, research is emerging that point to the importance of considering the complex interplay of both positive and negative group affect at different points in time. George (2011, p.158) refers to this as the dual tuning perspective and argues that “researchers should consider the combined effects of positive and negative affect. Both positive and negative affect are adaptive for different reasons and it is through their combined effects that effective functioning results in and outside of organisations”.

Finally, research in the area to date is dominated by the study of group affective tone. This line of research only considers instances in which group’s positive and negative affect converges to become homogeneous, and discounts groups which do not affectively converge (e.g., George, 1995). Groups that have not demonstrated affective convergence (and so display varying degrees of heterogeneity in positive and negative affect within the group) are largely ignored. Support for the importance of this consideration is given by empirical research on this phenomenon which has so far been restricted to variance in group’s trait (rather than state) affectivity and how it may interact with group’s mean trait affectivity (e.g., Barsade et al., 2000; Kaplan et al., 2012; Kim et al., 2012, Kaplan et al., 2012, ).

Clearly, the relationship between positive and negative affective tone and performance outcomes is much more complex than initially conceptualised, and theoretical models and analytical techniques that explore these differences need to be applied in empirical research on group affective tone.

**Conclusion**

In this chapter, I have discussed the results of my program of research across my three studies, and identified common themes as well as differences in findings. While my results
have provided some support for the broad research model proposed in Chapter 3 (Figure 2), it has also further underscored the sometimes complex and counterintuitive nature of affective experiences of teams. My contributions to the theory and practice have been outlined, and I have acknowledged the limitations of my program of research, while also suggesting ways forward in the future.
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APPENDIX A: STUDY 1 MATERIALS

A Study of Emotions During Teamwork – Part 1

<table>
<thead>
<tr>
<th>Student Researcher:</th>
<th>Chief Investigators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Collins</td>
<td>Prof Peter Jordan</td>
</tr>
<tr>
<td>PhD Candidate</td>
<td>Griffith University</td>
</tr>
<tr>
<td>Griffith Business School</td>
<td>+61 7 3735 3717</td>
</tr>
<tr>
<td>Griffith University</td>
<td><a href="mailto:Peter.Jordan@griffith.edu.au">Peter.Jordan@griffith.edu.au</a></td>
</tr>
<tr>
<td><a href="mailto:a.collins@griffith.edu.au">a.collins@griffith.edu.au</a></td>
<td>Dr Ashlea Troth</td>
</tr>
<tr>
<td></td>
<td>Griffith Business School</td>
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<td></td>
<td>Griffith University</td>
</tr>
<tr>
<td></td>
<td>+61 7 3735 5241</td>
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<tr>
<td></td>
<td><a href="mailto:A.Troth@griffith.edu.au">A.Troth@griffith.edu.au</a></td>
</tr>
<tr>
<td></td>
<td>Dr Sandra Lawrence</td>
</tr>
<tr>
<td></td>
<td>Griffith Business School</td>
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<tr>
<td></td>
<td>Griffith University</td>
</tr>
<tr>
<td></td>
<td>+61 7 3735 7132</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:s.lawrence@griffith.edu.au">s.lawrence@griffith.edu.au</a></td>
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<td></td>
<td>au</td>
</tr>
</tbody>
</table>

Why is the research being conducted?
This project examines how the emotions you feel and display during a group activity impacts on your behaviour within the group, and your decision-making abilities.

What you will be asked to do
You will be asked to participate in:
(1) An individual decision-making exercise in which you are presented with a hypothetical survival scenario (a plane crash), and are asked to rank a number of items according to their importance for survival in that scenario (approx 5 mins)
(2) A group decision-making exercise, where you rank the same items as part of a group with 3-5 other participants (approx 10 minutes)
(3) Complete a short survey about your experiences during the team exercise (approx 5 mins)

Consent to Participate
By returning the survey, you will be indicating your consent for the researcher to use your data in their research. There will be no penalty if you choose not to hand in your survey, and your grades for this course will not be impacted.

The expected benefits of the research
The research is expected to provide more insight regarding how individuals respond emotionally during group activities, and subsequent effects on individual and group performance.

Risks to you
The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality
All data collected as a result of this research is treated confidentially. No identifiable information is required on the survey.

Your participation is voluntary
While the activities in this study are compulsory components of your course, you can voluntarily choose to allow your data to be used for research purposes (indicated by handing in your survey at the conclusion of the class). There will be no penalty if you choose not to hand in your survey, and your grades for this course will not be affected.

Questions / further information
If you would like to obtain any further information about this project, please contact Amy Collins at a.collins@griffith.edu.au

The ethical conduct of this research
Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project you should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you
Feedback will be available on request outlining the aggregated results and outcomes of the research. To get this feedback email: a.collins@griffith.edu.au

Thank you for your assistance with this research project.

Please Retain This Information Sheet for Future Reference
YOUR UNIQUE IDENTIFIER

Before you start filling in your responses, it is important that you generate a unique 4 digit code identifier.

Remember, the questionnaires and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you.

For example:

What is the first letter of your mother's first name? E (Mother's name is Ellen)
What is the last letter of your father's first name? N (Father's name is Cameron)
What is the day on which you were born? (two digits) 02 (Birthday is 02/11/90)

EXAMPLE UNIQUE ID IS: EN02

Please create your Unique Identifier using the following information:

What is the first letter of your mother's first name? 
What is the last letter of your father's first name? 
What is the day on which you were born? (two digits) 

YOUR UNIQUE ID IS: 

Part 1

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age? 

Q3. What is your ethnicity? (please circle)

Australian  Australian Aboriginal/Torres Strait Islander
Chinese  Taiwanese  Japanese  Korean
New Zealander  Maori  English  Scottish
Welsh  American  Canadian  African American
Other: ____________

Q4. What is your enrolment status? (please circle)  1. Fulltime  2. Part-time

Q5. What is the length of your work experience?  ____ (Years)  ____ (Months)

Q6. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

<table>
<thead>
<tr>
<th>Very slightly or not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Hostile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Enthusiastic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Proud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>


Part 2 - Winter Survival Exercise

You have just crash-landed in the woods of northern Minnesota and southern Manitoba. It is 11:32am in mid-January. The light plane in which you were travelling crashed on a lake. The pilot and co-pilot were killed. Shortly after the crash the plane sank completely into the lake, with the pilot’s and co-pilot’s bodies inside. None of you is seriously injured, and you are all dry.

The crash came suddenly, before the pilot had time to radio for help or inform anyone of your position. Because the pilot was trying to avoid a storm, you know the plane was considerably off course. The pilot announced shortly before the crash that you were twenty miles northwest of a small town that is the nearest known habitation.
You are in a wilderness area made up of thick woods broken by many lakes and streams. The snow depth varies from above the ankles in windswept areas to knee-deep where it has drifted. The last weather report indicated that the temperature would reach \(-30^\circ\mathrm{C}\) in the daytime and \(-40^\circ\mathrm{C}\) at night. There is plenty of dead wood and twigs in the immediate area. You are dressed in winter clothing appropriate for city wear – suits, pantsuits, street shoes, and overcoats.

While escaping from the plane, several members of your group salvaged twelve items. Your task is to rank these items according to their importance to your survival, starting with 1 for the most important item and ending with 12 for the least important one.

**Rank the following items according to their importance to your survival, starting with 1 for the most important and proceeding to 12 for the least important.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Your Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball of steel wool</td>
<td></td>
</tr>
<tr>
<td>Newspapers (one per person)</td>
<td></td>
</tr>
<tr>
<td>Compass</td>
<td></td>
</tr>
<tr>
<td>Hand axe</td>
<td></td>
</tr>
<tr>
<td>Cigarette lighter (without fluid)</td>
<td></td>
</tr>
<tr>
<td>Loaded .45 caliber pistol</td>
<td></td>
</tr>
<tr>
<td>Sectional air map made of plastic</td>
<td></td>
</tr>
<tr>
<td>6m x 6m piece of heavy-duty canvas</td>
<td></td>
</tr>
<tr>
<td>Extra shirt and pants for each survivor</td>
<td></td>
</tr>
<tr>
<td>Can of shortening</td>
<td></td>
</tr>
<tr>
<td>Quart of 100-proof whiskey</td>
<td></td>
</tr>
<tr>
<td>Family-size chocolate bar (one per person)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Shortening is a type of fat.

**Group Decision-Making Task Instructions**

This is an exercise in group decision making. Your group is to employ the method of group consensus in reaching its decision. This means that the ranking for each of the twelve survival items must be agreed upon by each group member before it becomes a part of the group decision. Consensus is difficult to reach. Therefore, not every ranking will meet with everyone's complete approval. Try, as a group, to make each ranking one with which all group members can at least partially agree.

**You may assume that the number of passengers is the same as the number of persons in your group and that the group has agreed to stick together.**
Rank the following items according to their importance to your survival, starting with 1 for the most important and proceeding to 12 for the least important.

**Your Campus**  Gold Coast  Nathan (please circle)

**Your Tutors Name:**  Catherine  Sue  Tony  Amy  Kathryn (please circle)

**Your Tutorial Starting Time:**  _____ (e.g. 10am)

<table>
<thead>
<tr>
<th>Item</th>
<th>Your Rankings</th>
<th>Group Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball of steel wool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspapers (one per person)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand axe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarette lighter (without fluid)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded .45 caliber pistol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sectional air map made of plastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m x 6m piece of heavy-duty canvas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra shirt and pants for each survivor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can of shortening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quart of 100-proof whiskey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family-size chocolate bar (one per person)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part 3**

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

<table>
<thead>
<tr>
<th>Very slightly or not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Distressed  1 2 3 4 5 11 Irritable  1 2 3 4 5
2. Excited  1 2 3 4 5 12 Alert  1 2 3 4 5
3. Upset  1 2 3 4 5 13 Jittery  1 2 3 4 5
4. Guilty  1 2 3 4 5 14 Attentive  1 2 3 4 5
5. Scared  1 2 3 4 5 15 Nervous  1 2 3 4 5
6. Hostile  1 2 3 4 5 16 Active  1 2 3 4 5
<table>
<thead>
<tr>
<th></th>
<th>Disagree strongly</th>
<th>Disagree a little</th>
<th>Neither agree nor disagree</th>
<th>Agree a little</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<td></td>
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<td>2</td>
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<td>5</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Strong
8. Interested
9. Enthusiastic
10. Proud
17. Ashamed
18. Inspired
19. Determined
20. Afraid

Please answer the following questions about the group you just worked with.

1. How much emotional conflict was there in your group?
2. To what extent were personality clashes evident in your group?
3. How much tension was there in your group?
4. To what extent were there differences of opinions in your group?
5. How frequently were there conflicts about ideas in your group?
6. To what extent did you disagree about the way to do things in your group?
7. How much disagreement was there about procedures in your group?
8. How frequently were there disagreements about who should do what in your group?

Thank you for your participation!

A Study of Emotions During Teamwork – Part 2

Why is the research being conducted?

This study is Part 2 of a larger project examining how emotions influence behaviour within a team.
What you will be asked to do

We will first ask you to record your unique 4 digit code identifier to ensure that we can match your responses to this survey with the data that was collected in Part 1 of the study (while also ensuring your anonymity).

In the web survey, you will be asked to complete a number of questions about your personality and your general experience of emotions. The survey should take about 10-15 minutes.

Consent to Participate

At the conclusion of the web survey, you will be asked to tick a box indicating if you consent for your data to be used in this research. There will be no penalty if you choose not to submit your survey for research, and your grades for this course will not be impacted.

The expected benefits of the research

The research is expected to provide more insight regarding how individuals respond emotionally during team-based tasks. The information you have provided us will help us to understand how to improve employees’ emotional reactions in the workplace.

Risks to you

The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality

All data collected as a result of this research is treated confidentially. No identifiable information is required on the survey. You will be asked to generate a unique 4 digit code (known only to you) so that you can access your results of the survey (while ensuring your anonymity). All computer data files will be password protected.

Your participation is voluntary

While the activities in this study are compulsory components of your course, you can voluntarily choose to allow your data to be used for research purposes (indicated by ticking a box at the conclusion of the survey). There will be no penalty if you choose not to submit your survey for research, and your grades for this course will not be affected.

Questions / further information

If you would like to obtain any further information about this project, please contact Amy Collins at a.collins@griffith.edu.au

The ethical conduct of this research

Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical
conduct of the research project you should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you

Your results for the personality questionnaires in this survey will be made available to you (by posting results alongside the anonymous Unique Identifiers you will generate) so that you can use your scores as part of a self-reflective exercise.

Overall feedback will be available on request outlining the aggregated results and outcomes of the research. To get this feedback email: a.collins@griffith.edu.au

YOUR UNIQUE IDENTIFIER

Before you start filling in your responses, it is important that you generate a unique 4 digit code identifier.

Remember, the questionnaires and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you.

We need to have your unique identifier so we can give you feedback on your responses to this survey, which you will use as part of a self-reflection exercise.

For example:

What is the first letter of your mother's first name? E  (Mother's name is Ellen)
What is the last letter of your father's first name? N  (Father's name is Cameron)
What is the day on which you were born? (two digits) 02  (Birthday is 02/11/90)

EXAMPLE UNIQUE ID IS: EN02

Please create your Unique Identifier using the following information:

What is the first letter of your mother's first name?
What is the last letter of your father's first name?
What is the day on which you were born? (two digits)
YOUR UNIQUE ID IS: ________

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age? ________

Q3. What is your ethnicity? (please circle)

Australian
Australian Aboriginal/Torres Strait Islander
Chinese
Taiwanese
Japanese
Korean
New Zealander
Maori
English
Scottish
Welsh
American
Canadian
African American
Other: __________

Q4. What is your enrolment status? (please circle) 1. Fulltime 2. Part-time

Please indicate your level of agreement about your feelings when working in your presentation team

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neutral</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
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<tr>
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<td>4</td>
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199
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<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can explain the emotions I feel to team members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>I can discuss the emotions I feel with other team members</td>
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<td>5.</td>
<td>I respect the opinion of team members, even if I think they are wrong</td>
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<td>When I am frustrated with fellow team members, I can overcome my frustration</td>
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<td>I give a fair hearing to fellow team members' ideas</td>
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<td>I can read fellow team members' &quot;true&quot; feelings, even if they try to hide them</td>
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<td>3</td>
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<td>I am able to describe accurately the way others in the team are feeling</td>
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<td>7</td>
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<td>11.</td>
<td>When I talk to a team member I can gauge their true feelings</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>12.</td>
<td>I can tell when team members don't mean what they say</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>13.</td>
<td>My enthusiasm can be contagious for members of a team</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<td>6</td>
<td>7</td>
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<tr>
<td>14.</td>
<td>I am able to cheer team members up when they are feeling down</td>
<td>1</td>
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<tr>
<td>15</td>
<td>I can get fellow team members to share my keenness for a project</td>
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<tr>
<td>16</td>
<td>I can provide the 'spark' to get fellow team members enthusiastic</td>
<td></td>
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</tr>
</tbody>
</table>
APPENDIX B: STUDY 2 MATERIALS

Working in Teams – Part 1

<table>
<thead>
<tr>
<th>Student Researcher:</th>
<th>Chief Investigators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Collins</td>
<td>Prof Peter Jordan</td>
</tr>
<tr>
<td>PhD Candidate</td>
<td>Griffith Business School</td>
</tr>
<tr>
<td>Griffith Business School</td>
<td>Griffith University</td>
</tr>
<tr>
<td>Griffith University</td>
<td>+61 7 3735 3717</td>
</tr>
<tr>
<td><a href="mailto:A.Collins@griffith.edu.au">A.Collins@griffith.edu.au</a></td>
<td>Dr Ashlea Troth</td>
</tr>
<tr>
<td></td>
<td>Griffith Business School</td>
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<td>Griffith University</td>
</tr>
<tr>
<td></td>
<td>+61 7 3735 5241</td>
</tr>
<tr>
<td></td>
<td>Dr Sandra Lawrence</td>
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<td></td>
<td>Griffith Business School</td>
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<td></td>
<td>Griffith University</td>
</tr>
<tr>
<td></td>
<td>+61 7 3735 7132</td>
</tr>
</tbody>
</table>

Why is the research being conducted?

This study is Part 1 of a larger project examining how emotions influence behaviour within a team.

Your participation is voluntary

Students who wish to participate will have the opportunity to receive feedback on their scores which can be used in the self-reflective assessment item. However, students who don’t wish to participate can fulfil this assessment component through an alternative assessment item (designed to be comparable in educational value and time demand). Students who exercise this option will in no way be disadvantaged in their grades for this assessment.

What you will be asked to do

We will first ask you to generate a unique 4 digit code identifier to ensure that we can match your responses to this survey with the data that will be collected in Part 2 of the study (while also ensuring your anonymity).

In the web survey, you will be asked to complete a number of questions about your personality and your general experience of emotions. The survey should take about 20-25 minutes.

Consent to Participate

Completing this survey will be taken as an indication that you consent to participate in this research. There will be no penalty if you choose not to participate in this research, and your grades for this course will not be impacted.

The expected benefits of the research

The research is expected to provide more insight regarding how individuals respond emotionally during team-based tasks. The information you have provided us will help us to understand how to improve employees’ emotional reactions in the workplace.

Risks to you
The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality

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Overall feedback will be available on request outlining the aggregated results and outcomes of the research. To get this feedback email: a.collins@griffith.edu.au

Your results for the personality questionnaires in this survey will be made available to you (by posting results alongside the anonymous Unique Identifiers you will generate) so that you can use your scores as part of a self-reflective exercise.

Thank you for your assistance with this research project.

YOUR UNIQUE IDENTIFIER

Before you start filling in your responses, it is important that you generate a unique 4 digit code identifier.

Remember, the questionnaires and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you.
We need to have your unique identifier so we can give you feedback on your responses to this survey, which you can use as part of a self-reflection exercise.

For example:

What is the first letter of your mother's first name? E (Mother's name is Ellen)

What is the last letter of your father's first name? N (Father's name is Cameron)

What is the day on which you were born? (two digits) 02 (Birthday is 02/11/90)

EXAMPLE UNIQUE ID IS: EN02

Please create your Unique Identifier using the following information:

What is the first letter of your mother's first name? 

What is the last letter of your father's first name? 

What is the day on which you were born? (two digits) 

YOUR UNIQUE ID IS: ________

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age? ________

Q3. What is your ethnicity? (please circle)

Australian
Australian Aboriginal/Torres Strait Islander
Chinese
Taiwanese
Japanese
Korean
New Zealander
Maori
English
Scottish
Welsh
American
Canadian
African American
Other: ______________

Q4. What is your enrolment status? (please circle) 1. Fulltime 2. Part-time

Please indicate your level of agreement about your feelings when working in teams

<table>
<thead>
<tr>
<th>Strongly disagree</th>
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<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>1. I respect the opinion of team members, even if I think they are wrong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>2. I can explain the emotions I feel to team members</td>
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<td>3. I can read fellow team members' &quot;true&quot; feelings, even if they try to hide them</td>
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<tr>
<td>8.</td>
<td>My enthusiasm can be contagious for members of a team</td>
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<tr>
<td>9.</td>
<td>When I talk to a team member I can gauge their true feelings from their body</td>
<td>1</td>
<td>2</td>
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<td>I can get fellow team members to share my keenness for a project</td>
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This scale consists of a number of words that describe different feelings and emotions.

Please indicate to what extent you generally feel this way, that is, how you feel on average

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<th>Quite a bit</th>
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<tbody>
<tr>
<td>1. Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Thank you for your assistance!

Remember, feedback will be made available by posting your results alongside the Unique ID you generated, so you can use your scores as part of a self-reflection exercise

Working in Teams - Part 2

Why is the research being conducted?
This project examines how the emotions you feel and display during a group activity impacts on your behaviour within the group, and your decision-making abilities.

What you will be asked to do
You will be asked to participate in:
(1) A team brainstorming exercise where you will generate solutions to novel problems (approx 15 mins)
(2) Complete a short survey about your experiences during the team exercise (approx 5 mins)

Consent to Participate
By returning the survey, you will be indicating your consent for the researchers to use your data in their research. There will be no penalty if you choose not to hand in your survey, and your grades for this course will not be impacted.

The expected benefits of the research
The research is expected to provide more insight regarding how individuals respond emotionally during group activities, and subsequent effects on individual and group performance.

Risks to you
The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality
All data collected as a result of this research is treated confidentially. No identifiable information is required on the survey.

Your participation is voluntary
While the activities in this study are components of your tutorial activities, you can voluntarily choose to allow your data to be used for research purposes (indicated by handing in your survey at the conclusion of the class). There will be no penalty if you choose not to hand in your survey, and your grades for this course will not be affected.

Questions / further information
If you would like to obtain any further information about this project, please contact Amy Collins at a.collins@griffith.edu.au

The ethical conduct of this research
Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project you should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you
Feedback will be available on request outlining the aggregated results and outcomes of the research. To get this feedback email: a.collins@griffith.edu.au

Thank you for your assistance with this research project.

Please Retain This Information Sheet for Future Reference

YOUR UNIQUE IDENTIFIER
Before you start filling in your responses, it is important that you generate a unique 4 digit code identifier.

Remember, the questionnaires and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you.

For example:
What is the first letter of your mother's first name? (Mother's name is Ellen)

What is the last letter of your father's first name? N (Father's name is Cameron)

What is the day on which you were born? (two digits) 02 (Birthday is 02/11/90)

EXAMPLE UNIQUE ID IS: EN02

Please create your Unique Identifier using the following information:

What is the first letter of your mother's first name? 

What is the last letter of your father's first name? 

What is the day on which you were born? (two digits) 

YOUR UNIQUE ID IS: ________

Part 1

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age?________

Q3. What is your ethnicity? (please circle)

Australian  Australian Aboriginal/Torres Strait Islander
Chinese       Taiwanese       Japanese       Korean
New Zealander Maori        English        Scottish
Welsh         American       Canadian       African American
Other: ____________

Q4. What is your enrolment status? (please circle) 1. Fulltime 2. Part-time

Q5. What is the length of your work experience? _______ (Years) _______ (Months)

Q8. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.
<table>
<thead>
<tr>
<th>Very slightly or not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Distressed</td>
<td>1 2 3</td>
<td>4 5</td>
<td>11. Irritable</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Excited</td>
<td>1 2 3</td>
<td>4 5</td>
<td>12. Alert</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Upset</td>
<td>1 2 3</td>
<td>4 5</td>
<td>13. Jittery</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Guilty</td>
<td>1 2 3</td>
<td>4 5</td>
<td>14. Attentive</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Scared</td>
<td>1 2 3</td>
<td>4 5</td>
<td>15. Nervous</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Hostile</td>
<td>1 2 3</td>
<td>4 5</td>
<td>16. Active</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Strong</td>
<td>1 2 3</td>
<td>4 5</td>
<td>17. Ashamed</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. Interested</td>
<td>1 2 3</td>
<td>4 5</td>
<td>18. Inspired</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. Enthusiastic</td>
<td>1 2 3</td>
<td>4 5</td>
<td>19. Determined</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. Proud</td>
<td>1 2 3</td>
<td>4 5</td>
<td>20. Afraid</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

**Part 2 – Brainstorming Exercise**

Your tutors will distribute the Brainstorming Exercise for you to complete in your team.

[Admin Instructions – Varied between conditions]

**Option 1.** Teamwork often relies on honest communication. It is extremely important for the sake of quality communication that you are authentic and “real” during the team task. Therefore, if you get irritated or stressed, don’t be afraid to show your team members how you feel.

**Option 2.** Teamwork often relies on effective communication. It is extremely important for the sake of quality communication that if you have any negative feelings or reactions during the team task, please try your best not to let those feelings show, and instead always be friendly, enthusiastic, and show positive emotion despite circumstances. Therefore, even if you get irritated or stressed, don’t let your team members know you’re feeling bad – instead, smile and be friendly.

**Part 3**
Q1. Please read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

<table>
<thead>
<tr>
<th>Very slightly or not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distressed</td>
<td>1 2 3 4 5</td>
<td>11. Irritable</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. Excited</td>
<td>1 2 3 4 5</td>
<td>12. Alert</td>
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</tr>
<tr>
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<tr>
<td>5. Scared</td>
<td>1 2 3 4 5</td>
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<td></td>
</tr>
<tr>
<td>6. Hostile</td>
<td>1 2 3 4 5</td>
<td>16. Active</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Strong</td>
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<td>17. Ashamed</td>
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<td></td>
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<tr>
<td>8. Interested</td>
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<td>18. Inspired</td>
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<td></td>
</tr>
<tr>
<td>9. Enthusiastic</td>
<td>1 2 3 4 5</td>
<td>19. Determined</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. Proud</td>
<td>1 2 3 4 5</td>
<td>20. Afraid</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Q2. Please indicate to what extent you agree with the following statements

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree a little</th>
<th>Neither agree nor disagree</th>
<th>Agree a little</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am satisfied with my team members</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I am pleased with the way my team members and I worked together on the brainstorming task</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I am very satisfied with working in this team</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am satisfied with my team’s performance on the brainstorming task</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I am satisfied with the quality of my team’s brainstorming</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q3. Please answer the following questions about emotional displays during the brainstorming task, regarding the behaviours of your team as a whole

<table>
<thead>
<tr>
<th>Disagree strongly</th>
<th>Disagree a little</th>
<th>Neither agree nor disagree</th>
<th>Agree a little</th>
<th>Agree strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. My team remained positive during the brainstorming task, even though we may have been feeling otherwise</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. My team kept a positive attitude despite obstacles or difficulties</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3 My team let negative events affect our mood</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4 My team displayed excitement and enthusiasm during the task</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5 My team monitored their emotions to make sure they were appropriate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6 My team concealed negative feelings about the task or team members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
APPENDIX C: STUDY 3 MATERIALS

Emotions & Teamwork – Part 1

Why is the research being conducted?
This study is Part 2 of a larger project examining how office interactions and individuals' personality, attitudes and abilities influence their emotional reactions and workplace behaviours.

What you will be asked to do
This is Part 2 of a three part study on emotional reactions to office interactions. You will be asked to record your unique 4 digit code identifier to ensure that we can match your responses to this survey with the data you provide(d) at other time points throughout the study (while also ensuring your anonymity). In this task, we ask you to respond to basic demographic questions and measures assessing your mood as well as engage in decisions regarding organizational layoffs.

Your participation is voluntary
Students who wish to participate will have the opportunity to receive feedback on their scores which can be used in the self-reflective assessment item. However, students who don't wish to participate can fulfill this assessment component through an alternative assessment item (designed to be comparable in educational value and time demand). Students who exercise this option will in no way be disadvantaged in their grades for this assessment.

Consent to Participate
Completing this survey will be taken as an indication that you consent to participate in this research. There will be no penalty if you choose not to participate in this research, and your grades for this course will not be impacted.

The expected benefits of the research
The research is expected to provide more insight into how individuals respond emotionally to workplace interactions. The information you provide us will help us to understand how to improve employees' emotional reactions in the workplace.

Risks to you
The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality
All data collected as a result of this research is treated confidentially. No identifiable information is required on the survey. You will be asked to generate a unique 4 digit code (known only to you) so that your data can be matched across Part 1, Part 2 and Part 3 of this study. All survey data will be stored in computer data files that are password protected.

Questions / further information
If you would like to obtain any further information about this project, please contact Dr Sandra Lawrence on 3735 7132 or s.lawrence@griffith.edu.au.

The ethical conduct of this research
Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project you should contact the Manager, Research Ethics on 3735 5585 or research.ethics@griffith.edu.au.

Feedback to you
Individual feedback will be immediately available to you and aggregated feedback will be made available to you in the coming weeks. If you have any queries about the feedback, or would like to gain access to a more complete report of the aggregated findings, please contact the researcher at s.lawrence@griffith.edu.au.
YOUR UNIQUE 4 DIGIT CODE IDENTIFIER

Before you start the survey, it is important that you enter your 4 digit unique identifier in the space provided below. Remember, the survey and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you. We need to have your unique identifier so we can match up your responses in this survey with those you provide in other parts of the study.

Please record your anonymous identifier (created at time one) using the following information:

For example:

What is the first letter of your mother’s first name? (Mother’s name is Ellen)
What is the last letter of your father’s first name? (Father’s name is Cameron)
What is the day on which you were born? (two digits) (Birthday is 02/11/90)

UNIQUE IDENTIFIER = E N 0 2

What the first letter of your mother’s first name? __________
What is the last letter your father’s first name? _______
What is the day on which you were born? (two digits) _____ _____

Transfer this 4 digit identifier code to the boxes on top of the next page.

After recording your unique identifier in the space provided, remember to detach your information sheet and this page for your reference. Please then begin answering the survey questions – writing your 5 digit unique identifier in the boxes on the top right corner of the next page.

Thank you for your assistance with this research project.
Part 1. Demographic Data

Firstly, we need some information about you. This information will be used to describe, in general terms, the group of people who complete the survey.

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age? __________

Q3. What time do you attend your 2008EHR tutorial? GC NATHAN (Circle one) Time___00 am / pm

Please indicate how you are feeling right now with regards to each of these mood states.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>1. Interested</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. Distressed</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. Excited</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. Upset</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Anger</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. Strong</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Disgusted</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. Guilty</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. Scared</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. Hostile</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. Enthusiastic</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. Proud</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

PLEASE WAIT FOR FURTHER INSTRUCTIONS BEFORE FILLING OUT THE SURVEY ITEMS ON THE NEXT PAGE...
Part 2. Individual decision making

Please read the following instructions carefully. If you require assistance, please don’t hesitate to ask.

Step 1: Read the company situation. Use the data in Table 1 and the descriptions of the employees to help you make a decision regarding who should be laid off in the company.

Please then make an individual ranking of the employees from 1 (the first to be laid off) to 5 (the last to be laid off) on Form #1.

YOU HAVE 10 MINUTES FOR THIS INDIVIDUAL TASK.

Company Situation:
Enigma Engineering Company

The Enigma Engineering Company is a medium-sized manufacturing company located in the suburbs of Chicago, Illinois. The company is non-unionized and has attempted during the past two years to incorporate an objective performance-review system that has been designed purposefully to provide feedback to employees. The system is designed to be objective, time-oriented, and representative.

The loss of a contract bid to a competitor has forced the Enigma management to consider laying off one, two, or three of the poorest performers next week in the circuit board unit. This unit produces circuit boards that are sold to electronic firms. The layoff may only be temporary, but management wants to be sure that they have been fair in presenting an objectively based decision to the employees.

The people in the unit to be cut back are:

1. **Dave Fram**: Age 50; single; finished university while working; 15 years with the company

2. **Carla Peters**: Age 36; married; four children; high school graduate; three years with the company

3. **Ray Salgado**: Age 40; married; one child; high school graduate; four years with the company

4. **Valarie Green**: Age 39; divorced; two children; 2 years of university; 7 years with the company

5. **Richard Chu**: Age 42; married; no children; one year of university; nine years with the company
<table>
<thead>
<tr>
<th>Employee</th>
<th>Average Weekly Output</th>
<th>% Rejects</th>
<th>% Absences</th>
<th>Cooperative Attitude</th>
<th>Loyalty</th>
<th>Potential for Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Fram</td>
<td>40.4</td>
<td>4.7</td>
<td>13.2</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
</tr>
<tr>
<td>Carla Peters</td>
<td>40.2</td>
<td>9.6</td>
<td>9.3</td>
<td>Poor</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Ray Salgado</td>
<td>39.6</td>
<td>3.4</td>
<td>6.1</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Valarie Green</td>
<td>36.2</td>
<td>4.8</td>
<td>5.0</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Richard Chu</td>
<td>45.2</td>
<td>7.0</td>
<td>3.6</td>
<td>Fair</td>
<td>Fair</td>
<td>Good</td>
</tr>
</tbody>
</table>

Table 1. Enigma Performance Review Data; Factors Evaluated by Supervisor

Additional Information
(1) Higher scores on the Average Weekly Output indicate that the employee produces more output
(2) Lower scores on the % Rejects indicates fewer rejects
(3) Lower scores on the % Absences indicates fewer absences

Please indicate your individual ranking of each of the employees from 1 (the first to be laid off) to 5 (the last to be laid off).

Form 1
Enigma Rating Form

<table>
<thead>
<tr>
<th>Employee</th>
<th>Individual Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Fram</td>
<td></td>
</tr>
<tr>
<td>C. Peters</td>
<td></td>
</tr>
<tr>
<td>R. Salgado</td>
<td></td>
</tr>
<tr>
<td>V. Green</td>
<td></td>
</tr>
<tr>
<td>R. Chu</td>
<td></td>
</tr>
</tbody>
</table>
Please indicate how you felt during the individual exercise with regards to each of these mood states.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Excited</td>
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<td>2</td>
<td>3</td>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Anger</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Disgusted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
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<td>8. Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>9. Scared</td>
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<td>2</td>
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<td>10. Hostile</td>
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<td>11. Enthusiastic</td>
<td>1</td>
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<td>12. Proud</td>
<td>1</td>
<td>2</td>
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<tr>
<td>13. Irritable</td>
<td>1</td>
<td>2</td>
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<tr>
<td>14. Alert</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>15. Ashamed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>16. Inspired</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>17. Scornful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>18. Determined</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>19. Nervous</td>
<td>1</td>
<td>2</td>
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<tr>
<td>20. Loathing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>21. Attentive</td>
<td>1</td>
<td>2</td>
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<tr>
<td>22. Jittery</td>
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<td>2</td>
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<td>23. Active</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>24. Afraid</td>
<td>1</td>
<td>2</td>
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</table>

**Part 3. Group persuasion exercise**

**Step 2:** Now work with your presentation group to persuade each other as to the best solution.

After discussing the case with your group members and reaching a consensus, indicate your team ranking of each of the employees from 1 (the first to be laid off) to 5 (the last to be laid off).

Remember, a consensus decision involves reaching mutual agreement by discussion (using persuasive techniques) until all agree on the final decision. Follow these instructions for reaching consensus:

1. Try to reach the best possible decision.
2. Avoid changing your mind simply to reach an agreement and to avoid conflict, but support solutions with which you have been persuaded to agree.
3. This exercise is supposed to give you the experience of being persuaded and you persuading others. Avoid “conflict reducing” techniques, such as majority vote, averaging, or trading for your decision.
4. View differences of opinion as a help rather than a hindrance in decision making.

**Step 3:** Record your team decision on Form #2 (team ranking of the employees from 1 to 5)

YOU HAVE 10 MINUTES FOR THIS GROUP TASK.
### Form 2
**Enigma Rating Form**

<table>
<thead>
<tr>
<th>Employee</th>
<th>Team Rating</th>
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<tbody>
<tr>
<td>D. Fram</td>
<td></td>
</tr>
<tr>
<td>C. Peters</td>
<td></td>
</tr>
<tr>
<td>R. Salgado</td>
<td></td>
</tr>
<tr>
<td>V. Green</td>
<td></td>
</tr>
<tr>
<td>R. Chu</td>
<td></td>
</tr>
</tbody>
</table>

Please indicate how you felt during the group exercise with regards to each of these mood states.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>3.</td>
<td>1</td>
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<tr>
<td>Excited</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>4.</td>
<td>1</td>
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<tr>
<td>Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>5.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Anger</td>
<td>1</td>
<td>2</td>
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<tr>
<td>6.</td>
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<tr>
<td>Strong</td>
<td>1</td>
<td>2</td>
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<td>7.</td>
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<tr>
<td>Disgusted</td>
<td>1</td>
<td>2</td>
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<td>8.</td>
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<tr>
<td>Guilty</td>
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<td>9.</td>
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<tr>
<td>Scared</td>
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<td>10.</td>
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<tr>
<td>Hostile</td>
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<td>11.</td>
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<tr>
<td>Enthusiastic</td>
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<td>12.</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>Proud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>
### Part 4. Working with the group.

We are interested in how much conflict you experienced in your work group during the task. Please rate the amount with which your work unit experienced each of the following:

<table>
<thead>
<tr>
<th>None</th>
<th>A Little Amount</th>
<th>Some</th>
<th>Moderate Amount</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. How much friction was there in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. How much were personality conflicts evident in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. How much tension was there among members in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. How much emotional conflict was there among members of your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. How often did people in your work unit disagree about opinions regarding the work being done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. How frequently were there conflicts about ideas in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. How much conflict about the work you do was there in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. To what extent were there differences of opinions in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>

THE END!!

### Emotions & Teamwork – Part 2

**Why is the research being conducted?**

This study is Part 2 of a larger project examining how office interactions and individuals' personality, attitudes and abilities influence their emotional reactions and workplace behaviours.

**What you will be asked to do**

This is Part 2 of a three part study on emotional reactions to office interactions. You will be asked to record your unique 4 digit code identifier to ensure that we can match your responses to this survey with the data you provide(d) at other time points throughout the study (while also ensuring your anonymity). In this task, we ask you to respond to basic
demographic questions and measures assessing your mood as well as engage in decisions regarding organizational layoffs.

Your participation is voluntary
Students who wish to participate will have the opportunity to receive feedback on their scores which can be used in the self-reflective assessment item. However, students who don’t wish to participate can fulfil this assessment component through an alternative assessment item (designed to be comparable in educational value and time demand). Students who exercise this option will in no way be disadvantaged in their grades for this assessment.

Consent to Participate
Completing this survey will be taken as an indication that you consent to participate in this research. There will be no penalty if you choose not to participate in this research, and your grades for this course will not be impacted.

The expected benefits of the research
The research is expected to provide more insight into how individuals respond emotionally to workplace interactions. The information you provide us will help us to understand how to improve employees’ emotional reactions in the workplace.

Risks to you
The risks of this research have been assessed and are not above those associated with everyday living.

Your confidentiality
All data collected as a result of this research is treated confidentially. No identifiable information is required on the survey. You will be asked to generate a unique 4 digit code (known only to you) so that your data can be matched across Part 1, Part 2 and Part 3 of this study. All survey data will be stored in computer data files that are password protected.

Questions / further information
If you would like to obtain any further information about this project, please contact Dr Sandra Lawrence on 3735 7132 or s.lawrence@griffith.edu.au.

The ethical conduct of this research
Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project you should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you
Individual feedback will be immediately available to you and aggregated feedback will be made available to you in the coming weeks. If you have any queries about the feedback, or would like to gain access to a more complete report of the aggregated findings, please contact the researcher at s.lawrence@griffith.edu.au.
YOUR UNIQUE 4 DIGIT CODE IDENTIFIER

Before you start the survey, it is important that you enter your 4 digit unique identifier in the space provided below. Remember, the survey and your answers to it are completely confidential. The only identifier is a number unique to yourself and known only by you. We need to have your unique identifier so we can match up your responses in this survey with those you provide in other parts of the study.

Please record your anonymous identifier (created at time one) using the following information:

For example:

What is the first letter of your mother's first name? (Mother's name is Ellen)
What is the last letter of your father's first name? (Father's name is Cameron)
What is the day on which you were born? (two digits) (Birthday is 02/11/90)

UNIQUE IDENTIFIER = E N 0 2

What the first letter of your mother's first name? _______  Transfer this 4
digit identifier code to the boxes on top of the next page.
What is the last letter your father's first name? _______
What is the day on which you were born? (two digits) _______  

After recording your unique identifier in the space provided, remember to detach your information sheet and this page for your reference. Please then begin answering the survey questions – writing your 5 digit unique identifier in the boxes on the top right corner of the next page.

Thank you for your assistance with this research project.

PLEASE PRINT YOUR UNIQUE IDENTIFIER HERE:

____  ____  ____  ____

Part 1. Demographic Data

Firstly, we need some information about you. This information will be used to describe, in general terms, the group of people who complete the survey.

Q1. What is your gender? (please circle) 1. Male 2. Female

Q2. What is your age? _________
Q3. What time do you attend your 2008EHR tutorial? GC NATHAN (Circle one) Time____.00 am / pm

In this test, you will be presented with a few brief details about an emotional situation, and asked to choose from four responses the most effective course of action to manage both the emotions the person is feeling and the problems they face in that situation.

Although more than one course of action might be acceptable, you are asked to choose what you think the most effective response for that person in that situation would be.

Remember, you are not necessarily choosing what you would do, or the nicest thing to do, but choosing the most effective response for that situation.

<p>| | |</p>
<table>
<thead>
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</table>
| 1. Pete has specific skills that his workmates do not and he feels that his workload is higher because of it. What action would be the most effective for Pete? | (a) Speak to his boss about this.  
(b) Start looking for a new job.  
(c) Be very proud of his unique skills.  
(d) Speak to his workmates about this. |
| 2. Wai-Hin and Connie have shared an office for years but Wai-Hin gets a new job and Connie loses contact with her. What action would be the most effective for Connie? | (a) Just accept that she is gone and the friendship is over.  
(b) Ring Wai-Hin and ask her out for lunch or coffee to catch up.  
(c) Contact Wai-Hin and arrange to catch up but also make friends with her replacement.  
(d) Spend time getting to know the other people in the office, and strike up new friendships. |
| 3. Surbhi starts a new job where she doesn’t know anyone and finds that no one is particularly friendly. What action would be the most effective for Surbhi? | (a) Have fun with his friends outside of work hours.  
(b) Concentrate on doing his work well at the new job.  
(c) Make an effort to talk to people and be friendly himself.  
(d) Leave the job and find one with a better environment. |
| 4. Andre moves away from the city his friends and family are in. He finds his friends make less effort to keep in contact than he thought they would. What action would be the most effective for Andre? | (a) Try to adjust to life in the new city by joining clubs and activities there.  
(b) He should make the effort to contact them, but also try to meet people in his new city.  
(c) Let go of his old friends, who have shown themselves to be unreliable.  
(d) Tell his friends he is disappointed in them for not contacting him. |
| 5. Clayton has been overseas for a long time and returns to visit his family. So much has changed that Clayton feels left out. What action would be the most effective for Clayton? | (a) Nothing – it will sort itself out soon enough.  
(b) Tell his family he feels left out.  
(c) Spend time listening and getting involved again.  
(d) Reflect that relationships can change with time. |
| 6. Daniel has been accepted for a prestigious position in a different country from his family, who he is close to. He and his wife decide it is | (a) Realize he shouldn’t have applied for the job if he didn’t want to leave.  
(b) Set up a system for staying in touch, like |
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Action</th>
</tr>
</thead>
</table>
| 7. Mei Ling answers the phone and hears that close relatives are in hospital critically ill. *What action would be the most effective for Mei Ling?* | (a) Let herself cry and express emotion for as long as she feels like.  
(b) Speak to other family to calm herself and find out what is happening, then visit the hospital.  
(c) There is nothing she can do.  
(d) Visit the hospital and ask staff about their condition. |
| 8. Upon entering full-time study, Vincent cannot afford the time or money he used to spend on water-polo training, which he was quite good at. Although he enjoys full-time study, he misses training. *What action would be the most effective for Vincent?* | (a) Concentrate on studying hard, to pass his course.  
(b) See if there is a local league or a less expensive and less time-consuming sport.  
(c) Think deeply about whether sport or study is more important to him.  
(d) Find out about sporting scholarships or bursaries. |
| 9. Greg has just gone back to university after a lapse of several years. He is surrounded by younger students who seem very confident about their ability and he is unsure whether he can compete with them. *What action would be the most effective for Greg?* | (a) Focus on his life outside the university.  
(b) Study hard and attend all lectures.  
(c) Talk to others in his situation.  
(d) Realize he is better than the younger students as he has more life experience. |
| 10. Shona has not spoken to her nephew for months, whereas when he was younger they were very close. She rings him but he can only talk for five minutes. *What action would be the most effective for Shona?* | (a) Realize that he is growing up and might not want to spend so much time with his family any more.  
(b) Make plans to drop by and visit him in person and have a good chat.  
(c) Understand that relationships change, but keep calling him from time to time.  
(d) Be upset about it, but realize there is nothing she can do. |
| 11. Joel has always dealt with one particular client but on a very complex job his boss gives the task to a co-worker instead. Joel wonders whether his boss thinks he can’t handle the important jobs. *What action would be the most effective for Joel?* | (a) Believe he is performing well and will be given the next complex job.  
(b) Do good work so that he will be given the complex tasks in future.  
(c) Ask his boss why the co-worker was given the job.  
(d) Not worry about this unless it happens again. |
| 12. Hasina is overseas when she finds out that her father has passed away from an illness he has had for years. *What action would be the most effective for Hasina?* | (a) Contact her close relatives for information and support.  
(b) Try not to think about it, going on with her daily life as best she can.  
(c) Feel terrible that she left the country at such a time.  
(d) Think deeply about the more profound meaning of this loss. |
| 13. Mina and her sister-in-law normally get along quite well, and the sister-in-law regularly baby-sits for her for a small fee. Lately she has also been cleaning away cobwebs, commenting. *What action would be the most effective for Mina?* | (a) Tell her sister-in-law these comments upset her.  
(b) Get a new babysitter.  
(c) Be grateful her house is being cleaned for |
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<tr>
<td><strong>on the mess, which Mina finds insulting. What action would be the most effective for Mina?</strong></td>
<td>(d) Tell her only to baby-sit, not to clean.</td>
<td></td>
</tr>
<tr>
<td>14. Juno is fairly sure his company is going down and his job is under threat. It is a large company and nothing official has been said. <strong>What action would be the most effective for Juno?</strong></td>
<td>(a) Find out what is happening and discuss his concerns with his family.</td>
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<td></td>
<td>(b) Try to keep the company afloat by working harder.</td>
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<td></td>
<td>(c) Start applying for other jobs.</td>
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<td></td>
<td>(d) Think of these events as an opportunity for a new start.</td>
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<td>15. Mallory moves from a small company to a very large one, where there is little personal contact, which she misses. <strong>What action would be the most effective for Mallory?</strong></td>
<td>(a) Talk to her workmates, try to create social contacts and make friends.</td>
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<td></td>
<td>(b) Start looking for a new job so she can leave that environment.</td>
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<td></td>
<td>(c) Just give it time, and things will be okay.</td>
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<td></td>
<td>(d) Concentrate on her outside-work friends and colleagues from previous jobs.</td>
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<tr>
<td>16. Blair and Flynn usually go to a cafe after the working week and chat about what's going on in the company. After Blair's job is moved to a different section in the company, he stops coming to the cafe. Flynn misses these Friday talks. <strong>What action would be the most effective for Flynn?</strong></td>
<td>(a) Go to the cafe or socialize with other workers.</td>
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<td>(b) Don't worry about it, ignore the changes and let Blair be.</td>
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<td>(c) Not talk to Blair again.</td>
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<td>(d) Invite Blair again, maybe rescheduling for another time.</td>
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<tr>
<td>17. Michelle's friend Dara is moving overseas to live with her partner. They have been good friends for many years and Dara is unlikely to come back. <strong>What action would be the most effective for Michelle?</strong></td>
<td>(a) Forget about Dara.</td>
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<td></td>
<td>(b) Spend time with other friends, keeping herself busy.</td>
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<td>(c) Think that Dara and her partner will return soon.</td>
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<td>(d) Make sure she keeps in contact through email, phone or letter writing.</td>
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<tr>
<td>18. Hannah's access to essential resources has been delayed and her work is way behind schedule. Her progress report makes no mention of the lack of resources. <strong>What action would be the most effective for Hannah?</strong></td>
<td>(a) Explain the lack of resources to her boss or to management.</td>
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<td>(b) Learn that she should plan ahead for next time.</td>
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<td>(c) Document the lack of resources in her progress report.</td>
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<td></td>
<td>(d) Don't worry about it.</td>
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<tr>
<td>19. Jacob is having a large family gathering to celebrate him moving into his new home. He wants the day to go smoothly and is a little nervous about it. <strong>What action would be the most effective for Jacob?</strong></td>
<td>(a) Talk to friends or relatives to ease his worries.</td>
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<td></td>
<td>(b) Try to calm down, perhaps go for a short walk or meditate.</td>
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<td></td>
<td>(c) Prepare ahead of time so he has everything he needs available.</td>
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<td></td>
<td>(d) Accept that things aren't going to be perfect but the family will understand.</td>
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<tr>
<td>20. Julie hasn't seen Ka for ages and looks forward to their weekend trip away. However, Ka has changed a lot and Julie finds that she is no longer an interesting companion. <strong>What</strong></td>
<td>(a) Cancel the trip and go home.</td>
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<td></td>
<td>(b) Realize that it is time to give up the friendship and move on.</td>
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<td></td>
<td>(c) Understand that people change, so move on,</td>
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</tbody>
</table>
**action would be the most effective for Julie?**

but remember the good times.
(d) Concentrate on her other, more rewarding friendships.

The following questions each describe a situation, and ask you to choose which of five emotions is most likely to result from that situation.

*Here is an example:*

Clara receives a gift. Clara is most likely to feel?

(a) happy (b) angry (c) frightened (d) bored (e) hungry

If you think Clara would feel happy, you would mark option A and then move to the next question.

| 1. Xavier completes a difficult task on time and under budget. *Xavier is most likely to feel?* | (a) Surprise  
(b) Pride  
(c) Relief  
(d) Hope  
(e) Joy |
|---|---|
| 2. An irritating neighbour of Eve’s moves to another state. *Eve is most likely to feel?* | (a) Regret  
(b) Hope  
(c) Relief  
(d) Sadness  
(e) Joy |
| 3. Edna’s workmate organizes a goodbye party for Edna, who is going on holidays. *Edna is most likely to feel?* | (a) Surprise  
(b) Gratitude  
(c) Pride  
(d) Hope  
(e) Relief |
| 4. Something unpleasant is happening. Neither the person involved, nor anyone else can make it stop. *The person involved is most likely to feel?* | (a) Guilty  
(b) Distressed  
(c) Sad  
(d) Scared  
(e) Angry |
| 5. If the current situation continues, Denise’s employer will probably be able to move her job to a location much closer to her home, which she really wants. *Denise is most likely to feel?* | (a) Distress  
(b) Joy  
(c) Surprise  
(d) Hope  
(e) Fear |
| 6. Song finds out that a friend of hers has borrowed money from others to pay urgent bills, but has in fact used the money for less serious purposes. *Song is most likely to feel?* | (a) Anger  
(b) Excitement  
(c) Contempt  
(d) Shame  
(e) Horror |
| 7. Leya works as a trouble-shooter. She is presented with a standard looking problem but cannot work out how to solve it. *Leya is* | (a) Confused  
(b) Frustrated  
(c) Surprised |
<table>
<thead>
<tr>
<th><strong>most likely to feel?</strong></th>
<th><strong>Phil's workmate Bart asks Phil to lie for him about money Bart has been stealing from the company. Phil does not agree. Phil is most likely to feel?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) Relieved</td>
<td>(a) Excitement</td>
</tr>
<tr>
<td>(e) Distressed</td>
<td>(b) Anger</td>
</tr>
<tr>
<td></td>
<td>(c) Horror</td>
</tr>
<tr>
<td></td>
<td>(d) Contempt</td>
</tr>
<tr>
<td></td>
<td>(e) Shame</td>
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<tr>
<th><strong>Jim enjoys spending Saturdays playing with his children in the park. This year they have sporting activities on Saturdays and cannot go to the park with him any more. Jim is most likely to feel?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Angry</td>
</tr>
<tr>
<td>(b) Sad</td>
</tr>
<tr>
<td>(c) Frustrated</td>
</tr>
<tr>
<td>(d) Distressed</td>
</tr>
<tr>
<td>(e) Ashamed</td>
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</tbody>
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<tr>
<th><strong>Megan is looking to buy a house. Something happened and she felt regret. What is most likely to have happened?</strong></th>
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<tbody>
<tr>
<td>(a) She didn't make an offer on a house she wanted, and now she is trying to find out if it is too late.</td>
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<tr>
<td>(b) She found a house she liked that she didn't think she would find.</td>
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<td>(c) She couldn't make an offer on a house she liked because the bank didn't get her the money in time.</td>
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<tr>
<td>(d) She didn't make an offer on a house she liked and now someone else has bought it.</td>
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<tr>
<td>(e) She made an offer on a house and is waiting to see if it is accepted.</td>
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</tbody>
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<tr>
<th><strong>Mary was working at her desk. Something happened that caused her to feel surprised. What is most likely to have happened?</strong></th>
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<tbody>
<tr>
<td>(a) Her work-mate told a silly joke.</td>
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<td>(b) She was working on a new task she hadn't dealt with before.</td>
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<td>(c) She found some results that were different from what she thought they would be.</td>
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<td>(d) She realized she would not be able to complete her work.</td>
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<tr>
<td>(e) She had to do a task she didn't normally do at work.</td>
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<thead>
<tr>
<th><strong>Garry's small business is attracting less and less clients and he can't tell why. There doesn't seem to be anything he can do to help matters. Garry is most likely to feel?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Scared</td>
</tr>
<tr>
<td>(b) Angry</td>
</tr>
<tr>
<td>(c) Sad</td>
</tr>
<tr>
<td>(d) Guilty</td>
</tr>
<tr>
<td>(e) Distressed</td>
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<tr>
<th><strong>Someone thinks that another person has deliberately caused something good to happen to them. They are most likely to feel?</strong></th>
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<tbody>
<tr>
<td>(a) Hope</td>
</tr>
<tr>
<td>(b) Pride</td>
</tr>
<tr>
<td>(c) Gratitude</td>
</tr>
<tr>
<td>(d) Surprise</td>
</tr>
<tr>
<td>(e) Relief</td>
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<tr>
<th><strong>By their own actions, a person reaches a goal they wanted to reach. The person is most likely to feel?</strong></th>
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</thead>
<tbody>
<tr>
<td>(a) Joy</td>
</tr>
<tr>
<td>(b) Hope</td>
</tr>
<tr>
<td>(c) Relief</td>
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</tbody>
</table>
| 15. An unwanted situation becomes less likely or stops altogether. *The person involved is most likely to feel?* | (d) Pride  
(e) Surprise  
(a) Regret  
(b) Hope  
(c) Joy  
(d) Sadness  
(e) Relief  |
|---|---|
| 16. Hasad tries to use his new mobile phone. He has always been able to work out how to use different appliances, but he cannot get the phone to function. *Hasad is most likely to feel?* | (d) Relieved  
(e) Frustrated  
(a) Distressed  
(b) Confused  
(c) Surprised  |
| 17. Although she has been careful to avoid all risk factors, Tina has contracted cancer. There is only a small chance that the cancer will be benign and nothing Tina does now can make a difference. *Tina is most likely to feel?* | (e) Hopeful  
(a) Scared  
(b) Distressed  
(c) Irritated  
(d) Sad  |
| 18. Quan and his wife are talking about what happened to them that day. Something happened that caused Quan to feel surprised. *What is most likely to have happened?* | (e) His wife told a funny story  
(a) His wife talked a lot, which did not usually happen.  
(b) His wife talked about things that were different to what they usually discussed.  
(c) His wife told him that she might have some bad news.  
(d) His wife told Quan some news that was not what he thought it would be.  |
| 19. A supervisor who is unpleasant to work for leaves Alfonso's work. *Alfonso is most likely to feel?* | (e) Sadness  
(a) Joy  
(b) Hope  
(c) Regret  
(d) Relief  |
| 20. Leila has been unable to sleep well lately and there are no changes in her life that might indicate why. *Leila is most likely to feel?* | (e) Guilty  
(a) Angry  
(b) Scared  
(c) Sad  
(d) Distressed  |
| 21. The new manager at Enid's work changes everyone's hours to a less flexible work pattern, leaving no room for discussion. *Enid is most likely to feel?* | (e) Anxiety  
(a) Dislike  
(b) Rage  
(c) Jealousy  
(d) Surprise  |
| 22. Someone believes that another person has caused harm to them, due to that person's bad character. They think they can probably handle the situation though. *The harmed person is most likely to feel?* | (e) Shame  
(a) Contempt  
(b) Anger  
(c) Horror  
(d) Excitement  |
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
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</table>
| 23. Pete gets home late, after his favourite TV show has ended. Pete's partner has taped the show for him. *Pete is most likely to feel?* | (a) Surprise  
(b) Hope  
(c) Pride  
(d) Relief  
(e) Gratitude |
| 24. Matthew has been at his current job for six months. Something happened that caused him to feel regret. *What is most likely to have happened?* | (a) He did not apply for a position he wanted, and has found out that someone else less qualified got the job.  
(b) He did not apply for a position he wanted, and has started looking for a similar position.  
(c) He found out that opportunities for promotion have dried up.  
(d) He found out that he didn't get a position he thought he would get  
(e) He didn't hear about a position he could have applied for and now it is too late. |
| 25. Penny's hockey team trained hard and won the championship. *Penny is most likely to feel?* | (a) Hope  
(b) Pride  
(c) Relief  
(d) Joy  
(e) Surprise |