SOCIAL IDENTITY AND THE COGNITIVE
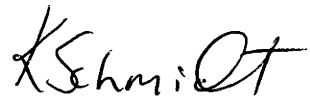
APPRAISAL OF STRESS

Katrina Anne Schmidt

A thesis submitted for the degree of

Doctor of Psychology (Clinical)

Division of Psychology,

The Australian National University,

Canberra, Australia,

September, 2001.

ORIGINALITY OF THESIS

I declare that the work contained in this thesis is the result of my original

research and that no part of it has been submitted for any degree or diploma to

any other university or institution. To best of my knowledge no material

previously published or written by any other person has been included except

where due acknowledgement has been indicated.

Katrina Anne Schmidt

ACKNOWLEDGEMENTS

Having finished my thesis, I would especially like to thank the following people:

Alex Haslam for his wisdom and reassurance, and for always extending and challenging me intellectually.

Ross Wilkinson for his guidance, extended support and for providing me with a structured approach.

Kate with whom I shared an office for her friendship, support and making sure we had fun.

My family (Fritz, Denise, Rach and Paul) for their unconditional support and patience.

My classmates (Beck, Louise, Bruno and Darryl) for their friendship.

ABSTRACT

Stress is widely considered to have detrimental effects on both our physical and psychological wellbeing. For this reason, a variety of disciplines have contributed to research into this topic. However, this research has typically focused on the individual and his or her emotional and cognitive processes without adequately understanding the role of social factors and the social context. This thesis examines the role of social factors by applying self-categorization principles to Lazarus and Folkman's (1984) transactional model of stress. Three experiments were designed where participants had to perform mental arithmetic tasks that were intended to be potentially stressful and result in threat appraisal.

The first experiment explored the benefits of receiving informational support from a person who shares the same social identity as the stress sufferer (an ingroup member). In this experiment, participants ($N = 58$) completed an initial set of arithmetic tasks and then indicated how they felt during the task on measures to assess the stress response. Before completing another set of arithmetic tasks participants received feedback from either an individual in the personal identity condition or ingroup member in the social identity condition. After completing the second set of arithmetic tasks participants rated the stress response again. The results supported the *a priori* predictions that the benefits of informational support depend upon the appraiser and provider of the support sharing a salient social identity. The second experiment was conducted to replicate Experiment 1 and strengthen the manipulation of social identity salience and increase the power of the experiment by increasing the sample size ($N = 79$). Here, though, the benefits of informational support were not

only evident for participants in social identity condition but also for participants in the personal identity condition.

In the third experiment, the arithmetic tasks were intended to be identity-relevant or identity-irrelevant to the participants' personal identity or social identity ($N = 78$). The aims were threefold: (1) to examine how the impact of a stressor varies as a function of its perceived relevance and importance to self, (2) to examine the benefits of receiving informational support about the testing situation that is relevant to self from a person who shares the same social identity and (3) to ensure the provision of informational support lowers the stress response. The results did not support the hypothesis that the benefits of receiving feedback are restricted to conditions were the stress appraiser and provider share a salient social identity. Further, the experiment failed to demonstrate the difference between identity-relevant and identity-irrelevant stressors. Finally, though, in support of the predictions, there was evidence to suggest that the lowering of the stress response was not due to a practice effect.

Methodological problems with the current research are discussed and it is concluded that, even though the findings are tentative and varied, they do suggest that self-categorization principles play a role in the cognitive appraisal of stress. That is, the social context in which individuals find themselves may influence the appraisal of stress situations. Clearly, further research is warranted to provide a more accurate amalgamation of Lazarus and Folkman's (1984) transactional model of stress and self-categorization principles (Turner, 1982, 1987, 1991). Future research needs to consider the methodological and measurement issues raised by the present thesis.

CONTENTS

CONTENTS (Cont.)

CONTENTS (Cont.)

CHAPTER ONE

Introduction and Overview of the Thesis

Stress is a major topic of interest because of its importance for our social, physiological and psychological wellbeing. It has long been thought that stress can have detrimental effects on both our physical and mental health. For this reason, many theorists and a variety of disciplines have contributed to research into this topic. Traditional psychological models of stress vary in regard to what they see as the central component of stress. Some have placed importance on the external stressful event or stressor, while other models have focused on the stress response or reaction. The former represents a stimulus-oriented account (Holmes & Rahe, 1967), the latter a response-oriented account (Seyle, 1956). However, stimulus and response accounts of stress fail to consider adequately the interaction between the person and environment and, in addition, they fail to capture adequately the person in the stress equation. They do not consider the meaning or interpretation of the situation for the individual (Dergotis & Coon, 1993; Lazarus, 1966; Lazarus & Folkman, 1984; Monroe & Kelley, 1995). As a result, disillusionment with stimulus and response accounts has led to alternative transactional models of stress.

Lazarus and Folkman (1984) presented one of the most prominent transactional accounts of the stress process. Central to this theory is the cognitive process of appraisal. For Lazarus and Folkman (1984), stress arises from a dynamic relationship between the person and environment where the cognitive appraisal intervenes between the environment and the subsequent experience of a stressful situation. Stress results when the person perceives they will not be able to cope with a

situation that they define as personally relevant and important. Put simply, in order for a situation to be considered stressful it needs to be perceived as such by the individual. Lazarus and colleagues (Lazarus, 1966; Lazarus, Opton, Nomikos & Rankin, 1965; Speisman, Lazarus, Mordkoff & Davison, 1964) have consistently demonstrated the role of cognitive appraisal in the stress process. They have found that different emotions and physiological reactions result from varying the person's appraisal of a situation.

Lazarus and Folkman (1984) make the distinction between two types of cognitive appraisal: primary and secondary appraisal. Primary appraisal refers to the evaluation of the situation in terms of its significance for the individual's wellbeing, while secondary appraisal refers to the individual's evaluation of the coping resources and options available to deal with stressful situations. A transactional account of the stress process suggests that it is the combination of primary and secondary appraisals in interaction with the person and environment that ultimately determines the psychological reaction. Appraisal and coping processes are closely intertwined and hence the appraisal of a stressful situation instigates the choice of appropriate cognitive and behavioural coping efforts. It is in this area of the coping literature that more recent reference has been made to the potential for social factors to impact on the stress process. Prior to this, researchers focused solely on the individual and his or her emotional and cognitive processes (Pearlin, 1993).

Acknowledgment of the importance of social factors is central to the literature on social support. Social support has received a considerable amount of empirical attention because it is thought to have a beneficial effect on wellbeing and to reduce the harmful effects of stress. Many theorists have proffered different conceptualisations of social support (Cohen & Syme, 1985; Gore, 1985; Hobfoll &

Vaux, 1993; Kessler and McLeod, 1985; Thoits, 1982; Turner, 1981). Cohen and

Wills (1985) outline four explicit functions of a social support network. Specifically,

a social support network can provide the individual with one or more of the following:

(a) a sense of self-worth and acceptance (emotional support), (b) material and

financial resources (instrumental support), (c) information useful in understanding and

coping with stressful events (informational support), and finally (d) social

companionship. According to Lazarus and Folkman (1984) one way in which social

support may intervene in the stress process is by influencing the appraisal of

potentially stressful events. When drawing attention to informational support (also

known as appraisal support) individuals are provided with the opportunity to compare

their reactions with others, to help them either clarify their understanding or allow for

new interpretations of potentially stressful events. This suggests that the social

context in which individuals find themselves may influence the stress process. In this

vein, there is clearly scope for a better understanding of the role of social influence in

the stress process. This is the central goal of this thesis.

The role of social influence in the stress process has mainly been examined

through an application of social comparison theory (after Festinger, 1954). Social

comparison theory asserts that people turn to others who they see as similar in order

to gain information (i.e., engaging in social reality testing) only when objective and

non-social information (physical reality testing) is not available. Essentially,

individual perception is seen as primary and valid whereas social influence is

secondary, unreliable and only used as an extension of individual perception. On this

basis, individuals are assumed only to influence others by virtue of the (asocial) valid

information they possess and thus the influence of social support in the appraisal of

stressful situations has been assumed to depend simply on its informational content.

However, more recently, researchers have questioned whether physical reality testing takes place in isolation from social reality testing and whether social reality testing really is secondary or optional (Turner, 1987, 1991). Furthermore, it has been argued that it is not the informational content *per se* of others that influences the appraisal of stressful events, but the extent to which that content is validated by social psychological means – with relevant others in the context of a shared reality (Turner, 1987, 1991; Turner, Oakes, Haslam & McGarty, 1994; see also McGarty, Haslam, Hutchinson & Turner, 1994). To put this another way, informational support should influence cognitive appraisal only when it is provided to the appraiser by a person who is seen to be qualified to inform him or her about social reality because they share the same social identity (i.e., when that person is seen to be an ingroup member). Consistent with this analysis, the purpose of this thesis is to enhance our understanding of the stress process by understanding the role of <u>social identity salience</u> in the appraisal of stressful situations.

The concept of social identity (Tajfel, 1975, 1979; Tajfel & Turner, 1979) was developed as part of an attempt to foster an interactionist approach to social psychology. Within this tradition, social identity theory was initially developed to provide an analysis of intergroup differentiation by examining the emotional and value significance of group membership. Later, self-categorization theory was developed to provide a better understanding of the general principles that govern and predict when people will define themselves in terms of a personal or social identity (Turner, 1987, 1991; Turner et al., 1994). The principles of self-categorization theory are particularly pertinent to this thesis.

In brief, the theory postulates that a person's self-concept may be defined in terms of their unique and individual characteristics (their personal identity) and at

other times in terms of shared social group memberships (their social identity). Thus, when a social identity becomes <u>salient</u> people tend to perceive themselves less in terms of their personal differences and individuality and more in terms of attributes that define them as members of an ingroup. Moreover, the effects of social identity salience will be most pronounced when a person <u>identifies</u> with an ingroup and internalises that group membership as an aspect of their self-concept. Self-categorization theory also proposes that our personal and social identities are both true and valid expressions of the self (McGarty et al., 1994; Turner et al., 1994). However, it is important to note that to date very little research has examined the impact of <u>social identity salience</u> in the cognitive appraisal process.

1.1   The present program of research

This thesis examines the role of <u>social identity salience</u> at two different stages of the stress process. First, it is suggested that social identity principles can help develop our understanding of why a potentially stressful situation is appraised as relevant or irrelevant to an individual. The stress literature postulates that a situation will be appraised as stressful when it is relevant and meaningful to the person's wellbeing. From a social identity perspective, a situation will be appraised as stressful when it is relevant to the self-concept which includes both one's personal identity and social identities. Thus, the impact of a stressor will vary as a function of its perceived relevance and importance to <u>self</u>. To reiterate, for a situation to be appraised as stressful it must be perceived as relevant or important to one's personal identity or social identity. Hence, a situation will be appraised as relevant or irrelevant to the self depending on the context and how the self is defined in a given context. Second, social support in the form of information about a stressful situation

should influence the cognitive appraisal process and any accompanying stress reaction when it is provided to the appraiser by a person who is seen to be qualified to inform him or her about social reality. Thus, the provision, receipt and benefits of social support should be evident when the source and appraiser share the same social identification (and accompanying perspective) in the context in which the support is provided. For this reason, the benefits of social support should be dependent upon the extent to which the person identifies with the provider, perceives him or her as an ingroup member and internalises that group membership as an aspect of their self-concept. Previous research demonstrates the importance of matching the support to the type of stressor (Hobfoll & Vaux, 1993; Cohen &Wills, 1985; Cohen & McKay, 1984; Turner, 1981). The approach presented here acknowledges the importance of matching the support to the stressor but provides a more parsimonious account by explaining the underlying process from a social identity perspective.

In summary, the benefits of informational support are argued to be dependent upon the extent to which the individual identifies with the provider. Some evidence to support this comes from research in which Jacobs and Haslam (2000) found that when participants were informed that a testing situation was challenging as opposed to stressful from an ingroup member (another student) they perceived the situation as less stressful. However, the same effect was not apparent when participants were informed about the testing situation from a person they thought was an outgroup member (a stress sufferer). Taken together, we assert that the above analysis has the potential to enrich our understanding of the cognitive appraisal of stress.

In order to test these arguments three experiments were conducted in which participants had to perform mental arithmetic tasks that were intended to be potentially stressful. The first experiment explored the benefits of receiving

informational support from a person who shares the same social identity as the participant (an ingroup member). The second experiment was conducted to replicate Experiment 1 and strengthen the manipulation of social identity salience and increase the power of the experiment by increasing the sample size. The aims of the final study were threefold. First, to examine how the impact of a stressor can vary as a function of its perceived relevance and importance to self. Second, to examine the benefits of receiving informational support about the testing situation that is relevant to the self from a person who shares the same social identity as the participant (an ingroup member). Third, to ensure that it is the provision of feedback that lowers the stress response rather than a practice effect.

The first experiment was designed to explore the benefits of receiving informational support when the stressor was identity-relevant. In this experiment, self-definition varied across two levels with participants being assigned to either a personal identity or social identity condition. Participants were required to complete an initial set of arithmetic tasks (study phase 1) and then indicate how they felt during the task on measures of stress. Before completing another set of arithmetic tasks (study phase 2) participants either received feedback that was intended to be supportive from an individual in the personal identity condition or ingroup member in the social identity condition. After completing the second set of arithmetic tasks participants rated their stress response again. It was hypothesised that the stress response should lower across the two sets of tasks in the social identity condition where the participant receives informational support from another participant who shares the same social identity – an ingroup member. However, the same pattern should not occur in the personal identity condition where the participant receives feedback from another individual.

Consistent with the *a priori* predictions, the results indicated that the stress response across the two tasks lowered significantly only for participants in the social identity condition. This suggests that the benefits of informational social support are contingent upon the sufferer identifying with the provider of support and perceiving them both to share a salient social identity. However, due to lack of statistical power, the results failed to obtain the predicted interaction between self-definition and study phase. In the second experiment, statistical power was improved by strengthening the self-definition manipulation and increasing the sample size. Here, though, the results indicated that the stress response lowered significantly across the two sets of arithmetic tasks for participants in the social identity condition but also for participants in the personal identity condition. The results of this experiment were attributed to the lack of ecological validity and relevance of performing the arithmetic tasks in an experimental context. The possibility of a practice effect being responsible for the results could also not be ruled out. Notwithstanding these results, there was evidence for the success of social identity salience and a trend indicating that participants in the social identity condition found the feedback more supportive.

Because of the methodological issues outlined above the final experiment was designed to assess for the possibility of a practice effect and increase the potential threat of the stressor. There were three general hypotheses. First, the participants' experience of stress will be high only in conditions where the arithmetic tasks are relevant to their self-definition. Second, the stress response should lower across the two sets of tasks only when participants receive feedback from someone who shares the same social identity – an ingroup member. Third, the stress response should not lower across the two sets of tasks when participants receive no feedback. The experiment failed to demonstrate the difference between identity-relevant and

identity-irrelevant stressors. All of the participants reported moderate levels of stress during the first set of tasks. The results also showed that the stress response lowered in conditions where participants received feedback and in the social identity no feedback condition. Therefore, there was no evidence that the benefits of receiving feedback were restricted to conditions where the provider shared a salient social identity with the appraiser. Participants in both the personal identity and social identity conditions who received feedback reported less stress during the second set of arithmetic tasks. Finally, the stress response did not reduce in the personal identity no feedback condition and this provides support for stress not lowering simply as a result of a practice effect.

Considered as a whole, this thesis represents an initial attempt to clarify the role of social influence and social identity salience in the appraisal of stressful situations. It provides a parsimonious account of the cognitive process of appraisal by explaining the underlying process from a social identity perspective. Even though the results are mixed, the thesis does suggest that the social context in which individuals find themselves has the capacity to influence the appraisal of stressful situations.

The following chapters present a review of the relevant literature on stress and the social identity approach. We will then present an integrated model to enhance our understanding of the transactional stress process by clarifying the role of social identity salience and social influence. Two empirical chapters then explore the role of social identity in the cognitive appraisal process in the manner outlined above and the thesis concludes by considering the broader implications and the value of the social identity approach to the study of the stress process as a whole. We conclude that the approach has a great deal to offer to this field, and that some tentative support for this view is provided by our empirical studies, while noting that further investigation is

clearly warranted. Consideration is given to the paths that this may take, particularly in the light of the methodological and measurement issues raised by the present research.

CHAPTER TWO

The Stress Process

The word "stress" continues to generate an abundance of interest because of its importance for our social, physiological and psychological wellbeing. One can hear about the topic of stress in daily conversations, via the media, at conferences and workshops, through university courses and in fact, in almost every facet of life. Many disciplines have contributed to this interest; physiology, sociology, anthropology, and psychology to name just a few. Briefly, a physiological analysis of stress is concerned with the workings of the body (e.g., the nervous system), sociological and anthropological analyses deal primarily with the role of society, while a psychological analysis of stress is specifically interested in the individual mind and behaviour. Partly as a result of this range of approaches, the way in which stress has been defined in the research literature has not been consistent. This has led to considerable confusion and debate within the stress research literature (Breznitz & Goldberger, 1993; Eckenrode, 1991; Pearlin, 1993).

The word "stress" originated from the engineering analysis of stress that was developed in the late 17th century (Lazarus, 1966, 1999; Vingerhoets, 1985). In essence, the engineering analysis drew upon three concepts, load, stress, and strain. Load referred to any external force; stress to the area of the physical object over which this force is applied; and strain was seen as the result of this force, which may cause temporary or permanent changes in the structure of the object. When the engineering analysis of stress is compared to 20th century models of stress, one can

see load as analogous to an external stressful event or stressor and strain as analogous

to a stress response or reaction (Lazarus, 1999).

The goal of this chapter is to focus on Lazarus and Folkman's transactional

account of the stress process as this theory is of considerable relevance to the

theoretical framework presented in this thesis. Two integral components of this

theory will be reviewed: the cognitive process of appraisal and the coping process.

The discussion will also consider the emotions associated with the appraisal process.

It is within the coping literature, in particular as it relates to the issue of social

support, that reference is first made to the potential for social factors to impact on the

stress process. Thus, the topic of social support will be reviewed prior to a general

discussion of the strengths and limitations of established models of the stress process.

We will start, though, with a brief discussion of the traditional stimulus and response

models of stress as their contribution to the stress literature led to the development of

transactional models of stress.

2.1   Traditional psychological models of stress

Theoretical approaches vary in regard to what they see as the central

ingredient of psychological stress. Some place importance on the external stressful

event or stressor, others on the stress response or reaction, while some emphasise

individuals' interpretation of the situation and the meaning it assumes for them.

Traditionally, psychological stress has been defined in two main ways, stimulus-

oriented and response-oriented (Dergotis & Coon, 1993; Houston, 1987; Lazarus,

1966, 1999; Lazarus & Folkman, 1984; Vingerhoets, 1985).

In the first instance, stimulus-oriented definitions place an emphasis on

stressful events and aspects of the stimulus environment which increase demands

upon the individual. Here something has to happen within the environment to provoke stress reactions and subsequently the need to cope (Dergotis & Coon, 1993). Stressful life changes and events, such as divorce, job loss, and death of a loved one are used to explain disturbed emotional reactions. The Holmes-Rahe Schedule of Recent Experience (SRE) questionnaire (Holmes & Rahe, 1967) is a commonly used tool that draws upon a stimulus-oriented approach. The SRE consists of a list of 43 significant life events developed from isolating the life events experienced from a large group of patients just prior to the onset of illness (Holmes & Rahe, 1967). On the other hand, response-oriented definitions applied in both physiology and medicine view stress as the "troubled set of reactions" to stressful stimuli. Thus, a disturbed bodily or mental state is seen as stress in response terms. Hans Seyle (1956) formulated one of the most prominent modern theories of physiological stress. According to Seyle, stress is defined as the non-specific response of the body to any noxious stimulus, with more recent definitions replacing "any noxious stimulus" with "any noxious demand" (Seyle, 1993). This response, called the General Adaptation Syndrome, is a universal set of physiological stress reactions. The set of reactions may include increased adreno-cortical activity, degeneration of the thymus and lymphatic structures, and hemorrhage and ulceration of the stomach and other parts of the gastrointestinal tract (Seyle, 1956, 1993; Vingerhoets, 1985).

Although stimulus and response approaches differ in their conceptualisation of stress, Cohen, Kessler & Gordon (1995) note that they still share a common thread insofar as both approaches are interested in a process in which "environmental demands tax or exceed the adaptive capacity of an organism, resulting in psychological and biological changes that may place persons at risk of disease" (p. 3).

2.1.1   The limitation of stimulus/response approaches

Despite their attractions, key problems with traditional stimulus or response accounts of the stress process are that they fail to consider, either (a) the interaction between these two variables or (b) the role of the person in the stress process (Lazarus, 1999; Lazarus & Folkman, 1984; Tomaka, Blascovich, Kibler & Ernst, 1997). Hence, more recent accounts of the stress process consider the dynamic and mutually reciprocal interaction between the person and the environment. This relationship is seen as dynamic because its characteristics can change over time and circumstance. Further, it is reciprocal because not only is the environment seen to affect the person but so too the person is seen as having the capacity to influence the environment (Lazarus, 1991a; Vingerhoets, 1985). However, despite the importance of the interaction between the person and the environment, it is also imperative to consider the person's evaluation of the relational meaning and interpretation of their interaction with the environment (Dergotis & Coon, 1993; Lazarus, 1966, 1999; Lazarus & Folkman, 1984; Monroe & Kelley, 1995; Vingerhoets, 1985). As Lazarus (1999) comments, "although interaction is important, the meaning a person constructs from relationships with the environment operates at a higher order level of abstraction than the concrete variables themselves. Therefore, in addition to interaction, we need to speak of transaction and relational meaning" (p. 12). Moreover, Lazarus postulates that this relational meaning "is not inherent in the two sets of separate variables. It takes the conjoining of both by a mind that considers both the environmental conditions and properties of the person in making an appraisal" of a situation (p. 12). The essential point here is that the person and environment may interact, but it is ultimately the person who appraises what the situation signifies for their personal wellbeing.

Lazarus' work represents a powerful critique of stimulus and response approaches. First, by acknowledging the importance of relational meaning and interpretation in the stress process we begin to gain an understanding of individual differences and of why two individuals may display different emotional responses to the same situation (Tomaka et al., 1997). Second, the above analysis finds related support in the clinical psychology literature. Of particular significance, cognitive therapy and its treatment of psychological dysfunction is also "predicated on the premise that particular cognitive processes contribute to maladaptive emotional and behavioural responses" (Monroe & Kessler, 1995, p. 127). In summary, stimulus and response approaches fall short of providing a full account of the stress process. Even if stimulus and response variables interact we still need to understand the role of transactional and relational meaning.

2.2 Lazarus and Folkman's Transactional Model of Stress

As a development of the above critique, one of the most influential models of the stress process was proposed by Lazarus and his colleague Folkman in the early 1980s. The centrepiece of this model is the cognitive process of appraisal. According to Lazarus and Folkman (1984), stress is "the particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). Here, then, psychological stress only arises when an individual anticipates that he or she will not be able to cope with an environmental demand, or failure to meet any demand is perceived by the individual as personally significant (Folkman, Chesney, McKusick, Ironson, Johnson & Coates, 1991; Kaplan, 1983; Lazarus, 1966; Lazarus & Folkman,

1984). Put simply, in order for a situation to be stressful it needs to be perceived as such by the individual.

In the 1960s, Lazarus and his colleagues conducted a series of studies to demonstrate the role of cognitive appraisal in the stress process (Lazarus, 1966; Lazarus & Folkman, 1984; Lazarus et al., 1965; Speisman et al., 1964). In one of their classic studies (Speisman et al., 1964), participants were shown a film that depicted a primitive surgical procedure being performed on adolescent males in order to create a potentially stressful situation. The participants' disturbance in affect together with their physiological reactions measured by elevated skin conductance and heart rate were monitored. The cognitive appraisal was manipulated by instructing participants to interpret the film as either harmful or benign. Participants were randomly assigned to one of four conditions. Three of the four conditions had different soundtracks constructed to reflect different ways of interpreting the surgical procedure while the final condition had no explanatory soundtrack. In the trauma condition, the soundtrack emphasised the harmful features associated with the procedure – for example, the pain and mutilation to the body. In the denial condition the soundtrack portrayed no harm or pain and even attempted to present the procedure in a positive manner. In the intellectualisation condition, the soundtrack presented the procedure from an anthropological viewpoint by expressing an interest in strange customs without any reference to emotional involvement. The findings indicated that participants in the trauma condition were significantly more stressed than individuals who viewed the surgical procedure without an accompanying explanatory soundtrack. Additionally, participants in the denial and intellectualisation appraisal conditions were significantly less stressed than participants in the other conditions. Speisman and colleagues (1964) inferred from the findings that different cognitive appraisals

influence emotional and physiological responses and coping strategies in different ways.

A more recent study by Tomaka et al. (1997) also provides support for the central role of the cognitive process of appraisal. In their study, participants had to perform a mental arithmetic task after hearing one of two instructional sets: a threat set emphasising the importance of completing the task as quickly and accurately as possible and a challenge set emphasising effort and doing one's best. The participants indicated how threatening they expected the mental arithmetic task to be and their physiological reactions (measured by heart rate and blood pressure) were monitored. Findings indicated that participants in the threat condition appraised the task as more threatening and their physiological reactions were more consistent with a stress reaction than participants in the challenge condition. Thus, threat and challenge appraisals could be elicited experimentally by manipulating the instructional set.

Within their theoretical approach Lazarus and Folkman (1984) make the distinction between two types of cognitive appraisal: primary and secondary appraisal. Primary appraisal refers to the evaluation of the situation in terms of its significance to the individual's wellbeing. Thus, it reflects the personal relevance of the encounter to the individual. Secondary appraisal refers to the individual's evaluation of the coping resources and options that are available to deal with a potential stressor. Hence, secondary appraisal entails the options and prospects for coping. Consistent with a transactional account of the stress process, primary and secondary cognitive appraisals are not sufficient in their own right to define the psychological reaction, it is the combination of these appraisals that determines the outcome (Lazarus, 1966; Lazarus & Folkman, 1984; Lazarus & Smith, 1988). More specifically, it is the combination of the primary and secondary appraisals in

interaction with the person and environment that ultimately determines the psychological reaction (Lazarus & Smith, 1988). Furthermore, each appraisal is just as important as the other and the qualifying label of primary or secondary is not intended to connote less importance. The primary appraisal does not necessarily come first in the transaction nor does it function independently of the secondary appraisal. Thus the difference between these two appraisals is not in the timing or importance, it is the content of the appraisal (Lazarus, 1999).

2.2.1 Forms of cognitive appraisal

Primary appraisal

Lazarus and Folkman (1984) distinguish between three types of primary appraisal and psychological stress. Specifically, a primary appraisal may be irrelevant, benign positive, or stressful. An irrelevant appraisal occurs when the situation has no implications for the person's wellbeing. The person has nothing invested in the possible outcome of the situation and thus they have nothing to lose. On the other hand a benign positive appraisal will occur when the outcome of the situation is construed as positive and thus the outcome is seen to promise to enhance wellbeing. Finally, when a situation is appraised as stressful it poses harm/loss, threat or challenge to the individual. Lazarus and Folkman (1984) define harm/loss in terms of past experiences that have posed some kind of damage to the individual. These may include illness or injury, recognition of some damage to self-esteem or social esteem, and the loss of a loved one or valued person. Threat on the other hand, concerns harm or losses that have not yet occurred but are anticipated. Here, little if anything is to be gained from the situation. Finally, a challenge appraisal focuses on the possibility of gain (this may include potential for positive gain, mastery, or growth) as well as loss

in the situation (Lazarus & Folkman, 1984; Tomaka, Blascovich, Kelsey & Leitten, 1993).

Secondary appraisal

When a situation is perceived as threatening or challenging something must be done to manage it and this is when the secondary appraisal comes into play. Secondary appraisal relates to evaluations of what might and can be done to deal with the stressful situation at hand. Thus secondary appraisal includes the coping resources and options available to the individual. Lazarus and Folkman (1984) conclude, "secondary appraisal activity is a crucial feature of every stressful encounter because the outcome depends on what, if anything, can be done, as well as on what is at stake" (p. 35).

2.2.2 The emotions associated with appraisals

In the process of formulating the transactional account of stress, Lazarus began to observe that stress was an aspect of a larger set of issues that included the emotions. Subsequently, he expanded the construct of appraisal to include emotional reaction. Lazarus (1991a, 1991b, 1993, 1999) remarks upon the value of studying the emotions and the richness this can provide to our understanding of the person's experience. Specifically, he comments: "the information derived by expanding our concept of stress to include the emotions is far more revealing about the human condition and its clinical implications than the knowledge afforded by the simpler stress concept" (p. 23). Thus, according to Lazarus (1993), each emotion tells us something different about the conditions faced by the individual and their subjective appraisal of the situation. Consequently, the pattern of appraisal differs for each emotion and each emotion tells a different story that reflects the person's evaluation

of his or her wellbeing. In addition to this, each emotion tells us something about how the individual is coping with a situation. It is essential to note that if one wants to change an emotion one must firstly change the cognitive appraisal of the situation.

Lazarus (1999) lists up to fifteen different emotions that are either positive or negative in nature that enhance our understanding of the conditions faced by the individual and their cognitive appraisal of the situation. These emotions include anger, envy, jealousy, anxiety, fright, guilt, shame, relief, hope, sadness, happiness, pride, love, gratitude, and compassion. To look at the core themes of a few emotions, fright refers to immediate, concrete, and overwhelming physical danger, sadness refers to an irrevocable loss, while relief denotes a distressing condition that has changed for the better or gone away (Lazarus, 1993).

We will now take a closer look at the emotions associated with a benign positive appraisal and the emotions associated with the stress appraisals to illustrate how this can increase our understanding of the person's experience. To reiterate, a benign positive appraisal occurs when the situation is construed as positive and there is potential for enhancement of wellbeing. The emotions associated with this appraisal are pleasurable and may include happiness/joy, pride, gratitude, and love (Lazarus, 1993; Lazarus & Folkman, 1984). The emotions associated with the stress appraisals vary depending upon whether the appraisal is one of harm/loss, threat or challenge. Harm/loss appraisals consist of damage that has already occurred and are associated with emotions of sadness, shame and guilt. On the other hand, threat appraisals centre on the potential for harm and are associated with negative emotions such as fear, anxiety, and anger. Challenge appraisals focus on the potential for gain and growth as well as loss and are more likely to be characterised by positive emotions such as eagerness and excitement (Lazarus & Folkman, 1984). In general,

threat appraisals tend to be more strongly associated with negative emotions than challenge appraisals. The distinction between threat and challenge appraisals can be illustrated by the example of an unprepared student who is likely to feel threatened and anxious before an examination compared to a prepared student who is more likely to feel challenged and eager to perform. Threat and challenge appraisals are not mutually exclusive and often a situation can be appraised as involving both (Lazarus, 1999; Lazarus & Folkman, 1984; Tomaka et al., 1993).

2.3   Coping

Without reference to the coping literature any review of the stress process is incomplete. Appraisal and coping processes are closely intertwined and hence, coping is a central element of the transactional account (Breznitz & Goldberger, 1993; Lazarus, 1999; Moos & Schaefer, 1993). There are three important characteristics to consider when defining coping. First, coping is a process that represents the individual's cognitions and behaviours and the changes to these cognitions and behaviours as a situation takes place. Second, coping is contextual and refers to how the individual thinks or acts within a specific context. Third, coping refers to efforts to manage demands without reference to the success of these efforts (Folkman et al., 1991). Consistent with the above points, Lazarus and Folkman (1984) define coping "as constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). Put simply, coping is the effort to manage psychological stress (Lazarus, 1999). Here, then, the implicit prerequisite for coping is the appraisal of an event or condition as harmful, threatening or challenging to the individual (Eckenrode, 1991).

Coping serves two main functions: (a) to manage or alter the problem causing stress and (b) to regulate the emotional responses to the problem. The former function refers to problem-focused coping and the latter function refers to emotion-focused coping (Eckenrode, 1991; Folkman et al., 1991; Folkman & Lazarus, 1984; Latack, 1986; Terry, Callan & Sartori, 1996; Wethington & Kessler, 1991). Problem-focused coping is aimed at gathering information about what to do and implementing actions to change the stressful situation while emotion-focused coping regulates the emotions tied to the stressful situation (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984; Lazarus, 1999).

Research suggests that different situations call for different coping strategies (Wethington & Kessler, 1991). In a community-based study, Lazarus and Folkman (1980) analysed the ways in which people coped with the stressful events of daily living during the course of one year. Participants provided information about recently experienced stressful events on a monthly basis and indicated the coping thoughts and actions used in the specific events. The findings indicated that problem-focused strategies were relied upon more when the situation was appraised as being amenable to change and within the person's control whereas emotion-focused strategies were relied upon more when the situation was appraised as not being amenable to change.

The range of individual cognitions and behaviours that represent either problem-focused or emotion-focused coping functions are vast. Folkman, Lazarus, Dunkel-Schetter, Delongis and Gruen (1986) conclude that problem-focused and emotion-focused functions fall into eight discrete factors. These factors include confrontive coping (e.g., standing ground and fighting for what you want), planful problem solving (e.g., establishing a plan of action and following it), accepting responsibility (e.g., realising the problem was brought on by oneself), seeking social

support (e.g., talking to someone to find out more about the situation), escape-avoidance (e.g., hoping a miracle will happen), self-controlling (e.g., keeping one's feelings to oneself), distancing (e.g., trying to forget the whole thing), and positive reappraisal (e.g., believing that a situation contributes to one's personal growth).

Coping research has also examined the coping resources available to the individual when implementing problem-focused and emotion-focused coping strategies. Coping resources are defined as the characteristics of the person or his or her environment that are available for coping (Eckenrode. 1991; Folkman et al., 1991; Moos & Schaefer, 1993). These resources for coping may include psychological characteristics of the person, such as self-esteem or a sense of mastery, characteristics of the person's environment, such as the social network and availability of social support, or achieved statuses such as occupation, education and financial resources (Eckenrode, 1991; Folkman et al., 1991).

It is here, within the coping literature that more recent reference has been made to the potential for social factors to impact on the stress process. Prior to this, researchers tended to focus investigations of appraisal and coping solely on the individual and his or her emotional and cognitive processes (Pearlin, 1993). Recognition of social factors is seen in references made to the availability of social support as a coping resource and in addition, to the seeking of social support, as an emotion-focused coping strategy, to reduce the harmful effects of stress (Aspinwall & Taylor, 1997; Cohen & Wills, 1985). It is to this important topic that we will now turn.

2.4 The provision, receipt and benefits of social support – a coping resource

Over the past two decades, social support has received a considerable amount of empirical consideration. In particular, the research literature pays attention to the process through which social support has a beneficial effect on wellbeing (Cohen & Wills, 1985; Cohen & Syme, 1985). As we will see, the transactions between people and their social networks are both a dynamic and complex problem. The workplace setting is one example of the many contexts in which the effects of social support have been investigated. In this context, studies have explored the role of supervisory support, support provided by co-workers and non-work sources of support in alleviating or at least ameliorating the effects of workplace stress (Cummins, 1990; Ganster, Fusilier & Mayes, 1986; James, 1997; Kaufmann & Beehr, 1986; Terry et al., 1996).

Many theorists have proffered different conceptualisations of social support. Cobb (1976) conceptualises social support as the belief that one is cared for, esteemed and valued. On the other hand Kaplan, Cassel and Gore (1977 cited in Thoits, 1982) define support as the degree to which an individual's basic social needs are met through interaction with others. Cohen and Wills (1985) outline four explicit functions through which a social support network is thought to have a beneficial effect on wellbeing and reduce the harmful effects of stress. Specifically, they suggest that social support can have one or more of four basic functions: (a) emotional, (b) instrumental, (c) informational and (d) social companionship. Emotional support involves communication from others about a person's self-worth and acceptance despite any difficulties or personal shortcomings. Instrumental support refers to the provision of concrete aid, material resources and financial

resources. Informational support provides the individual with information to help define, increase understanding of, and help cope with stressful events. Finally, social companionship relates to the affiliation and time spent with others. Cohen and Wills (1985) comment that although support functions can be distinguished conceptually, in naturalistic settings they are not usually independent. For example, it is likely that an individual who has social companionship will also have access to instrumental assistance and emotional support.

The social support literature suggests that there are two distinct processes through which social support has an effect on health and wellbeing (Cohen & Syme, 1985; Gore, 1985; Hobfoll & Vaux, 1993; Kessler & McLeod, 1985; Terry et al., 1996; Thoits, 1982; Turner, 1981). Cohen and Wills (1985) remark that numerous studies have provided evidence of a positive relationship between support and wellbeing, and that in theory this could occur through two very different processes. One model proposes that social support has a buffering effect on wellbeing. Here it is hypothesised that social support exerts its beneficial effects only in the presence of a potentially stressful event. On the other hand, the alternative model, termed the main-effect model, proposes that social support is beneficial irrespective of whether the individual is under stress and thus is important in its own right (Cohen & Syme, 1985; Cohen & Wills, 1985; Gore, 1985; Hobfoll & Vaux, 1993; Kessler and McLeod, 1985; Thoits, 1982; Turner 1981; Wilkinson, Walford & Espnes, 2000). Cohen and Wills (1985) argue that in fact both models are correct but that each represents a different process through which social support can impact upon the stress process. In the current research a buffering effect model will be applied, as this is consistent with Lazarus and Folkman's transactional account of the stress process. Here, the implicit prerequisite for the provision and receipt of social support is that the individual

appraises an event as stressful. In this vein, social support may intervene in the stress process by either preventing or ameliorating the stress appraisal and accompanying negative emotions. For example, informational support may intervene in the stress process by helping the individual to either reappraise a stressful situation through clarifying his or her understanding and assisting in new interpretations, or by providing the individual with suggestions for coping. In this way, reappraisal changes how the person-environment relationship is construed.

Several theorists (Cohen & McKay, 1984; Cohen & Syme, 1985; Cohen & Wills, 1985; Hobfoll & Vaux, 1993; Turner, 1981) remark upon an important caveat to consider when examining the buffering model. This is the importance of considering the match between the stressful event and the provision and receipt of support. That is, it is reasonable to assume that different stressful events have specific salient coping requirements. For example, Hobfoll and Vaux (1993) suggest that situations that offer some degree of control and change are best dealt with by instrumental and informational support, but also emotional support. On the other hand, situations that are not amenable to change are best dealt with by emotional support because these situations only allow for the regulation of emotions. Moreover, Cohen and Wills (1985) remark that both informational support and emotional support are likely to be responsive to a wide range of situations. In contrast, social companionship and instrumental support are argued to be effective when "the resources they provide are closely linked to the specific need elicited by a stressful event" (p. 314).

2.5 Limitations of transactional models

At this stage, though, both the stress process and the role of social support have been conceptualised from what is largely an individualistic perspective. That is, the primary unit of psychological analysis has been the individual. Illustrative of this point, research into cognitive appraisal in the stress process has focused only on the personal relevance of an encounter to an individual, and the way in which this influences individual wellbeing. Although the social support literature acknowledges the role of social influence and group belonging in the stress process, little consideration has been given to how the process of cognitive appraisal is actually affected by the social context of salient group memberships in which individuals find themselves.

When we look at informational support, the research literature posits that information provides the individual with the opportunity to compare their reactions with others to help them clarify their understanding of potentially stressful events. However, this literature fails to provide an adequate explanation of when this type of support is beneficial and who will be seen to be qualified to give it. The benefits of informational support in the appraisal of stressful situations have been assumed to depend simply on its informational content. In contrast to these assumptions it is possible to argue that it is not the informational content *per se* of support that influences the appraisal of stressful events, but the extent to which that content is perceived to be valid because it is provided by relevant others in a context of a shared understanding of social reality (Turner, 1987, 1991). Subsequently, not all information has equal value and its capacity to provide support is dependent upon the extent to which the stress sufferer identifies with the support provider (McGarty et al., 1994).

All of the above arguments lead us to suggest that the meaning of stress and the social interaction that surrounds it is bound up with individuals' social identities (where people see themselves as interchangeable with other members of a relevant social category; Turner, 1982) and that this exerts influence on the cognitive appraisal process and the provision, receipt and benefits of social support. Furthermore, we would also expect that for a situation to be appraised as stressful it must be perceived as relevant to one's personal identity or social identity.

In line with these arguments, this thesis will endeavour to enhance our understanding of Lazarus and Folkman's transactional model of stress by understanding the role of <u>social identity salience</u> in the appraisal of stressful situations. Specifically, the social psychological dimensions of appraisal and coping will be clarified. As Mead (1934, cited in Thoits, 1982) has postulated, social identities originate in social interaction and are important aspects of psychological wellbeing. Here, then, there is clearly scope for group-based social influence to play a key role in the stress process. It is to the social identity approach that we will now turn.

CHAPTER THREE

The Social Identity Approach and Social Influence

The goals of this chapter are twofold. First, to present an outline of the social identity approach to issues in social (and, by extension, clinical) psychology and second to examine the role of social identity and self-categorization processes in social influence. The theoretical and empirical foundations of the social identity approach need to be articulated before we can understand its relevance to the stress process.

The concept of social identity (Tajfel, 1979; Tajfel & Turner, 1979) was developed as part of an attempt to foster an interactionist approach to social psychology. This approach is founded upon a critique of individualism. In most other approaches to social psychology the primary unit of analysis is the individual and the group is seen only as a context in which individual behaviour takes place (Turner & Oakes, 1986). Typically, little consideration is given to the view that people's personal attributes and cognitive processes, are in fact, influenced and shaped by the groups to which they belong. However, an alternative view holds that social psychology is not about individual differences, but socially shared features of psychology and interaction. Thus we need to explain human social behaviour in terms of the "cognitive and socially shared organization of the [social] system" within which people define themselves and interact (Tajfel, 1981, p. 49). The social identity approach postulates that the self is comprised of both a personal identity and a social identity. The component of the social identity approach that is most pertinent to this thesis is self-categorization theory (Turner, 1982, 1987, 1991; Turner, Hogg, Oakes,

Reicher & Wetherell, 1987; Turner et al., 1994). This theory grew out of social

identity theory and therefore this chapter will begin with a brief overview of the

theoretical and empirical foundations of social identity theory. We shall then

summarise self-categorization theory and the theoretical principles underlying social

influence that it specifies.

3.1   Social identity theory

The social identity theory of intergroup behaviour (Tajfel, 1979; Tajfel &

Turner, 1979) postulates that the individual and society cannot be dissociated, as they

are emergent properties of each other (Tajfel, 1979). This theory was originally

developed to explain the psychological basis of intergroup discrimination. Tajfel and

his colleagues in the 1970s were interested in why group members favour their group

over other groups and what makes people believe that their group is better than others.

In an attempt to answer these questions a series of experiments were designed to see

how little it would take to create discrimination between groups. In what became

known as the "minimal group studies", Tajfel and his colleagues assigned participants

to groups that were designed to be as stripped-down and meaningless as possible

(Tajfel, Flament, Billig & Bundy, 1971). There was no interaction or contact between

group members, no group goals or history of hostility between groups, and the

participants were unaware of who was in their group. In addition, participants were

told that they were assigned to groups on the basis of trivial *ad hoc* criterion. Here,

then, the situation was "intergroup" insofar as participants were divided into two

distinct groups where they were able to perceive themselves as members of one group

and not the other (Abrams & Hogg, 1990; Turner, 1996).

In the initial minimal group studies (Tajfel et al., 1971), schoolboys were asked to either estimate the number of dots that flashed on a screen or express preferences for a number of abstract paintings by Klee and Kandinsky. The boys were told that they would be divided into two groups based on how they performed on these tasks (in actual fact, the assignment to groups was random). They were told which group they were in, but not the membership of other students. After this, the boys had to assign points (each signifying a small amount of money) to an anonymous member of their group (an ingroup member) and to an anonymous member of the other group (an outgroup member) but never to themselves. The findings indicated that even these most minimal of intergroup conditions were sufficient to produce ingroup-favouring responses. That is, participants awarded more points to people who were identified as an ingroup member than to people who were identified as an outgroup member, even though there were no personal rewards for doing so. In actual fact, participants were primarily concerned with getting more points than the outgroup rather than with getting as many points as possible for the ingroup. Thus, social categorization was sufficient to produce ingroup favouritism. It is interesting to note that Tajfel did not expect intergroup behaviour to occur in this highly controlled situation. His idea was to originally establish a baseline of no intergroup behaviour and then add variables cumulatively to see at what point intergroup discrimination would occur (Turner, 1996).

To test that social categorization produced the ingroup favouritism observed in the above findings, Billig and Tajfel (1973) conducted a study that distinguished social categorization from similarity between ingroup members. Billig and Tajfel (1973) argued that although the assignment to groups was on the basis of performance on an arbitrary task, the participants may have assumed that there was some similarity

between themselves and other ingroup members, and also that there was some difference between themselves and the members of the other group. The procedure followed the basic design of the initial minimal group studies. Participants were randomly assigned to one of four conditions: categorization/similarity, categorization/non-similarity, non-categorization/similarity and non-categorization/non-similarity. In the categorization/similarity condition participants were divided into two groups on the basis of their picture preferences. In the categorization/non-similarity condition participants were divided into two groups and they were told that this had been on the basis of chance. In the non-categorization/similarity condition participants were assigned code numbers on the basis of their picture preferences but there was no mention of groups. Finally, in the non-categorization/non-similarity condition, participants were randomly assigned a code number, there were no explicit groups, and code numbers were not assigned on the basis of similarities. Participants then had to assign points to one of two people who were (a) either identified or not identified as an ingroup and outgroup member and (b) either identified or not identified as having similar or different picture preferences. The main finding of this study was that the mere mention of 'group' was sufficient to produce ingroup-favouring responses. That is, participants in the categorization/non-similarity condition still allotted more points to members of a random ingroup category and discriminated against those assigned to a different random category. Further, their ingroup-favouring responses were more pronounced than those of participants in the non-categorization/similarity condition in which the notion of group had not been explicitly introduced. In sum, the presence or absence of social categorization influenced the allocation of points to a greater degree than the presence or absence of similarity between participants.

Taken together, the above studies suggest that the mere act of individuals categorizing themselves as a member of a <u>group</u> is sufficient to lead them to display ingroup favouritism. One of the most important points that Tajfel (1972) inferred from the minimal group studies was that when participants categorized themselves as members of a <u>group</u> this also gave their behaviour a distinct meaning. Moreover, "he suggested that there was a psychological requirement that groups provide their members with a <u>positive social identity</u> and that the positive aspects of social identity were inherently comparative in nature, deriving from evaluative comparisons between social groups. It followed that to provide positive social identity, groups need to distinguish themselves positively from other groups and that intergroup comparisons were focused on the maintenance and establishment of positively valued distinctiveness for one's ingroup" (Turner, 1996, p. 16). Along these lines, it can be inferred that the need for a positive social identity in the minimal group studies led to the observed ingroup-favouring responses. Here, the only available dimension on which participants could compare their ingroup with the outgroup was in terms of the point allocation and thus to achieve positive distinctiveness for their own group they awarded more points or favouring responses to it. These arguments provided the basis for a more comprehensive analysis of intergroup behaviour in the form of social identity theory.

According to social identity theory, the concept of social identity describes "those aspects of a person's self-concept based upon their group memberships together with their emotional evaluative and other psychological correlates (Turner and Oakes, 1986, p. 240; see also Tajfel, 1979). Put simply, "social identity is a part of a person's sense of who they are associated with any internalised group membership" (Haslam, 2001, p. 31; e.g., a self-definition as "us men" or "we

Australians"). A central tenet of this theory is that in all social situations, a person's self-concept (and social behaviour) will be defined at some point along an interpersonal-intergroup continuum between those in which their personal identity is salient (where they see themselves as unique individuals, distinct from all others) and those where their social identity is salient (where they see themselves as interchangeable with other members of a relevant social category, an ingroup; Turner, 1982). To reiterate, when personal identity is salient, one is aware of the features that distinguish oneself from other individuals and when a social identity is salient one is aware of the features that distinguish the ingroup from other comparison outgroups (Abrams & Hogg, 1990). At the interpersonal extreme, any social interaction that takes place is determined by the personal relationships between individuals and their individual characteristics. On the other hand, at the intergroup extreme, all of the behaviour of two or more individuals towards each other is determined by their group memberships of different social categories or groups (Turner & Haslam, 2001; Turner & Onorato, 1999).

A social identity is activated in order to meet the competing demands of differentiation of the self from others and inclusion of self into larger social collectives. The essential criteria for group membership are that individuals define themselves and are defined by others as members of a group (Turner, 1975, 1982). One can conceptualise a group "as a collection of individuals who perceive themselves to be members of the same social category, share some emotional involvement in this common definition of themselves, and achieve some degree of social consensus about evaluation of their group and their membership in it" (Tajfel & Turner, 1986, p. 15).

3.1.1 Theoretical assumptions and principles

In brief, the general assumptions of social identity theory (Tajfel & Turner,

1986) can be seen as threefold. The first is that individuals strive to maintain positive

self-esteem: that is that they strive for a positive self-concept. The second assumption

is that "social groups or categories and the membership of them are associated with

positive and negative value connotations. Hence, social identity may be positive or

negative according to the evaluations (which tend to be socially consensual, either

within or across groups) of those that contribute to an individuals' social identity"

(p. 16). The final assumption is that evaluation of one's own group is achieved by

reference to other specific groups, through the process of social comparison. Social

comparison involves the specific comparison between one's own beliefs, attitudes and

behaviours to the beliefs, attitudes and behaviours of others.

From these assumptions Tajfel and Turner (1986) derived three related

theoretical principles. The first is that individuals strive to achieve or maintain a

positive social identity. The second is that a positive social identity is based to a large

extent on favourable comparisons that are between the ingroup and some relevant

outgroups (groups whose members are seen as unlike the ingroup in a particular

situation). That is, the ingroup must be perceived as <u>positively distinct</u> from the

outgroups. This occurs through the process of intergroup differentiation, whereby

groups attempt to differentiate themselves from each other to achieve relative ingroup

superiority (Tajfel et al., 1971). For intergroup differentiation to occur, it is essential

that individuals internalise their aspect of their group membership as an aspect of their

self-concept, in other words, <u>they must subjectively identify with the relevant ingroup.</u>

The final principle is that when a social identity is unsatisfactory, individuals will

strive to make their existing group more positively distinct or they will leave their group in an attempt to join a more positively distinct group.

3.2 Self-categorization theory

Despite the fact that the concept of social identity is central to social identity theory, the theory itself does not provide a detailed analysis of the cognitive processes associated with social identity salience. Self-categorization theory grew out of the research on social categorization and the related concept of social identity, partly to address this issue (Turner, 1982, 1987, 1991; Turner et al., 1987). It provides a better understanding of the general principles that govern and predict <u>when</u> people will define themselves in terms of a personal or social identity. The theory proposes that at different times we perceive ourselves as unique individuals and at other times as members of groups and that these are two equally valid and true expressions of self (McGarty et al., 1994). For our purpose, it is necessary to note only some major ideas of self-categorization theory.

Initially work on self-categorization theory focused on providing an explanation of group behaviour and the theoretical implications of social identity itself. In particular, Turner (1982) focused on providing a more complete explanation of an individual's movement along Tajfel's interpersonal-intergroup continuum. As mentioned previously, according to Tajfel, a person's self-concept can be defined at some point along a continuum between their personal identity and social identity. Turner (1982) postulated that the functioning of the self-concept was the cognitive mechanism that produced movement along this continuum. Thus, interpersonal behaviour is associated with a salient personal identity and intergroup behaviour is associated with a salient social identity. Moreover, Turner (1982) argued that social

identity is the process that allowed intergroup behaviour to take place. As he put it, "the adaptive functioning of social identity...is to produce group behaviour and attitudes,...it is the cognitive mechanism which makes group behaviour possible" (Turner, 1984, p. 527). Another important point was the specification of the psychological process associated with social identity. Turner referred to this as the process of depersonalization, where individuals define and see themselves less in terms of unique attributes and individual differences and more as interchangeable representatives of some shared social category membership (Turner, 1982, 1984; Turner et al., 1987; Turner et al., 1994). For example, when an individual woman tends to categorize herself as a woman in contrast to men, she tends to accentuate perceptually her similarities to other women and enhance her stereotypical differences from men (Hogg & Turner, 1987; Turner et al., 1994). Here the self changes in both level and content and self-perception and behaviour becomes depersonalized.

In its present form, self-categorization theory provides an explanation of the variation in how people categorize themselves. Of particular significance are the conditions under which people categorize themselves more as social groups (in terms of social identity) and less as individual persons (in terms of personal identity; Levine & Reicher, 1996; Turner & Haslam, 2001; Turner & Onorato, 1999). Self-categorization theory assumes that cognitive representations of the self take the form of self-categorizations. Here the self is seen as a member of a particular class or category of stimuli in contrast to some other class or category of stimuli. Further, people may define themselves and others at a number of different levels of abstraction related by class inclusion (Rosch, 1978). This means that a given self-category is seen to be more abstract than another self-category to the extent that it can contain, but cannot be contained by the other. For example, all chemists are scientists but not

all scientists are chemists. The three most important levels of abstraction are: (a) the superordinate human level as a human being, (b) the intermediate social level as an ingroup member, and (c) the subordinate personal level as a unique individual (Turner, 1991; Turner et al., 1987; Turner et al., 1994). It is important to note that the level of abstraction is a relative concept and therefore any one person will have more than one available social category. For instance, the same individual may consider herself a psychologist in the lecture theatre, a socialist at the political rally, a sports fan at a basketball match and so on. Turner (1985) suggests that as one of these levels of self-categorization becomes more salient the other levels should become less salient and this is referred to as functional antagonism. Salience refers to the extent to which a self-categorization is applied at a particular level. Specifically, McGarty et al. (1994) comment that "salience relates not just to the general relevance of group membership but refers to selective change in self-perception whereby people actually define themselves as unique individuals or members of a group" (p. 287).

What are the specific conditions that determine whether people categorize themselves in terms of salient social group memberships or as individual persons? The theory explains this variation in how people categorize themselves in terms of an interaction between the relative accessibility of a particular self-category (otherwise known as the readiness of a perceiver to use a particular self-category) and the fit between the category and reality (McGarty et al., 1994; Oakes, 1987; Turner, 1991; Turner et al., 1994). Relative accessibility refers to a person's past experiences, present expectations and current motives, goals, needs and values. Moreover, "it reflects the active selectivity of the perceiver in being ready to use categories that are relevant, useful, and likely to be confirmed by the evidence of reality" (Turner & Haslam, 2001, p. 12). One important factor which influences a person's readiness to

use a given social category is the extent to which the person identifies with the group and the group is both valued and self-involving to the person. To put this another way, the effects of social identity salience will be most pronounced when a person identifies with an ingroup and internalises that group membership as an aspect of their self-concept (Doosje, Ellemers & Spears, 1995; Ellemers, Spears & Doosje, 1997).

Fit refers to "the degree to which a social category matches subjectively relevant features of reality – so that the category appears to be a sensible way of organizing and making sense of social stimuli (i.e., people and things associated with them)" (Haslam, 2001, p. 50). Fit has two aspects: comparative and normative fit (Oakes, 1987). Comparative fit is defined by the principle of meta-contrast (Turner, 1991; Turner et al., 1987; Turner et al., 1994). According to this principle, people will define themselves in terms of a particular self-category to the extent that the difference within that category or given dimension of judgement is seen to be smaller than the differences between that category and all other categories that are salient in a particular context. Normative fit refers to "the content of the match between category specifications and the instances being represented" (Oakes, 1987; Oakes, Haslam & Turner, 1994; Turner et al., 1994, p. 455). To illustrate, in order to categorize a group of students as science students as opposed to arts students, they must not only differ in attitudes and actions from science students more than from one another but the nature of these attitudes must be consistent with the person's expectations about the categories.

A study reported by Oakes, Turner & Haslam (1991) provides empirical support for the importance of fit in determining social category salience. In their study, participants watched a video of a group discussion among six students. Three of the students were members of the arts faculty and three of the students were

members of the science faculty. In the conflict conditions, there was disagreement between the arts and science students but agreement within each of these categories. In the consensus conditions all six students agreed with one another and finally, in the deviance conditions one arts student disagreed with the other five students. In half of the conditions, a target arts student (and agreeing others) expressed views that were consistent with participants' stereotypes of arts students while in the other half the same arts student expressed views that were expected to come from science students. The findings indicated that the participants' social identities as arts or science students were most salient in the consistent conflict condition (where there was both comparative and normative fit). Moreover, in this condition participants perceptually accentuated the similarities within their category and the differences between categories and attributed the students' attitudes to their academic field.

In sum, the categorization process is partially determined by the meta-contrast principle. This describes the comparative relations between stimuli, which lead them to be represented by a category. But in addition to the meta-contrast principle it is important to consider the social meaning of differences between people in terms of normative and behavioural content and also the readiness of a perceiver to use a particular self-category (Turner & Haslam, 2001; Turner & Onorato, 1999). It is essential to emphasise that the way in which people categorize themselves is highly variable and context-dependent. For example, biologists and physicists may be categorized and perceived as different in a science faculty meeting but be recategorized and perceived as similar (e.g., scientists) in a context that encourages comparison with social scientists (Turner & Haslam, 2001; Turner et al., 1994).

From the above review, the key points that are pertinent to this thesis are: (a) a person's self-concept may be defined in terms of their unique and individual

characteristics (their personal identity) and at other times in terms of their social

group memberships (their social identity), (b) our personal and social identities are

both true and valid expression of the self, (c) when a social identity becomes <u>salient</u>

people tend to perceive themselves less in terms of their personal differences and

individuality and more in terms of attributes that define them as members of an

ingroup, (d) depersonalization of self-perception produces group behaviour and,

finally (e) the effects of social identity salience will be most pronounced when a

person <u>identifies</u> with an ingroup and internalises that group as an aspect of their self-

concept.

Self-categorization theory has been applied to many processes in social

psychology. Some of these processes have included social judgement, crowd

behaviour, small group processes and social stereotyping. But arguably the most

extensive application to date has been in its explanation of social influence. It is to

this topic that we now turn.

3.3   Social influence and self-categorization

Social influence refers to the process through which people shape and change

the behaviour and attitudes of others (Haslam, 2001). Typically, the role of influence

in social psychology has been explained in terms of a distinction between

informational and normative influence. Normative influence is conformity to the

positive expectations of self and others. Alternatively, informational influence refers

to the acceptance of information obtained from others as evidence about reality. This

distinction was explicitly stated by Deutsch and Gerard's (1955) dual process model

and was anticipated by social comparison theory (after Festinger, 1954). Specifically,

according to Festinger's social comparison model, in order to test the validity of our

opinions we need to compare them against reality. There are two kinds of reality testing, the first is referred to as physical reality testing and the second is referred to as social reality testing. The physical mode of testing reality involves the direct use of one's own perceptual, cognitive and behavioural capacities without resorting to the opinions of others to evaluate a belief. On the other hand, when they engage in the social mode of reality testing individuals compare their views with similar others in order to evaluate a belief. Festinger argues that people turn to others who they see as similar in order to gain information (social reality testing) only when objective and non-social information (physical reality testing) is not available. Essentially, individual perception is seen as primary and valid whereas social influence is secondary, unreliable and only used as an extension of individual perception. Hence, individuals are assumed only to influence others by virtue of the asocial valid information that they possess and as a result informational influence is seen as an individual cognitive process. To put this another way, this model implies that people are primarily influenced by the validity of the information obtained by others and that normative influence – based on group memberships – is a secondary, unreliable process. However, more recently, self-categorization theory (Turner, 1987, 1991; Turner et al., 1994) has questioned whether physical reality testing exists in isolation from social reality testing and whether social reality testing really is secondary or optional.

Self-categorization theory postulates that the very possibility of influence is dependent upon the shared social categorical nature of the self (salient social identities). Moreover, it suggests that it is the shared social identity between self and ingroup members which leads people to tend to agree and also expect to agree in their reactions to the same stimulus situation. Therefore, it is not the informational content

per se of others that influences how we appraise situations, but the extent to which

that content is validated by social psychological means – with relevant others in a

context of a shared reality (McGarty et al., 1994; Platow, Mills & Morrison, 2000;

Turner, 1991; Turner et al., 1994). As McGarty et al. put it "there is an interplay

between how we view other people and what we think, in that the way we interact

with other people, and the impact they have on us, varies as a consequence of the

group memberships we perceive them to have" (1994, p. 270). Here physical and

social reality testing are not alternate bases of validity, rather they represent two

interdependent phases of a single process that involves both direct reality testing and

consensual validation by similar others (Turner, 1991). Thus, the social context is

important not only because it affects the information to which people are exposed but

also because it determines how the information is construed. We are more likely to be

persuaded by others and accept them as legitimate sources of influence, capable of

informing and validating our cognitions, when we categorize them as similar to self

(as ingroup members). This is less likely to be the case when we categorize the

source as different to self (an outgroup member). Furthermore, the same information

may be accepted or rejected, as different social identities become salient in different

contexts and this is a function of context-dependent categorization.

A study by McGarty et al. (1994) demonstrates that the acceptance of a

persuasive message is dependent upon whether the speaker is categorized as similar to

self (an ingroup member). In their study, participants were presented with a

persuasive message that was attributed to either an ingroup or outgroup speaker.

Before the participants were exposed to the message they were asked to express their

acceptance or rejection of the stance of the speaker's group, who either wanted to

improve road safety or outlaw the sale and consumption of alcohol (thus group

membership was made salient by making the participants identify and commit to the

group). The findings indicated that when group memberships were made salient a

message from the outgroup was less persuasive than one from an ingroup. That is,

participants were more likely to agree with the message when it came from an ingroup

source as opposed to an outgroup source when they were committed to their group

(conditions of high salience). In addition, participants accurately recalled more

arguments from an ingroup source than an outgroup source under conditions of high

salience. McGarty and colleagues (1994) inferred from these findings that the

persuasiveness of a message is a function of the extent to which it reflects a social

(ingroup) consensus. Furthermore "to the extent that self-perception is located at a

social categorical level (i.e., people currently perceive themselves to be

interchangeable with other ingroup members) perceivers will be more persuaded by

relevant ingroup than by outgroup members" (McGarty et al., 1994, p. 290). That is,

it is the shared social identity between self and others that leads people to agree and

expect to agree in their reactions to a situation (see also Haslam, Turner, Oakes,

McGarty & Reynolds, 1998).

Another study by Mackie, Asuncion & Worth (1990) also demonstrates that

the acceptance of a message is dependent upon whether the source is perceived as

qualified to inform the individual about reality. In their study, participants either read

or listened to a strong or weak message from a student from their university (an

ingroup member) or a student from another university (an outgroup member).

Findings indicated that the participants were more persuaded by a strong message

than a weak one from an ingroup member. But they were equally unpersuaded by a

strong or weak message from an outgroup member. Here, then, a poor message from

an ingroup member may not necessarily be seen as a good one but it is still more

persuasive than the same message from an outgroup member. Mackie and colleagues concluded "that what makes information strong, valid, relevant, and worthy of further attention depends upon the social context" (p. 821).

3.4   Summary

Having reviewed the social identity approach and its explanation of social influence we are now at the stage where it is possible to bring the social identity approach to bear upon an examination of the stress process. To summarise from the above review, a person's self-concept is comprised of both a personal identity and a social identity and these are both true and valid expressions of self. When a social identity becomes salient people tend to perceive themselves less in terms of their personal differences and more in terms of attributes that define them as members of an ingroup. Here the self changes in both level and content and self-perception and behaviour becomes depersonalized. Moreover, the effects of social identity salience will be most pronounced when a person identifies with an ingroup and internalises that group as an aspect of their self-concept. It is also important to reiterate that the way in which people categorize themselves is highly variable and context-dependent. Self-categorization theory provides a detailed analysis of social identity salience and some of the extensive empirical support for this view has been presented in this chapter.

The following chapter will present an integrated model that has the potential to enrich our understanding of stress at two different stages of the transactional process. In brief, we can assert that a situation will be appraised as stressful when it is relevant and meaningful not only to an individual's personal identity but also to their social identity. Specifically, the relevance of a stressor to an individual's personal or social

identity is dependent on the context and how the self is defined in a given context. In the previous chapter outlining the stress process, the research literature only considers the impact of a stressor from what is largely an individual perspective. The primary unit of psychological analysis is the individual. The social identity approach considers <u>how</u> the process of cognitive appraisal is actually influenced by the social context of salient social group memberships in which individuals find themselves. In addition, the role of social identity and self-categorization processes in social influence can provide an important explanation of when informational support will be beneficial and who will be qualified to give it. Within the stress literature, the benefits of informational support in the appraisal of stressful situations has been assumed to depend simply on its informational content. However, from a social identity and self-categorization perspective, social support in the form of informational support is not dependent upon the informational content *per se* of others. It is dependent upon the extent to which that content is provided to the stress sufferer by a person who is seen as qualified to inform him or her about reality (an ingroup member). The following chapter provides a more parsimonious account of social cognitive factors in the stress process by explaining the underlying process from a social identity and social influence perspective.

CHAPTER FOUR

An Integrated Model: Enhancing our Understanding of the Stress Process by Understanding the Role of Social Identity in Social Influence

In this chapter, the social identity approach and the role of self-categorization processes in social influence will be brought to bear upon an explanation of the stress process. In particular, the social psychological dimensions of appraisal and coping will be clarified. As a first step in this direction, the contribution of some formative work exploring the role of social identity and social influence in the stress process will be considered. This chapter will start, though, with a brief recapitulation of both Lazarus and Folkman's (1984) transactional model of stress and self-categorization theory. To facilitate the integration of these approaches we will focus on those aspects of both theoretical frameworks that are pertinent to the current research.

Lazarus and Folkman's (1984) transactional model of stress is predicated on an assumption that psychological stress arises from a relationship between the individual and the environment, where a cognitive appraisal intervenes between the environment and the subsequent experience of stress. This relationship is considered to be both dynamic and reciprocal. Thus, the characteristics of the relationship can change over time and circumstance and, in addition, the environment is seen to affect the person and the person is seen to have the capacity to influence the environment. Importance is given to the relational meaning and interpretation that a person constructs from their interaction with the environment. The essential point here is that psychological stress arises when individuals anticipate that they will not be able to

cope with a situation that they define as personally significant. Put simply, a situation will be perceived as stressful when it is perceived as such by the individual.

Lazarus and Folkman (1984) make the distinction between two types of cognitive appraisal: primary and secondary appraisal. Primary appraisal involves evaluating the significance of a situation or event in terms of the individual's wellbeing. Secondary appraisal concerns the individual's evaluation of the coping resources and options available to deal with potentially stressful situations. There are three types of primary appraisal and psychological stress. In particular, primary appraisal may view a potential stressor as irrelevant, benign positive or stressful. When a situation is appraised as stressful it involves harm, threat or challenge to the individual (Lazarus & Folkman, 1984; Tomaka et al., 1993). The current research mainly addresses the impact of irrelevant and threat appraisals. When a situation carries no implications for the individual's wellbeing, it is appraised as being irrelevant. Here the individual does not lose or gain anything from the interaction between themselves and the environment. In contrast, threat appraisals arise where harm or loss have not yet occurred but are anticipated and little if anything is to be gained from the situation. Some of the negative emotions associated with threat appraisals include fear, anger, and anxiety (Lazarus, 1993, 1999; Lazarus & Folkman, 1984).

Appraisal and coping processes are closely linked and coping is a central component of the transactional model (Breznitz & Goldberger, 1993; Lazarus, 1999; Moos & Schaefer, 1993). In essence, coping is defined as the effort to manage psychological stress (and the implicit prerequisite is the appraisal of a situation as harmful, threatening or challenging). Acknowledgement of the capacity for social factors to impact on the stress process is central to the coping literature. These factors

indicate the seeking of social support as a coping strategy and to the availability of social support as a coping resource (Aspinwall & Taylor, 1997; Cohen & Wills, 1985; Pearlin, 1993). Following Cohen and Wills (1985) social support can provide the individual with (a) a sense of self-acceptance and self-worth (emotional support), (b) social companionship, (c) information that is useful in understanding and coping with stressful events (informational support), and finally (d) concrete aid, material resources, and financial assistance (instrumental support). Several theorists assert that it is important to match the support to the type of stressor. Hence, different situations require different coping resources and strategies (Hobfoll & Vaux, 1993; Cohen & Wills, 1985; Cohen & McKay, 1984; Turner, 1981).

Consistent with Lazarus and Folkman's (1984) transactional account of the stress process, it is hypothesised that social support intervenes in the stress process only in the presence of potentially stressful situations by preventing or ameliorating the stress appraisal and accompanying negative emotions (the buffering effect model). Focusing on informational support, the individual is provided with the opportunity to compare their reactions with others and this assists in the reappraisal of stressful situations by increasing one's understanding of the situation and also indicating the appropriateness of one's emotional reactions. In other words, the exchange of information within the social network enables the person to acquire new interpretations and to clarify their understanding of potentially stressful situations. This point in turn suggests that the social context in which individuals find themselves, in particular, their location within a society of interacting groups (some of which they belong to) may exert influence over their stress response. In this vein, there is clearly potential for a better understanding of the role of group -based social

influence in the stress process. Moreover, it is possible that the meaning of stress and the social interactions that surrounds it is bound up with individuals' social identities.

Although the social support literature takes into account the role of group belonging and social influence in the stress process, its perspective is still inherently individualistic. That is to say, the primary unit of analysis is the individual acting as an individual. In the following section we will see that social comparison theory (after Festinger, 1954) has typically been applied to the social support literature. However, it fails to provide an adequate explanation of the role of the social context in the appraisal of stressful situations and events. Moreover, this model assumes that individuals influence others simply by means of the information that they possess and as a result informational support is seen as an individual cognitive process. Additionally, little consideration is given to how the stress process is influenced by relevant others in a context of a shared social reality. In contrast to this view, we argue that it is possible to examine how a stressor affects the individual at both the individual and social level of analysis. A person's self concept is comprised of both a personal identity and social identity and hence, a stressor may be relevant or irrelevant to self depending upon the context and whether the individual's personal identity or social identity is salient in that context (i.e., "I" and "me" or "we" and "us"). Thus social identity salience can play a role in the appraisal of stressful situations or events. In this respect, the purpose of this thesis is to enhance our understanding of psychological stress by understanding the role of social identity salience in the cognitive appraisal process. The principles of self-categorization theory are of particular relevance to our understanding of stress appraisals and in addition, the provision, receipt and benefits of social support.

As noted previously, self-categorization theory asserts that one aspect of the self is the cognitive aspect, and this is the system that determines how people categorize themselves. Further, cognitive representations of self take the form of self-categorizations (Turner, 1987, 1991). In simple terms, self-categorization theory postulates that a person's self-concept includes both their personal identity and social identities (although the theory acknowledges the possibility of more than two levels of identity). Thus, at different times we categorize ourselves as unique individuals and at other times as members of groups and these are both equally valid expressions of self. When individuals define themselves less in terms of their unique characteristics and attributes and more as interchangeable representatives of some shared social category membership (a salient social identity) there is a change in the level and content of self and self-perception and behaviour becomes depersonalized (Turner, 1982). This change in self-perception and behaviour is the cognitive mechanism that allows intergroup behaviour to take place (Turner, 1982, 1984, 1991; Turner et al., 1987).

The conditions that determine whether people categorize themselves as individual persons or in terms of salient social group memberships are quite complex. Moreover, it is essential to emphasise that the way in which people categorize themselves is highly variable and context-dependent. In the previous chapter it was illustrated that the way in which people categorize themselves is determined by the combination of their readiness to use a particular self-category and the fit between that category and reality (McGarty et al., 1994; Oakes, 1987; Turner, 1991; Turner et al., 1994). Fit describes the degree to which a social category matches subjectively relevant features of reality – so that the category appears to be organised and makes sense of social stimuli in a reasonable way (this includes both normative and

comparative fit; Haslam, 2001; Oakes, 1987). For our purpose it is important to keep in mind that the extent to which a person identifies with a particular social group is dependent upon their readiness to use that social category. Further, when a person identifies with a social group and internalises that group as an aspect of their self-concept, the effects of social identity salience will be most pronounced (Ellemers et al., 1997).

Self-categorization theory posits that our interaction with other people varies as a consequence of our perceived group memberships. Furthermore, the way in which people shape and change our behaviour and attitudes is dependent upon the shared categorical nature of self. That is, people are more likely to accept others as legitimate sources of influence, capable of informing and validating their cognitions, when they are categorized as similar to self. The social context is also important because it affects both the information a person is exposed to and the meaning and interpretation a person assigns to this information (McGarty et al., 1994; Turner, 1991; Turner et al., 1994).

4.1   A critique of the application of social comparison theory to the stress process

As noted previously, the idea that social factors play a role in the stress process has typically been explored using Festinger's (1954) social comparison theory as a framework for examining coping processes (Bunnk, 1994; Gump & Kulik, 1997; Kulik, Mahler & Moore, 1996). Social comparison theory postulates that people are motivated to validate their own opinions and accurately know their own abilities. Festinger argued that we prefer to evaluate our abilities and opinions using objective and non-social methods (physical reality testing), but when this objective information

is not available we will turn to others who we see as similar to self in order to evaluate ourselves and gain this information (i.e., engaging in social reality testing). Here, then, individual perception is seen as primary and valid whereas social influence is seen as "secondary, unreliable, indirect, abnormal and coercive and is only used in default and in so far as it functions as an extension of individual perception" (Turner, 1987, p. 70).

Although Festinger did not explicitly relate social comparison processes to stress, it is clear that these processes can be related to our understanding of coping with stress, as in such situations the need for self-evaluation is often quite prominent. Schachter (1959) explicitly established the link between social comparison theory and stress when he expanded social comparison to the domain of threat and emotion. According to Schachter (1959), the uncertainty generated by threatening and novel situations increases a person's desire to affiliate with others, particularly with others who are facing a similar situation to themselves. As he suggested, people are motivated to affiliate with similarly-threatened others because such individuals are thought to provide the best means of evaluating the "intensity, nature, or appropriateness of one's emotional state" (Gump & Kulik, 1997, p. 305). Moreover, by talking with or simply observing others in similar circumstances and comparing their emotional responses with our own, we are able to test out our initial interpretations and/or plans for dealing with potentially stressful situations or events.

In line with this argument, a number of studies have demonstrated that when placed in novel and threatening situations, individuals are more likely to affiliate with those who share a similar fate (Gerard & Rabbie, 1961; Gump & Kulik, 1997; Kulik et al., 1996; Schachter, 1959). For example, a study by Gerard and Rabbie (1961) demonstrated that when individuals were made fearful by the threat of an impending

electric shock they generally preferred to wait with someone also facing the impending threat (of similar emotional status) than on their own. When individuals were provided with information about the intensity of their emotional reactions and the emotional reactions experienced by others this reduced their desire to affiliate. Gerard and Rabbie (1961) inferred from these findings that threat increases the need for affiliation. However, this desire to affiliate with others facing a similar fate is reduced when individuals are provided with information that allows them to determine the appropriateness of their emotional reactions.

Another interesting aspect of Schachter's extension of social comparison theory concerns how a person's emotional reactions to a situation are actually influenced by others. According to Schachter (1959), affiliation produces pressure to establish a common social reality so that, if people encounter discrepant emotional reactions to a threatening situation, they will attempt to influence each others' emotional reactions to bring them closer to their own position – to develop a consensual view of the world. To put this another way, the social comparison model of contagion predicts that a person's emotional responses to a situation will be influenced by another individual's emotional state when one is under threat and faces a similar situation, rather than, dissimilar situation to that of the other person. Here, both verbal and non-verbal forms of affiliation with similar others provide the opportunity to increase one's understanding of the situation and to establish whether one's emotional responses are appropriate. This information is believed to influence others' appraisal of the stressful situation and their emotional reactions, producing consensus through a form of emotional contagion (Gump & Kulik, 1997). Under this model, it is assumed that the persuasiveness of a message is dependent only on the information provided. When people are uncertain about potentially

stressful events or situations, the information provided by the social network (regardless of the source) is thought to enable the person to clarify their understanding of the situation, and guide their emotional responses (Aspinwall & Taylor, 1997). In general, this theory of informational influence asserts that uncertainty arises from the objective ambiguity of a situation and that individuals rely on others for information to reduce this uncertainty. Here people will be influenced only if the information is provided by others perceived to give valid evidence about reality (Turner, 1987). In this respect, individuals are only expected to influence others by virtue of the (asocial) valid information they possess and the impact of social support in the appraisal of stressful situations has been assumed to depend simply on the informational content. In other words, informational support is seen as simply the acceptance of information obtained from others as evidence about reality. As a result, informational support is seen as an individual cognitive process. This suggests that people are primarily influenced by the validity of the informational content and that normative influence – based on social group memberships – is a secondary, inferior and unreliable process (Deutsch & Gerard, 1955).

In summary, within the stress literature, the influence of social support in the appraisal of stressful situations has been assumed to depend only on the informational content of stress-related signs and messages. In contrast to these assumptions, self-categorization theory's explanation of social influence suggests it is doubtful that physical reality testing exists in isolation from social reality testing. Nor is social reality testing secondary and optional. As Turner (1991) puts it, "rather than thinking of two alternative bases of validity, the physical versus the social, we should think of one basis with two interdependent phases, the phase of direct individual testing of reality and the phase of consensual validation by others" (p. 153). Self-categorization

theory argues that the very possibility of influence is dependent upon the shared categorical nature of self (our salient social identities). Further, it is the shared social identity between self and other relevant ingroup members which leads people to agree and also expect to agree (Haslam et al., 1998; McGarty et al., 1994). This point in turn suggests that it is not the informational content *per se* that influences how we appraise stressful situations, but the extent to which the content is validated by social psychological means – with relevant others in a context of a shared reality (McGarty et al., 1994; Turner, 1991; Turner et al., 1994).

On the above basis, we assert that informational support should influence cognitive appraisal only when it is provided to the stress sufferer by a person who is seen to be qualified to inform them about social reality, because that person is seen to be an ingroup member. In addition to this, is it possible to suggest that the validity of information is socially mediated and depends on the message content in interaction with the message source (Jacobs & Haslam, 2000). The essential point here is that the validity of information is partly determined by the perceiver's belief that information emanates from a relevant ingroup, whose members are qualified to inform him or her about social reality by virtue of their social categorical interchangeability with the perceiver. This is much less likely to be the case when we categorize the source as different to self (an outgroup member). In preliminary research, Jacobs and Haslam (2000) obtained some support for this analysis. In their study, participants waiting to participate in a mental arithmetic task were exposed to a message in which the testing situation was described as stressful or challenging. The message was delivered by the same person in each condition but this person was said to be either an ingroup member (a university student) or an outgroup member (a stress disorder sufferer). Based on self-categorization theory, the primary prediction was that participants

would appraise the testing situation as less stressful when a fellow student informed them that it was challenging rather than stressful. But the same message from the stress suffer was expected to have less impact on the participants' perceptions, and play a negligible role in ameliorating stress. Consistent with their predictions, when participants were informed by an ingroup member that a testing situation was challenging, as opposed to stressful, they perceived the situation as less stressful. However, the same effect was not apparent when participants were informed about the testing situation by a person they believed was an outgroup member. This provides formative support for the argument that the benefits of informational support are dependent upon the extent to which the stress sufferer identifies with the source.

4.2   Social identity and the stress response

The above critique suggests that although the stress literature carefully identifies the potential for social factors to impact upon the stress process, using social comparison theory as a framework for examining this possibility is too limited. For within social comparison theory the group is only seen as a context in which individual behaviour takes place rather than being an important determinant of the stress process. As a result, it is suggested that more attention needs to be paid to the impact of social identity salience in the cognitive appraisal process.

Work by James (1995, 1997) attempts to fill some of the gaps in existing knowledge of stress processes and social identity. In particular, social identity is proposed to exert a major influence on health-related outcomes for minority workers (African American) in majority-dominated organisations (European American). As James (1997) comments, "social identity is proposed to exert a major influence on both behaviour directed toward minority workers by non-minority colleagues that can

be stressors and on minority individuals' own perceptions of stress and their ability to cope with it" (p. 127). He also states that "because group memberships contribute substantially to identity and esteem, they are capable of influencing virtually all types of behaviors, cognitions, and emotions" (p. 128).

James (1995, 1997) asserts that the levels of social support minority workers receive from their colleagues may be the result of race-based social identities. Along lines suggested by social identity theory (Tajfel, 1979; Tajfel & Turner, 1979), James (1995, 1997) suggests that categorizing minority workers as outgroup members tends to increase perceptions of differences in values and social norms between them and the relevant ingroup. Moreover, the need to maintain a positive social identity and the extent to which favourable comparisons are made between the ingroup (European American) and relevant outgroup (African American) to achieve ingroup superiority, tends to promote discomfort and avoidance of interactions with outgroup members (Tajfel et al., 1971; Tajfel & Turner, 1986). For this reason, he argues that minority workers employed in mainly non-minority organisations may tend to receive relatively low levels of social support on the job.

The two major categories of social support at work that have been examined in previous research are support from coworkers and support from supervisors (Cummins, 1990; Ganster et al., 1986; Kaufmann & Beehr, 1986; Terry et al., 1996). Social support on the job has been shown to exert influence on the negative effects of work stressors when they arise, by reducing or alleviating their negative effects (see Cohen & Wills, 1985, for a review). Because of the effects of social identity on ingroup-outgroup relations, James (1995, 1997) asserts that minority workers may not obtain sufficient social support from either a non-minority supervisor or from a non-minority coworker. As he notes, "intergroup tensions can also inhibit minority

individuals' willingness to seek support from majority coworkers, as well as their willingness to accept such support should it be offered" (James, 1995, p. 110). Moreover, there are differences in the quality of support received and "in the effectiveness of the support depending on the relationships of the parties (e.g. whether or not they are from a common ingroup)" (James, 1995, p. 110).

In one study, James (1995) examined the level of perceived support on the job and health-related outcomes to an American organisation, such as days missed from work due to illness, between minority (African Americans) and majority workers (European Americans). Education and other socioeconomic factors were held constant. The findings indicated that minority workers reported lower levels of social support at work than the majority workers. In addition, social support was a significant predictor of health outcomes for majority workers. In particular, for majority workers social support on the job was associated with fewer behaviours that reflected health costs to the organisation. However, social support was not related to health outcomes among minority workers. The study provided support for some of the basic principles articulated by social identity theory and its explanation of what leads to different identity-related health outcomes in the workplace.

Having said that, though, it is notable that the above theoretical framework fails to present either (a) an adequate explanation of the stress process or (b) a detailed analysis of social identity salience and its influence in the stress process. Although James claims to integrate stress and social identity theory, no theoretical conceptualisation of stress is provided. James fails to acknowledge the cognitive appraisal process and the evaluation of the relational meaning and interpretation the person assigns from their interaction with the environment. Additionally, only a global measure of social support was assessed, and the different types of social

support that have been referred to in the stress literature were not taken into account. Further, no importance was assigned to matching the support to the type of stressor (Cohen & McKay, 1984; Cohen & Syme, 1985; Cohen & Wills, 1985; Hobfoll & Vaux, 1993; Turner, 1981).

A more detailed analysis of the cognitive processes associated with social identity salience would also provide a better understanding of when workplace stressors will be appraised as relevant or irrelevant to the self. James' use of social identity theory does not provide this detailed analysis. As demonstrated in the foregoing chapters, self-categorization theory provides a better understanding of the general principles that govern and predict when people will define themselves in terms of a personal identity or available social category. Self-categorization theory can also provide an account of why the effectiveness of social support depends upon whether the provider is an ingroup member. The theory explains that the very possibility of influence (or support) is dependent upon the shared categorical nature of self. The work by James (1995, 1997) also fails to provide an explanation of the underlying social psychological processes associated with the provision, receipt and benefits of social support. Finally, James (1995, 1997) does not highlight the variable and context-dependent nature of stress and self-categorization processes.

4.3 The current theoretical model: Enhancing our understanding of the stress process by understanding the role of social identity and social influence

From the arguments outlined thus far, one important point emerges – the need to clarify the role of social identity salience and social influence in the cognitive appraisal of (and the individual's ability to cope with) potentially stressful situations.

In this section we will present an integrated model which has the potential to enhance our understanding of the cognitive appraisal of stress by considering how the appraisal process is actually affected by the social context. We will attempt to demonstrate that self-categorization theory can provide a more parsimonious account of stress at two different stages of the transactional process. The social psychological dimensions of both cognitive appraisal and coping will be articulated.

Lazarus and Folkman's (1984) transactional model of stress and self-categorization theory (Turner, 1987, 1991; Turner et al., 1987) are two very different models that provide an account of two distinct psychological processes. Therefore, one might ask how social identity salience and social influence relate to the transactional stress equation? The possibility of integration rests upon the following assumptions. First, both theoretical models provide an account of a psychological process. Second, cognitive appraisal, coping and self-categorization processes are both dynamic and variable. Specifically, the interaction between the person and the environment in the transactional stress equation and the conditions that determine whether people define themselves in terms of a personal identity or social identity can change over time and circumstance. This leads to the final assumption that cognitive appraisal, coping and self-categorization processes are context-dependent.

The current theoretical framework replaces Lazarus and Folkman's traditional conceptualisation of stress by hypothesising that stress is a particular relationship between the person and the environment that is appraised as taxing or exceeding his or her resources and endangering his or her self-concept, which includes both one's personal identity and social identities. Here, then, the cognitive appraisal process has been augmented to also include social wellbeing. At present, Lazarus and Folkman (1984) conclude that a situation will be appraised as stressful only when it is relevant

and meaningful to the individual's wellbeing. In addition to this, they define coping as the continually changing behavioural and cognitive efforts to manage either external and/or internal demands that are appraised as taxing or exceeding the resources of the individual. However, following principles from the social identity approach, a more comprehensive definition of coping incorporates the self-concept. Thus, coping is defined as the continually changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as exceeding the resources of the individual and endangering his or her self-concept.

The empirical chapters will examine the potential of social identity salience at two different stages of the stress process. First, it is suggested that social identity principles can help to further our understanding of why a potentially stressful situation is appraised as relevant or irrelevant to the individual. According to Lazarus and Folkman (1984) the primary appraisal refers to the evaluation of the situation in terms of its significance to the individual's wellbeing. Here, then, the primary appraisal only reflects the personal relevance of an encounter to the individual's wellbeing. Lazarus and Folkman fail to take account of the fact that our cognitive processes, emotions and personal attributes, are influenced and shaped by the groups to which we belong. Moreover, it is important to explain human behaviour in terms of the cognitive and socially shared features of the social context within which people interact and define themselves (Tajfel, 1981). Therefore, from a social identity perspective, primary appraisal refers to the evaluation of the situation in terms of its significance to the person's self-concept, which may be comprised of both a personal identity and social identity. The primary appraisal reflects the relevance and importance of an encounter to one's personal identity or social identity. In this vein, it is hypothesised that the impact of a stressor will vary as a function of its perceived

relevance and importance to self. It also follows that interruption of any process not relevant to the self should not result in a stress appraisal. In addition, it is essential to emphasise that a situation will be appraised as relevant or irrelevant to the self depending <u>upon the context and how the self is defined in a given context</u>. This is consistent with the dynamic, variable and context-dependent nature of stress and self-categorization processes.

Secondly, self-categorization theory and its specification of the theoretical principles underlying social influence (McGarty et al., 1994; Turner, 1987, 1991) can provide a more accurate account of the provision, receipt and benefits of informational support. The main ideas are as follows. When a situation is appraised as potentially stressful something must be done to manage it and this is when the secondary appraisal comes into play. Secondary appraisal includes the assessment of the coping resources and options available to the individual to deal with the potentially stressful situation at hand (Lazarus & Folkman, 1984). One particular coping resource, in the form of social support, can have a beneficial effect on the individual's self-concept (depending upon the context and how the self is defined in a given context). Specifically, we propose that informational support should influence the cognitive appraisal process and accompanying stress reaction, when it is provided to the appraiser by a person who is seen to be qualified to inform him or her about social reality (an ingroup member). According to this view, informational support is socially mediated and depends upon the message content in interaction with the message source. In other words, the provision, receipt and benefits of informational support should be evident when the source and the appraiser share the same social identification (and accompanying perspective) in the context in which information is provided. Furthermore, as different identities become salient in different contexts, the

way in which people appraise and cope with the very same information will change

(Jacobs & Haslam, 2000; Levine & Reicher, 1986).

Accordingly, if a stressor is relevant to a person's social identity and they

receive informational support from an ingroup member about a testing situation, their

stress response should decrease when subjected to the same testing situation again.

However, the same pattern should not apply when a stressor is relevant to a person's

personal identity and they are exposed to informational support provided by another

individual. This argument is derived from the premise that the benefits of

informational support are dependent upon the extent to which the stress sufferer

identifies with the provider and perceives him or her as an ingroup member (in a

context of a shared social reality). Figure 4.1 provides a schematic summary of this

integrated model.

Taken together, the above arguments provide a theoretical framework that

helps to clarify the role of social identity salience and social influence in the stress

process. Importantly, it provides an alternative and more comprehensive perspective

to the cognitive appraisal of stress. We will now turn to the empirical chapters that

attempt to test these ideas.

Primary Appraisal   **Secondary Appraisal**

Is this stressful?   Can I cope?

self-categorization processes

personal vs. social identity salience ('I' vs. 'we')

self-categorization processes

social judgement and social influence

Stressor

relevance and threat to self

receipt, provision, and benefit from social support

Stress Response
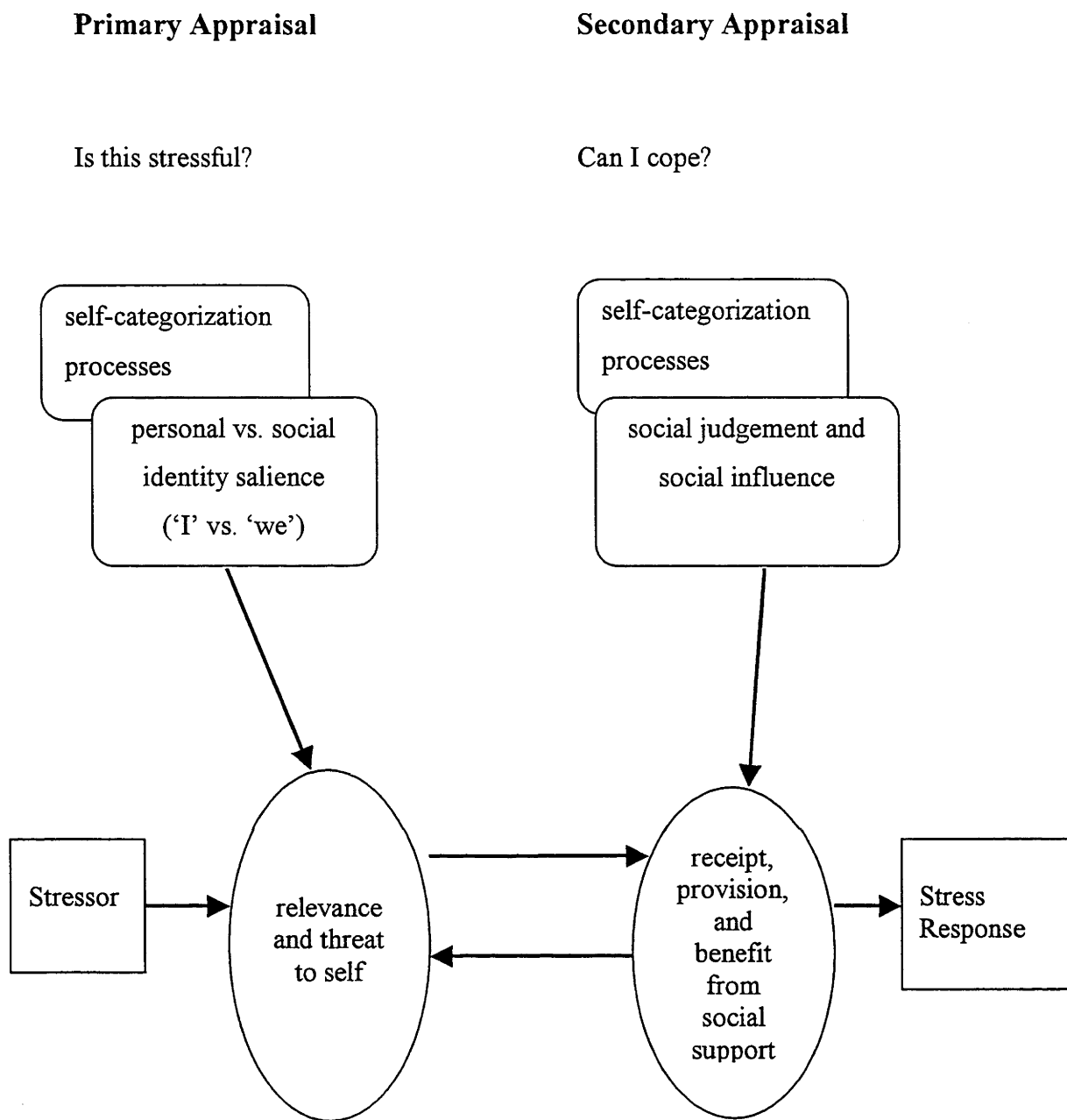
Figure 4.1: Self-categorization principles and the cognitive appraisal of stress

CHAPTER FIVE

The Contribution of a Shared Social Identity to the Provision, Receipt and Benefits of Informational Support

In the foregoing chapters the literatures examining the stress process and the social identity approach were reviewed, with the goal of integrating these two approaches to provide a more comprehensive account of the stress equation. In the fourth chapter, an integrated model was presented that has the potential to further our understanding of stress at two integral stages of Lazarus and Folkman's (1984) transactional model of stress. The current theoretical framework suggests that self-categorization theory and its explanation of social influence is of particular relevance to the process of cognitive appraisal.

The stress literature was reviewed to highlight the limitations of traditional theoretical models of stress. As we saw, Lazarus and Folkman's (1984) transactional model of stress provides a powerful critique of traditional stimulus and response approaches. The centrepiece of their model is the cognitive process of appraisal where importance is assigned to the individual's relational meaning and interpretation construed from their interaction with the environment. However, the transactional model of stress is problematic to the extent that it fails to provide an adequate account of the role of the social context and social interaction that surrounds human behaviour and cognitive processes. An examination of Lazarus and Folkman's transactional account of stress has raised the question of why the possibility for group-based influence in the appraisal of stressful situations (both at the primary and secondary level of analysis) has been overlooked. The process of cognitive appraisal in the

study of cognition, emotion and behaviour to date is founded upon a psychological approach dominated by individualism. Although Lazarus and Folkman may have furthered our understanding of stress, a more comprehensive account of the stress process needs to take into account the role of social identity and social factors. At this stage, the transactional equation fails to incorporate a person's social identity into the cognitive appraisal process. Moreover, while Lazarus and Folkman discuss the importance of the social network in the provision, receipt and benefits of social support, little consideration has been given to how this may actually take place from a social psychological perspective. Thus far, the literature asserts that social support may intervene in the stress process by preventing or ameliorating a stress appraisal but the social psychological mechanisms that enables this to take place have not been appropriately specified.

Indeed, Schachter (1959) furthered the argument for the role of social factors when he applied social comparison theory to the study of threat and emotion. A number of studies have collectively demonstrated that people prefer to affiliate with similar others when they are placed in threatening situations (Gerard & Rabbie, 1961; Gump & Kulik, 1997; Kulik et al., 1996). However, under this model, social influence in its restricted form of informational influence is seen as a secondary process that only comes into play when direct individual testing is difficult. Here individuals merely act as extensions of one's individual sensory apparatus and such influence is not, therefore, a group process but at best an interpersonal averaging (Turner, 1987, 1991). On this basis, individuals are assumed only to influence others by virtue of the (asocial) valid information they possess. Hence, the influence of social support in the appraisal of stressful situations has been assumed to depend simply on its informational content. While the literature indicates the potential for

social factors to impact upon the stress process, a truly social psychological

explanation has yet to be provided.

In addition, it is important to note that limited previous research examines the

impact of social identity in the cognitive appraisal process. Research by James (1995,

1997) suggests that our group memberships are in fact capable of influencing all types

of emotions, cognitions and behaviours. James (1995, 1997) basically concludes that

minority worker's salient racial identities in majority dominated organisations is what

leads to identity-relevant stressors for minority workers that are different to the

identity-irrelevant stressors for majority workers. He also asserts that social identity

is related to the availability and quality of social support that minority workers receive

on the job. To illustrate, in one study, minority workers reported lower levels of

social support at work than their majority counterparts. Additionally, the support

minority workers received was less likely to be related to positive health outcomes.

Nevertheless, although James attempts to integrate social identity theory and the stress

process, he fails to define the concept of psychological stress. Furthermore, he

overlooks the importance of the cognitive appraisal process and the mechanisms

behind integrating social identity and stress are not specified. Finally, the approach is

limited in its capacity to provide a detailed analysis of when social support will be

beneficial and who will be qualified to give it.

At present only one study in the stress literature provides some support for the

integration of self-categorization principles and the cognitive appraisal process.

Specifically, Jacobs and Haslam (2000) have pointed to the benefits of receiving

support about the nature of a stressful situation from someone with whom one shares

social identity – an ingroup member. Having said that though, Jacobs and Haslam

(2000) only examined the effect of receiving support in relation to an upcoming

potentially stressful task. They did not examine the benefits of receiving support between undertaking several stressful tasks. That is, they did not assess whether the stress response lowered after receiving informational support. Finally, this study did not explore the difference between receiving support when an individual's personal identity or social identity was salient.

It can be seen from the research presented in earlier chapters, that there is clearly scope for a better understanding of the relevance of social identity and social influence to the stress literature. Attempts to specify the role of social identity salience in Lazarus and Folkman's cognitive appraisal process would appear to be an important first step. In this chapter, two experiments will be presented that work towards establishing the mechanisms behind integrating cognitive appraisal of stress and self-categorization processes. The main goal here is to examine how the contribution of a shared social identity in the provision and receipt of informational support impacts on the cognitive appraisal process.

To briefly recapitulate, self-categorization theory posits that our interaction with other people varies as a consequence of our perceived group memberships. It is important to remember that the way in which people shape and change our behaviours and cognitions is dependent upon the shared categorical nature of self (McGarty et al., 1994; Turner 1991; Turner et al., 1994). In a similar vein, a shared social identity should exert influence over the cognitive and emotional processes involved in appraising and responding to potentially stressful situations. In this way, informational support should influence how people appraise (and cope with) potentially stressful situations when it is provided to the stress sufferer by a person they categorize as similar to self. This is less likely to be the case when the stress sufferer categorizes the source as different to self. Thus, information about the

stressful nature of an event or situation should enable people to acquire new interpretations and clarify their understanding when it is provided to the appraiser by a person who is seen as qualified to inform him or her about social reality (ie., an ingroup member). This is an alternative perspective to social comparison theory (Festinger, 1954; and Schachter's application of social comparison theory to the stress domain) where the persuasiveness of a message is only dependent on the information provided.

Experiment 1

In this experiment, the between-subject variable that was manipulated was self-definition, with participants being allocated to either a personal identity or social identity condition. Importantly, the existing social category membership of being a psychology student was selected in the social identity condition. In the study, participants performed an initial set of arithmetic exercises (Carroll, Turner & Hellawell, 1986; Katkin, Dormit & Wine, 1993) and then indicated how they felt during the task on measures designed to assess anxiety and the stress response. Before completing another set of arithmetic tasks, participants were required to write down three statements that another student might find helpful if they performed the task again. They then received the responses of another student (in actual fact a standard set of responses). After completing the second set of arithmetic exercises, participants rated their stress response again.

Based on self-categorization theory (Turner, 1987, 1991), the primary prediction was that the stress response would lower across the two sets of arithmetic tasks in the social identity condition where the participant received informational

support from a participant who shared the same social identity (a psychology student).

However, the same feedback was expected to have less impact on the participants'

perceptions, and play a negligible role in ameliorating stress in the personal identity

condition where the participant receives feedback from another individual. Overall,

then, it can be seen that the stress response is predicted to vary <u>interactively</u> as a

function of self-definition and study phase. These predictions are presented

schematically in Figure 5.1.
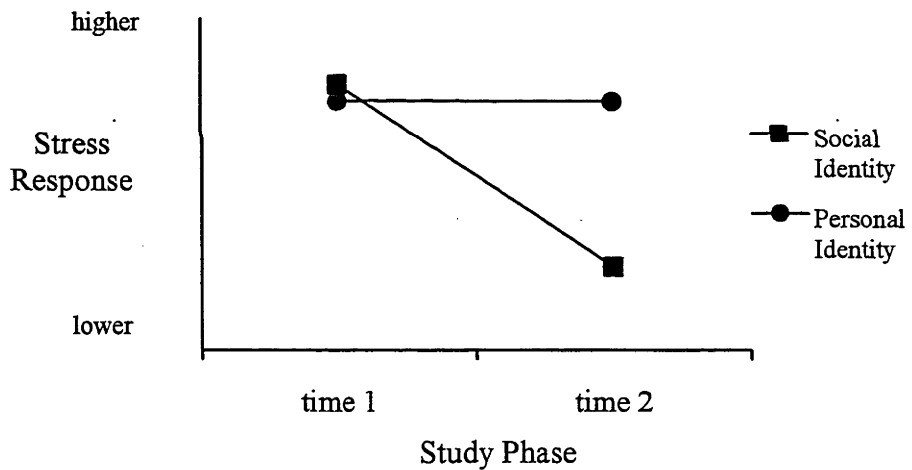
Figure 5.1: Predictions for Experiment 1

METHOD

5.1 Participants and Design

The participants were 58 year 11 and 12 psychology students from a Canberra senior high school who were asked to participant in a scheduled class time. Forty nine were female, nine were male and their median age was 17. A two-way factorial design was employed, with one between-subject factor (<u>self-definition</u>: personal identity/social identity), and one within-subject factor (<u>study phase</u>: time 1/time 2). Participants were randomly assigned to conditions. There were 28 participants in the personal identity condition and 30 participants in the social identity condition.

The primary dependent measures were the participants' self-reported level of stress during the first and second set of arithmetic tasks. Secondary dependent measures included the correct number of responses generated to the addition and subtraction exercises and a series of post-test manipulation checks.

5.2 Materials and Procedure

On arriving to the study, participants were seated at separate desks and they were informed that this study was an investigation of human performance and were told that they would perform a number of activities. Participants received a booklet titled "A study of performance". Self-definition was manipulated by applying Verkuyten and Hagendoorn's (1998) 'self-esteem' manipulation. This was originally used to manipulate the salience of nationality but it can be adapted to other contexts by changing the wording in the social identity condition (see Haslam, 2001, p. 373).

The personal identity condition booklet stated the following "people differ from each other in all kinds of ways, and every person is a unique individual. One

person loves music and another likes to go for a walk, and another person likes to read whereas another likes to go out. How do people differ from you?" Participants were asked to indicate what their hobbies were, when they were born, and whether they were concerned with their general appearance. Participants then indicated their agreement with a number of statements on seven-point response scales (where 1 = do not agree at all, 7 = agree completely). Examples of the statements are as follows:

1) On the whole I am satisfied with my life

2) I feel I do not have much to be proud of

3) I take a positive attitude towards myself

4) I wish I could have more respect for myself.

A sample booklet from the personal identity condition is included in Appendix A.

The social identity condition booklet stated the following "people belong to all kinds of groups, such as sports clubs, political parties, religious groups and also a nation. These groups differ from each other and can also compare themselves with others. One sport club can compare itself with another, one political party with another, one nation with another". Participants were asked to indicate when they started to study psychology, what area of psychology they find most interesting, and what area of psychology they find the least interesting. Participants then indicated their agreement with a number of statements on seven-point response scales (where 1 = do not agree at all, 7 = agree completely). Examples of the statements are as follows:

1) I feel good about being a psychology student

2) Overall, I often do not like being a psychology student

3) Being a psychology student is important to me

4) If I could have my time again, I would want to be a psychology student again.

Participants were then required to complete a mental arithmetic task, consisting of a series of addition and a series of subtraction exercises displayed on a video screen. The instructions displayed on the video stated that:

This study investigates human performance.

The study looks at people's performance on arithmetic tasks.

You will be given a set of arithmetic tasks to complete within a limited time. The questions will get harder over time.

Here are a few examples: 13 + 35, 20 + 57, 76 - 59.

Mental arithmetic tasks were employed as a basis for potential threat appraisals because they have been found to satisfy this purpose in previous research. Further, they can be administered easily and in a standardised manner (Carroll et al., 1986; Katkin et al., 1993). Presenting a task as one that must be performed and be performed quickly can result in threat related appraisals (Tomaka et al., 1997). As the video progressed the questions became more difficult and participants were given less time to answer them. There were 16 items in each addition and subtraction exercise. The addition set was presented first followed by the subtraction set. The first five items of each set were displayed for 2.5 seconds, items 6 to 10 were displayed for 2 seconds, items 11 to 15 were displayed for 1.5 seconds and item 16 was displayed for 1 second. There was a black space of 3 seconds between each item. The participants recorded their answers in the spaces provided in the response booklet (refer to Appendix B for a copy of the mental arithmetic tasks).

At the completion of this task, participants were asked to indicate their agreement with a number of statements on seven-point scales (where 1 = do not agree

at all, 7 = agree completely). Seven items required participants to rate how they felt during the arithmetic task. The items included (a) I was more worried that I normally am, (b) I felt more nervous and ill at ease than I normally do, (c) I had more difficulty concentrating than I normally do, (d) I felt more anxious than I normally do, (e) my face was more flushed than it normally is, (f) my heart was pounding more than it normally does and (g) I felt more discomfort in my stomach than I normally do. These items were adapted from the State-Trait Anxiety Inventory (Spielberger, Gorsuch & Lushene, 1983) and the Beck Anxiety Inventory (BAI; Beck & Steer, 1993). Reliability and validity of both instruments has been well-documented (Spielberger et al., 1983). Such short forms of these inventories have been shown elsewhere to provide valid measures of state anxiety (Kulik et al., 1996; O'Neil, Spielberger & Hansen, 1969). Participants then responded to an item asking them how important it was to be a psychology student. This question was intended as a manipulation check to assess the success of the social identity manipulation (see Haslam, Oakes, Reynolds & Turner, 1999).

Next, the participants were asked to write three supportive and helpful statements that they would give to another student if they had to perform the arithmetic task again. The responses were collected and placed into a sealed box. Participants were told that they would receive another student's response set. However, the participants actually received a standard set of responses that were selected from a side compartment within the box. These responses were intended to be supportive. The standard set of responses stated:

1) I found the tasks quite hard

2) Set 2 was harder than Set 1

3) It was good when it stopped.

Participants then completed another series of addition and subtraction exercises displayed on the video. They recorded their answers in the spaces provided in the response booklet and then re-rated how they felt during the arithmetic task to the same seven items that were employed in study phase 1. Participants also re-rated how important it was to be a psychology student. The next five items required participants to indicate (a) whether they found the feedback from the other student supportive, (b) how they were able to cope with the arithmetic tasks, (c) how they would generally describe themselves, (d) how interested they were in the study and (e) how much attention they devoted to the study's instructions and tasks. These manipulation items examined some of the general factors that are considered to affect the stress response. Two items were selected from the Self-Esteem scale (Rosenberg, 1965) to measure personal self-esteem on seven-point scales (where 1 = do not agree at all, 7 = agree completely). The items were (a) on the whole I am satisfied with myself and (b) all in all I am inclined to feel like a failure. In addition, two items were selected from the private subscale of the Collective Self-Esteem scale (Luhtanen & Crocker, 1992) to assess collective self-esteem. This general measure of collective self-esteem can be adapted to suit the particular social category of interest. Here, the items assessed the collective esteem associated with being a psychology student (on seven-point scales, where 1 = do not agree at all, 7 = agree completely). These items included: (a) I often regret that I am a psychology student and (b) in general, I am glad to be a psychology student

Finally, participants were asked to provide their age and sex. When participants completed this information they were debriefed and thanked for their involvement.

RESULTS

Data collected in this experiment were; (a) the participants' self-reported level of stress during the first and second set of arithmetic tasks, (b) the correct number of responses to each of the addition and subtraction exercises, and (c) the participants' responses to a series of post-test manipulation checks. The unit of analysis was the participants' individual scores on the above measures. The manipulation checks are presented in Table 5.1

Table 5.1

List of Manipulation Questions and the Variable Name

Manipulation Question	Variable Name
The extent to which participants found the feedback support	Feedback Supportive
The extent to which the participants were able to cope with the mental arithmetic tasks	Cope with Tasks
How the participants generally describe themselves	General Stress
How interesting they found the study	Study Interesting
How much attention they devoted to the study's instructions and tasks	Attention to Tasks
The extent to which participants feel like a failure	Feel Failure
How satisfied participants are with themselves	Satisfied with Self
The extent to which they regret being a psychology student	Regret Psychology
How glad they are to be a psychology student	Glad Psychology

Measures assessing the subjective stress response were collapsed to create two new variables: affect and somatic at study phase time 1 and time 2. As in previous research, the affect variable averaging responses to the items: worried, nervous and ill at ease, difficulty concentrating and anxious formed a reliable scale at time phase 1 (α = .83) and time phase 2 (α = .81). The somatic variable that averaged responses to the following items: face flushed, discomfort in the stomach, and heart pounding also formed a reliable scale at time 1 (α = .75) and time 2 (α = .75; e.g., see Spielberger et al., 1983; Beck & Steer, 1993). Means and standard deviations for the affect and somatic variables are presented in Table 5.2.

The appropriate reverse coding of measures to assess personal self-esteem and collective self-esteem was performed and the questions were collapsed to form two new variables, personal self-esteem (PSE) and collective self-esteem (CSE). Consistent with previous research, PSE and CSE formed reliable scales (α = .87, α = .72, respectively; Luhtanen & Crocker, 1992; Rosenberg, 1965).

5.3   Analytic Strategy

The analysis proceeded through five stages. First, the *a priori* predictions for affect and somatic variables were assessed by means of within group $\underline{t}$-tests. In the second stage, overall effects were investigated with a doubly multivariate MANOVA. Next, significant effects in the MANOVA were investigated with univariate follow-up tests. In the fourth stage, the manipulation checks were assessed by means of between group $\underline{t}$-tests. Finally, the performance scores at study phase 1 and study phase 2 were analysed by using an ANOVA.

5.4   Measures of the stress response

In line with the predictions, the analyses revealed that the affective response of stress significantly lowered from time 1 to time 2 for participants in the social identity condition (Ms 4.89 to 4.31, t (29) = 2.44, p<.05; Cohen's d = .45; power = .65). However, there was no difference in the personal identity (Ms = 4.49 to 4.09, t (27) = 1.33, ns; Cohen's d = .25; power = .25).

Looking at the somatic response of stress, there was a significant difference for participants in the social identity condition between time 1 and time 2 (Ms 3.87 to 3.40, t (29) = 2.06, p<.05; Cohen's d = .38; power = .51). Again there was no such effect for participants in the personal identity condition (Ms = 3.43 to 3.46, t (27) = 0.10, ns; Cohen's d = .02; power = .04).

Table 5.2

Means and Standard Deviations of the Affect and Somatic variables as a Function of Self-Definition and Study Phase

Self-Definition	N	Affect 1 M(S.D.)	Affect 2 M(S.D.)	Somatic 1 M(S.D.)	Somatic 2 M(S.D.)
Personal Identity	28	4.49(1.62)	4.09(1.54)	3.43(1.73)	3.46(1.48)
Social Identity	30	4.89(1.22)	4.37(1.00)	3.87(1.34)	3.40(1.28)

5.4.1 Multivariate effects

Using affect and somatic scores at both study phase time 1 and time 2 as the dependent variables, there was a significant main multivariate effect for study phase (F (2,55) = 3.32, p<.05). No effects emerged for self-definition ($\underline{F}$ (2,55) = 0.52, ns) or self-definition by study phase ($\underline{F}$ (2,55) = 0.79, ns).

5.4.2 Univariate follow-up tests

The affect and somatic variables were subjected to a 2(Self-Definition) × 2(Study Phase) analysis of variance with repeated measures on the last factor (Table 5.3). For the affect variable, the only effect to emerge was a significant main effect for study phase ($\underline{F}$ (1,56) = 6.64, $\underline{p}$<.01; Eta-Sqd = .06; power = .25), with perceived affective symptoms of stress being lower at time 2. This effect was not qualified by the predicted interaction between self-definition and study phase ($\underline{F}$ (1,56) = 0.23, ns; Eta-Sqd = .004; power = .05). No effects emerged for the somatic variable.

Table 5.3

<u>Univariate Follow-up Tests of Self-Definition and Study Phase for the Affect and Somatic variables</u>

IV	DV	$\underline{F}$	df	$\underline{p}$
Self-Definition	Affect	1.05	(1/56)	ns
	Somatic	0.95	(1/56)	ns
Study Phase	Affect	6.64	(1/56)	<.01
	Somatic	1.16	(1/56)	ns
Self-Definition × Study Phase	Affect	0.23	(1/56)	ns
	Somatic	1.56	(1/56)	ns

5.5 Manipulation check for social identity salience

To assess the strength of the self-definition manipulation, between group t-tests were performed comparing the level of identification with other psychology students in the personal identity and social identity condition. There was no difference on this measure either at time 1 or time 2 (personal identity time 1 $\underline{M}$ = 4.57 vs. social identity time 1 $\underline{M}$ = 4.67, $\underline{t}$ (56) = 0.92, ns; personal identity time 2 $\underline{M}$ = 4.61 vs. social identity time 2 $\underline{M}$ = 4.57, $\underline{t}$ (56) = 0.96, ns). This finding suggests that the question failed to assess the manipulation of social identity salience. All of the participants reported that they identified moderately with psychology students. Thus the question may have examined the participants' level of identification with a social category that applied to all of the participants as opposed to checking the manipulation of social identity salience (importantly all of the participants were psychology students). Alternatively though, the manipulation of social identity salience may not have been successful.

5.6 Manipulation checks

The responses to the seven manipulation measures were each analysed by means of between group t-tests (Table 5.4). These tests revealed no differences in the responses of participants in personal identity and social identity conditions on any measure. But there was a trend suggesting that there was a difference in the participants' level of interest in the study between the personal identity and social identity conditions ($\underline{t}$ (56) = 1.95, $\underline{p}$ = .06). However, the absolute values indicated all of the participants were moderately interested in the study. The means and their associated standard deviations are presented in Table 5.4.

Table 5.4

Means, Standard Deviations and t-values as a Function of Self-Definition

	Personal Identity (N=28)	Social Identity (N=30)	$\underline{t}$	$\underline{p}$
Feedback Supportive	3.25(2.05)	3.20(2.02)	0.09	ns
Cope with Tasks	2.71(1.36)	3.20(1.45)	1.32	ns
General Stress	4.07(1.61)	4.10(1.24)	0.08	ns
Study Interesting	4.61(1.57)	3.87(1.31)	1.96	ns
Attention to Tasks	5.14(1.48)	5.40(1.33)	0.70	ns
Personal Self-Esteem	4.95(1.52)	4.75(1.29)	0.53	ns
Collective Self-Esteem	5.05(1.79)	4.95(1.52)	0.24	ns

As can be seen in Table 5.4 there is little variability in the participants' responses to the following variables: (a) Feedback Supportive, (b) Cope with Tasks, (c) General Stress, (d) Attention to Tasks, (e) Personal Self-Esteem and (f) Collective Self-Esteem.

Additionally, all of the participants found the feedback mildly supportive, did not cope relatively well with the tasks, reported a moderate amount of general stress, devoted a moderate amount of attention to the study's instructions and reported a moderate to high amount of personal and collective self-esteem.

5.7   Measures of performance

The number of correct responses to the addition and subtraction exercises were found to be significantly correlated at time 1 and time 2 (time 1 $\underline{r}$ = .67, $\underline{p}$<.01; time 2 $\underline{r}$ = .68 $\underline{p}$ <.01). Cronbach's reliability coefficient for the correct responses at time 1 was 0.71 and at time 2 was 0.73. This suggests some consistency in the

number of responses to the addition and subtraction exercises at time 1 and time 2. Accordingly, the number of correct responses to the addition and subtraction exercises were added together to form a performance score at time 1 (Perform 1) and a performance score at time 2 (Perform 2).

Then, the performance score at time 1 and the performance score at time 2 was subjected to a 2(Self-Definition) × 2(Study Phase) analysis of variance with repeated measures on the last factor. Scores differed significantly as a function of study phase, with performance improving from time 1 to time 2 (Ms 11.14, 14.14, respectively; F (1,56) = 32.81, p<.001). No other effects emerged from the analysis. Relevant means and standard deviations are presented in Table 5.5.

Table 5.5

Means and Standard Deviations of the Performance Scores as a Function of Self-Definition and Study Phase

| | | Perform 1 | Perform 2 |
Self-Definition	N	M(S.D.)	M(S.D.)
Personal Identity	28	9.36(6.60)	13.04(7.83)
Social Identity	30	12.67(7.92)	15.07(7.40)

DISCUSSION

As predicted, when participants received informational support from a participant who shared the same social identity (a psychology student) their perceived affective and somatic symptoms of stress lowered from time 1 to time 2. However, this same effect was not observed when participants' personal identity was salient and they where given the same information but from an individual. Although the patterns observed on the primary measures support our experimental hypotheses, it is worth noting that there was no predicted interaction between self-definition and study phase in the analysis of variance.

Failure to observe the theoretical interaction between self-definition and study phase may reflect the study's lack of statistical power. For example, looking at the affect variable the power estimate for the interaction was around 0.05. According to Cohen (1988) power estimates need to be at least around 0.80. Importantly too, the effect size was around 0.004. Cohen (1988; Smithson, 2000) offers benchmarks where a small effect size = 0.2, a medium effect size = 0.5 and a large effect size = 0.8. The low level of statistical power observed in this experiment increases the chance of a Type II error rate that would lead to a failure to detect a real effect. In essence, the results suggest that to yield more statistically elegant and theoretically refined data, the power estimate of the study needs to be improved. This could be achieved by three means; (a) testing a larger sample, (b) improving the effect size, or (c) changing the acceptable level of Type I error (Cohen, 1988; Judd, McClelland & Culhane, 1995; Smithson, 2000).

Changing the acceptable Type I error rate should only be considered when the other options prove impossible to manipulate. An alternative way to improve statistical power could be to amend the study's design so that a larger effect size is

anticipated (Judd et al., 1995). Here, then, to increase power some design modifications need to be made when conducting another experiment. One way that this may be achieved is to strengthen the social identity salience manipulation. In essence, if participants were given the opportunity to interact with their group members and complete the manipulation as group and if they devised a nickname for their group, group membership may have been more psychologically meaningful and self-involving. Finally, (and relatively simple to implement) another study should also test a larger sample size. There is no doubt that the current experiment needs to be replicated with an appropriate sample size.

The manipulation checks indicated that there was no difference between participants on some of the general factors that are considered to affect the stress response. However, in this experiment, the social category membership applied to all of the participants and therefore the manipulation check of social identity salience may have failed to assess social identity salience appropriately. Finally, social category factors appear not to be implicated in a difference in performance between the conditions. All of the participants' performance improved during the second set of arithmetic exercises.

Notwithstanding the above statistical and methodological considerations, the present study challenges Lazarus and Folkman's (1984) original conceptualisation of the stress process by incorporating social wellbeing. Thus, the primary appraisal process entails the relevance and importance of a stressful event or situation to the individual's personal or social identity (depending upon the context-dependent nature of self-categorization processes). Over and above this claim, it is essential to highlight that the present findings also play an important role in attempting to clarify the role of social influence and group memberships in the appraisal of (and the

individual's ability to cope with) potentially stressful events. As predicted by self-categorization theory, it appears that it is not the positive informational content *per se* that influences how individual's appraise and cope with stressful events, but the extent to which the content is validated by social psychological means – with relevant others in a context of a shared social identity (McGarty et al., 1994; Turner et al., 1994). Moreover, informational support from ingroup members when our social identities are salient has more of an impact than information provided by an individual when our personal identity is salient. This is because ingroup members share the same social perspective as the perceiver and hence they are seen to be more informative about underlying reality (Turner, 1987, 1991). Only when the source shares the same social perspective as the perceiver is the informational support they offer likely to prove beneficial. This analysis indicates that cognitive appraisal is a much more fluid process than is commonly implied in the stress-related literature (Levine & Reicher, 1996).

Accordingly, the above analysis suggests that as different identities become salient in different contexts, the way in which individuals appraise and cope with the same information will change. The social context is therefore essential not only because it affects the information to which an individual is exposed but also because it influences how any information is construed. This is an alternative view to previous research (after Festinger, 1954) that has conceptualised the effect of social influence on appraisal in terms of informational influence alone, where informational support (regardless of the source) has been believed to reduce stress simply by providing a person with relevant facts.

Experiment 2

Again, the aim of this experiment was to demonstrate that the benefit of informational support in altering the cognitive appraisal of stress is dependent upon the shared categorical nature of self (a shared salient social identity). In this experiment, the manipulation of social identity salience was strengthened by allowing participants in the social identity condition to sit together and to devise and display a group nickname. In addition, the power estimate of this study was improved by increasing the sample size (Cohen, 1988; Judd et al., 1995). The procedure of this experiment was similar to the first experiment presented in this chapter. Furthermore, the primary hypothesis based on self-categorization theory remained unchanged. To reiterate, it was predicted that the stress response would lower across the two sets of arithmetic tasks in the social identity condition where the participant receives informational support from a participant who shares the same social identity (an ingroup member). However, the same feedback was expected to have a less impact on the participants' perceptions, and play a negligible role in ameliorating stress in the personal identity condition where the participant receives feedback from another individual. Thus, the stress response was predicted to vary interactively as a function of self-definition and study phase.

METHOD

5.8   Participants and Design

The participants were 79 first year psychology students from the Australian National University who received course credit for participating. Sixty were female,

nineteen were male and their median age was 20. A two-way factorial design was employed, with one between subject factor (self-definition: personal/social), and one within-subject factor (study phase: time 1/time 2). Participants were randomly assigned to conditions. There were 40 participants in the personal identity condition and 39 participants in the social identity condition.

The primary dependent measures were the participants' self-reported level of stress during the first and second set of arithmetic tasks. Secondary dependent measures included the correct number of responses generated to the addition and subtraction exercises and a series of post-test manipulation checks.

5.9   Materials and Procedure

Participants were informed that this study was an investigation of human performance and they were told they would perform a number of activities. Participants received a booklet titled "A study of human performance". This time self-definition was manipulated by applying Haslam et al.'s (1999) 'three things' manipulation. This procedure involves participants reflecting on things that they do often, rarely, well and badly.

Participants in the personal identity condition were seated at separate desks. Participants completed the following questions: list up to three things that you personally do relatively often; three things that you personally do relatively rarely; three things that you generally do well; and three things that you generally do badly. Participants then wrote a short paragraph indicating what they liked about being an individual.

Participants in the social identity condition were seated together as a group and completed the 'three things' manipulation as a group. Participants completed the

following questions as a group: list up to three things that you and the members of your group do relatively often; list three things that you and the members of your group do relatively rarely; list three things that you and the members of your group generally do well; and list three things that you and the members of your group generally do badly. Participants then completed a short paragraph indicating what they liked about their group and then devised a nickname for their group. For the remainder of the session, participants wore nametags displaying their group's nickname. To reinforce the social identity manipulation, participants in the social identity condition were also required to write their group's nickname in the space provided at the top of each page of the response booklet (a sample booklet from the social identity condition is included in Appendix C).

Participants were then required to complete a mental arithmetic task that consisted of a series of addition and subtraction exercises that were employed in the first study. At the completion of this task, participants were asked to go into separate cubicles and indicate their agreement with a number of statements on seven-point scales. Seven items required participants to rate how they felt during the arithmetic tasks. The items were selected from the first experiment and they included; worried, nervous and ill at ease, difficulty concentrating, anxious, face flushed, discomfort in the stomach and heart pounding.

Participants remained in the cubicles and were asked to write down three statements about the task that they thought another individual or group member might find helpful when performing the task again. The experimenter collected the responses and the participants were told that they would receive another individual's or group member's response set. They actually received a standard set of responses that were intended to be reasonably supportive. The response included:

1) The tasks were quite hard – especially set 2

2) You feel better when it stops!

3) There's more to life than maths!

Once the participants read the statements they went back to their seats and completed another series of addition and subtraction exercises that were also selected from the first study and recorded their answers in the spaces provided in the response booklet. Participants then went back into the cubicles to re-rate how they felt during the arithmetic task on the same seven items that were employed in study phase 1. Participants then indicated how strongly they identified with other students in the room. This question was selected from Doosje et al.'s (1995) four-item measure of identification. This scale is a suitable measure of both social identification and social identity salience (see Haslam, 2001). An additional six items required participants to indicate (a) while conducting the tasks if they thought they had anything in common with any of the other students taking part in the study, (b) whether they found the feedback from the other student supportive, (c) how they were able to cope with the arithmetic tasks, (d) how they would generally describe themselves, (e) how interested they were in the study, and (f) how much attention they devoted to the study's instructions and tasks. Participants then indicated their agreement with the four items from the first experiment that assessed personal self-esteem and collective self-esteem (however, the collective self-esteem questions were a general measure of esteem as opposed to assessing esteem for a particular social category).

Finally, participants were asked to provide their age and sex. When participants completed this information they were debriefed and thanked for their involvement.

RESULTS

Data collected in this experiment were: (a) the participants' self-reported level of stress during the first and second set of arithmetic tasks, (b) the correct number of responses to each of the addition and subtraction exercises, and (c) the participants' responses to a series of post-test manipulation checks. The unit of analysis was the participants' individual scores on the above measures. The manipulation checks are presented in Table 5.6

Table 5.6

List of Manipulation Questions and the Variable Name

Manipulation Question	Variable Name
The extent to which participants found the feedback support	Feedback Supportive
The extent to which the participants were able to cope with the mental arithmetic tasks	Cope with Tasks
How the participants generally describe themselves	General Stress
How interesting they found the study	Study Interesting
How much attention they devoted to the study's instructions and tasks	Attention to Tasks
The extent to which participants feel like a failure	Feel Failure
How satisfied participants are with themselves	Satisfied with Self
The extent to which they regret belonging to some social groups	Regret Social Groups
How glad they are to be a member of the social groups they belong to	Glad Social Groups

The affect variable from the first study that averaged responses to the following items: worried, nervous and ill at ease, difficulty concentrating, and anxious again formed a reliable scale at time 1 (α = .90) and time 2 (α = .91). The somatic variable that averaged responses to the following items: face flushed, discomfort in the stomach and heart pounding also formed a reliable scale at time 1 (α = .76) and time 2 (α = .85). Means and standard deviations for the affect and somatic variables are presented in Table 5.7.

The appropriate reverse coding of measures to assess personal self-esteem and collective self-esteem was performed and the questions were collapsed to form two new variables, personal self-esteem (PSE) and collective self-esteem (CSE). Consistent with previous research, PSE and CSE formed reliable scales (α = .79 and α = .86, respectively).

5.10   Analytic Strategy

The analysis was the same as Experiment 1 and proceeded in five stages. Refer to Experiment 1 for a review of the analytic strategy.

5.11   Measures of the stress response

In line with the predictions, the analyses revealed that the affective response of stress lowered significantly from time 1 to time 2 for participants in the social identity condition ($\underline{M}$s 4.49 to 3.75, $\underline{t}$ (38) = 3.88, $\underline{p}$<.001; Cohen's $\underline{d}$ = .62; power = .97). However, and not in line with the predictions, the affective response of stress also lowered significantly for participants in the personal identity condition ($\underline{M}$s 4.45 to 3.89, $\underline{t}$ (39) = 2.71 $\underline{p}$<.01; Cohen's $\underline{d}$ = .43; power = .75). Looking at the somatic response of stress there was a significant difference for participants in the social

identity condition between time 1 and time 2 ($\underline{M}$s = 3.68 to 2.97, $\underline{t}$ (38) = 4.35,

$\underline{p}$<.001; Cohen's $\underline{d}$ = .70; power = .99). Although not significant, there was also a

clear trend for the lowering of the stress response in the personal identity condition

($\underline{M}$s 3.23 to 2.85, $\underline{t}$ (39) = 1.93, $\underline{p}$ = .06; Cohen's $\underline{d}$ = .31; power = .47).

Table 5.7

Means and Standard Deviations of the Affect and Somatic variables as a Function of
Self-Definition and Study Phase

Self-Definition	N	Affect 1 $\underline{M}$(S.D.)	Affect 2 $\underline{M}$(S.D.)	Somatic 1 $\underline{M}$(S.D.)	Somatic 2 $\underline{M}$(S.D.)
Personal Identity	40	4.45(1.45)	3.89(1.44)	3.23(1.51)	2.85(1.43)
Social Identity	39	4.49(1.31)	3.75(1.31)	3.68(1.40)	2.97(1.34)

5.11.1 Multivariate effects

Using affect and somatic scores at both study phase time 1 and time 2 as the

dependent variables, there was a significant main multivariate effect for study phase

($\underline{F}$ (2,76) = 12.13, $\underline{p}$<.001. No effects emerged for self-definition ($\underline{F}$ (2,76) = 0.69, ns)

or self-definition by study phase ($\underline{F}$ (2,76) = 0.80, ns).

5.11.2 Univariate follow-up tests

The affect and somatic variables were subjected to a 2(Self-Definition) ×

2(Study Phase) analysis of variance with repeated measures on the last factor (Table

5.8). For the affect variable, the only effect to emerge was a significant main effect

for study phase ($\underline{F}$ (1,77) = 21.34, $\underline{p}$<.001; Eta-Sqd = .22; power = .99), with

perceived affective symptoms of stress being lower at time 2. This effect was not

qualified by the predicted interaction between self-definition and study phase

($\underline{F}$ (1,77) = .39, ns; Eta-Sqd = .005; power = .06). For the somatic variable, there was

also a significant main effect for study phase ($\underline{F}$ (1,77) = 17.63, $\underline{p}$<.001; Eta-Sqd

= .19; power = .99). Again, this effect was not qualified by the predicted interaction

between self-definition and study phase ($\underline{F}$ (1,77) = 1.38, ns; Eta-Sqd = .02; power =

.21).

Table 5.8

Univariate Follow-up Tests of Self-Definition and Study Phase for the Affect and
Somatic Variables

IV	DV	$\underline{F}$	df	$\underline{p}$
Self-Definition	Affect	0.03	(1/77)	ns
	Somatic	0.79	(1/77)	ns
Study Phase	Affect	21.34	(1/77)	<.001
	Somatic	17.63	(1/77)	<.001
Self-Definition ×	Affect	0.39	(1/77)	ns
Study Phase	Somatic	1.38	(1/77)	ns

5.12   Manipulation check for social identity salience

To assess the strength of the self-definition manipulation a between group

$\underline{t}$-test was performed comparing the level of identification with other students taking

part in the study in the personal and social identity conditions. There was a

significant difference in the level of identification between the personal identity and

social identity conditions ($\underline{M}$s 4.18, 4.95, respectively; $\underline{t}$ (77) = 2.42, $\underline{p}$<.05) with participants in the social identity condition identifying more strongly with each other than participants in the personal identity condition. This finding indicates the social identity salience manipulation was successful.

5.13   Measures of performance

The number of correct responses to the addition and subtraction exercises were found to be significantly correlated at time 1 ($\underline{r}$ = .55, $\underline{p}$<.01) and time 2 ($\underline{r}$ = .59, $\underline{p}$ <.01). Cronbach's reliability coefficient for the correct responses at time 1 was 0.71 and at time 2 was 0.74. This suggests some consistency in the number of responses to the addition and subtraction exercises at time 1 and time 2. Accordingly, the number of correct responses to the addition and subtraction exercises were added together to form a performance score at time 1 (Perform 1) and a performance score at time 2 (Perform 2).

The performance score at time 1 and the performance score at time 2 was subjected to a 2(Self-Definition) × 2(Study Phase) analysis of variance with repeated measures on the last factor. Scores differed significantly as a function of study phase, with performance improving from time 1 to time 2 ($\underline{F}$ (1,77) = 16.96, $\underline{p}$<.001). No other effects emerged from the analysis. Relevant means and standard deviations are presented in Table 5.9.

Table 5.9

Means and Standard Deviations of the Performance Scores as a Function of Self-Definition and Study Phase

Self-Definition	N	Perform 1 $\underline{M}$(S.D.)	Perform 2 $\underline{M}$(S.D.)
Personal Identity	40	15.68(8.06)	18.85(8.21)
Social Identity	39	18.85(7.34)	20.46(7.48)

5.14   Manipulation checks

The responses to the eight manipulation measures were each analysed by means of between group $\underline{t}$-tests. These tests revealed no difference in the responses of participants in the personal identity or social identity conditions on any measure. However, there was a trend in the predicted direction suggesting that participants in the social identity condition found the feedback more supportive than participants in the personal identity condition ($\underline{t}$ (77) = 1.46, $\underline{p}$ = .09). The means and their associated standard deviations are presented in Table 5.10.

Table 5.10

Means, Standard Deviations and t-values as a Function of Self-Definition

	Personal Identity (N=40)	Social Identity (N=39)	$\underline{t}$	$\underline{p}$
Common	5.00(1.47)	5.10(1.33)	0.33	ns
Feedback Supportive	4.48(2.13)	5.05(1.45)	1.46	ns
Cope with Tasks	4.10(1.50)	4.08(1.61)	0.07	ns
General Stress	4.33(1.21)	4.08(1.29)	0.09	ns
Study Interesting	4.48(1.07)	4.87(1.11)	0.04	ns
Attention to Tasks	5.48(0.91)	5.69(0.98)	1.03	ns
Personal Self-Esteem	5.51(1.36)	5.52(1.38)	0.04	ns
Social Self-Esteem	5.73(1.04)	5.78(1.09)	0.24	ns

As can be seen in Table 5.10, all of the participants thought they had something in common with each other, coped moderately well with the arithmetic tasks, reported a moderate amount of general stress, were interested in the study, devoted a lot of attention to the study's instructions, and reported a high amount of personal and collective self-esteem.

DISCUSSION

The results of Experiment 2 in part replicated the previous experiment. That is, when the participants received informational support from a participant who shared the same social identity (an ingroup member) their perceived affective and somatic symptoms of stress lowered from time 1 to time 2. However, this same effect was also observed when participants' personal identity was salient. Thus, the results failed

to highlight (based on self-categorization principles) the benefits of informational support being only contingent upon the appraiser and provider sharing the same social identity (McGarty et al., 1994; Turner, 1991). However, the aim of improving the power of this study was achieved. An important point to reflect upon is that Cohen's d did indicate medium effect sizes for the affect and somatic variable in the social identity condition (d = 0.62 and 0.70 respectively) but only small effect sizes in the personal identity condition (d = 0.43 and 0.31 respectively).

Notwithstanding the present findings, the manipulation check comparing the level of identification with other students participating in the study (Doosje et al., 1995) provided direct support for the success of the social identity salience manipulation. Specifically, participants identified more with one another in the social identity condition than participants in the personal identity condition.

There are a few possible explanations for the above findings. First, the lowering of the stress response in both the personal identity and social identity conditions could simple be the result of a practice effect. That is, by knowing what to expect the second time around, the participants may have found the arithmetic task easier. In line with this argument, there was an improvement in the average number of correct responses to the arithmetic exercises when participants performed the task the second time. It is therefore essential for any further research to include a condition that receives no informational support or feedback, so that the possible confound of a practice effect can be examined. Put simply, if the stress response was to lower in conditions were no informational support is provided this would suggest the possibility that results improved from practice rather than social support.

A second interpretation of the results obtained is that the ecological validity of the current experiment was poor. At the most basic level, the participants may not

have appraised the situation and their performance on the arithmetic tasks as particularly threatening (importantly, the self-reported stress response was only moderate in all experimental conditions). They may have had no interest in the consequences of their performance and probably no interest in the experimenter's evaluation. If we recall the review of the stress literature, in order for a situation to be stressful it needs to be perceived as such by the individual. Thus, for psychological stress to arise, an individual needs to anticipate that he or she will not be able to cope with a situation, or failure to meet any demand needs to be anticipated by the appraiser as personally significant (Folkman et al., 1991; Lazarus & Folkman, 1984). Along these lines, the importance of performing and the experimenter's evaluation of it could be made more realistic in another study by providing the participants with performance scores or by making the consequences of poor performance threatening. For example, if the participants were led to believe that they might be selected for a training video (if they perform poorly) at the completion of the experiment, this may make their performance more relevant and meaningful.

The experiments presented in this chapter represent the first attempt to clarify the role of social identity and social influence in the appraisal of stressful situations. In this respect, it is important to reflect upon some of the issues outlined above. Specifically, the relationship between informational support and self-definition may be more complex than what was initially hypothesised. Any further design needs to take this into consideration. Importantly, the possible confound of a practice effect has to be explored. Also, the stressor needs to be made more realistic and performance has to be more self-involving and meaningful to the participants. Even though the current experiment has not demonstrated the benefits of informational support being limited to conditions where the appraiser and provider share the same

social identity, it does suggest that the Lazarus and Folkman's (1984) transactional account of stress needs to also incorporate social wellbeing. In a similar vein to the first experiment presented in this chapter, the current findings tend to suggest that the primary appraisal process reflects the significance of a threatening situation to the individuals' personal identity and social identity.

The study presented in the following empirical chapter attempts to amend some of the methodological issues highlighted above and to improve our understanding of the relevance of social identity and social influence to the stress process. Based on self-categorization theory, the following chapter will examine social identity salience at two different stages of Lazarus and Folkman's (1984) transactional model.

CHAPTER SIX

Examining the Role of Social Identity in the Cognitive Appraisal Process

In light of the methodological concerns outlined in the foregoing empirical chapter, the experiment reported in this chapter ensured (a) that no feedback conditions were included to control for the possibility of a practice effect and (b) the ecological validity of the experiment was improved by making the stressor and performance on the arithmetic tasks more realistic to participants.

It is the intention of the study reported in this chapter to examine the role of social identity salience at two different stages of Lazarus and Folkman's (1984) transactional model of stress. First, based on self-categorization theory, it is suggested that for a situation to be appraised as threatening and stressful it must be perceived as relevant and important to one's personal identity or social identity. Importantly, this process is dependent upon the context and how the self is defined in that context. Second (and consistent with the previous experiments), the benefits of informational support should be evident when the appraiser and provider share the same social identification and accompanying perspective. Specifically, informational support about the stressful nature of an event or situation should influence the cognitive appraisal process when the appraiser identifies with the provider, perceives him or her as an ingroup member and internalises that group membership as an aspect of their self-concept (McGarty et al., 1994; Turner, 1991).

Accordingly, the aims of this study were threefold. First, to examine how the impact of a stressor varies as a function of its perceived relevance and importance to

self. Second, to examine the benefits of receiving informational support about a testing situation that is relevant to self from a person who shares the same social identity. Third, to ensure that the provision of informational support lowers the stress response as opposed to a practice effect.

In this experiment, three between-subjects variables were manipulated: self-definition, threat and feedback. Self-definition varied across two levels, participants being allocated to either a personal identity or social identity condition. Self-definition was manipulated by asking participants to reflect on the things they (or their group) do often, rarely, well and badly. In the social identity condition, group membership was made salient and meaningful by also providing participants with the opportunity to interact with their group members and devise a nickname for their group. Participants were also allocated to either an individual threat or group threat condition, with participants being told that their individual or group's performance on several arithmetic tasks would be compared to that of other individuals or groups (to obtain the lowest individual or group scores). It was assumed that the threat instructions would (a) further heighten the salience of the participants' social identity when the threat was identity-relevant and (b) would be more likely to result in a threat appraisal (and the associated negative emotions of anxiety) when the arithmetic task was identity-relevant than if it was identity-irrelevant (see Tajfel, 1971; Turner, Probasco, Leve, 1992). Finally, participants were allocated to either a feedback or no feedback condition, with participants in the feedback condition receiving information from other individuals or group members about their opinions of the tasks and where they felt their performance fell in comparison to others.

In the study, participants performed an initial set of arithmetic exercises and then indicated how they felt during the task on measures from the previous two

experiments to assess the stress response. Before completing another set of arithmetic exercises, participants in the feedback conditions were required to indicate how they found the task and where they thought their performance fell in comparison to others. Participants were told that their responses would be distributed to other individuals or group members and they would receive the responses of others (in actual fact they received a standard set of responses). After completing the second set of arithmetic exercises, participants rated their stress response again. The general hypotheses were: (a) the participants' experience of stress will be high only in conditions where the threat instructions and arithmetic tasks are relevant to the participants' personal identity or social identity, (b) the stress response should lower across the two sets of arithmetic tasks only when the participants receive feedback from someone who shares the same social identity – an ingroup member, and finally (c) the stress response should not significantly lower in the no feedback conditions.

On the basis of self-categorization theory, a number of more specific predictions were derived about the form of which the results of this study would take. Initially when participants perform the first set of arithmetic tasks it was anticipated that:

1) when a participant's personal identity is salient and a threat is appraised at the individual level, the experience of stress will be high because the stressor is perceived as relevant to self

2) when a participant's social identity is salient and a threat is appraised at the group level, the experience of stress will be high because the stressor is perceived as relevant to self

3) when a participant's personal identity is salient and the threat is appraised at the group level, the experience of stress will be low because the stressor is not intended to be perceived as relevant to self

4) when a participant's social identity is salient and the threat is appraised at the individual level, the experience of stress will be low because the stressor is not intended to be perceived as relevant to self.

Overall, then, it can be seen that the stress response is predicted to vary interactively as a function of self-definition and threat. These predictions are presented schematically in Figure 6.1.

Under conditions of feedback it was anticipated that predictions 1, 3 and 4 would still hold when participants performed the second set of arithmetic exercises. On the other hand when the participants' social identity is salient and the threat is at the group level and participants receive feedback from two other individuals who are purported to share the same social identity – an ingroup member, the stress response should lower across the two sets of tasks. These predictions are presented schematically in Figure 6.2. However, under conditions of no feedback it was anticipated that predictions 1, 2, 3 and 4 would still hold when participants performed the second set of arithmetic tasks and these predictions are presented schematically in Figure 6.3.
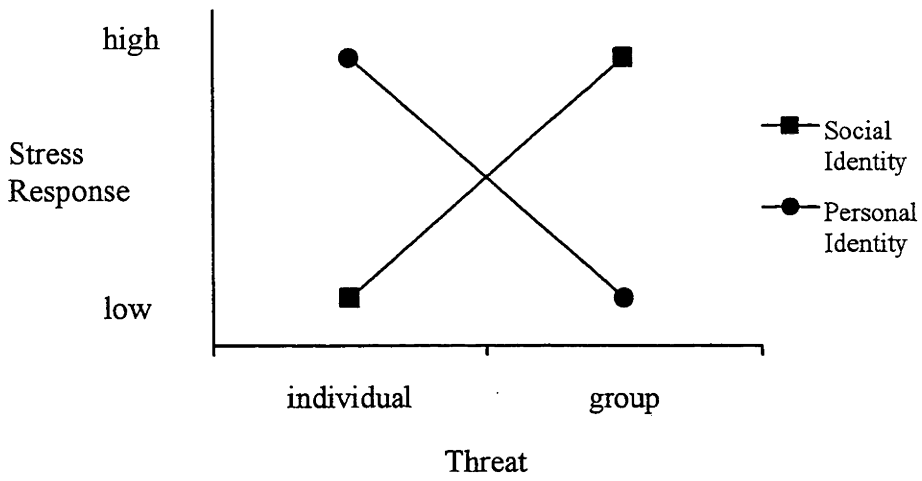
Figure 6.1: Experimental predictions at study phase time 1
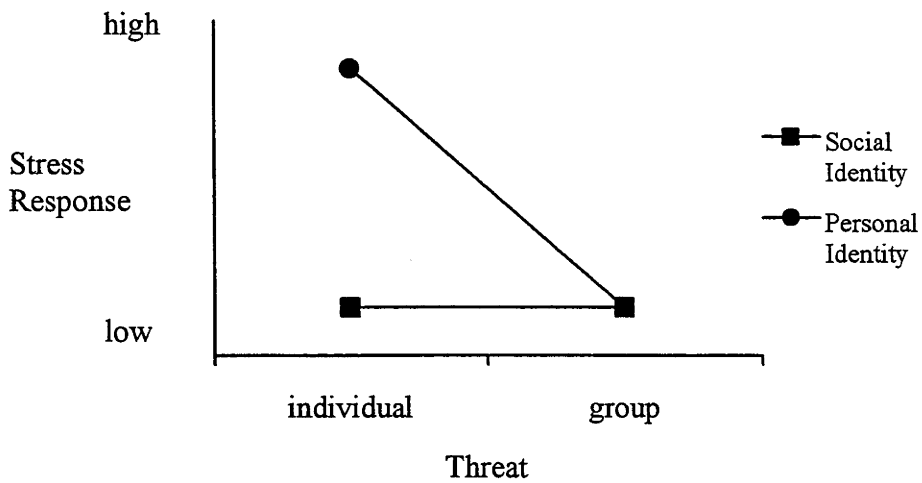
Figure 6.2: Experimental predictions for feedback conditions (study phase time 2)
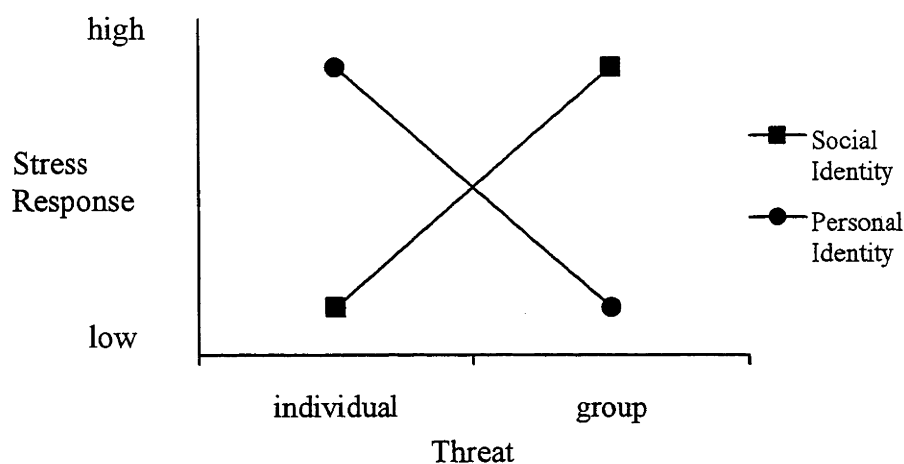
Figure 6.3: Experimental predictions for no feedback conditions (study phase time 2)

METHOD

6.1 Participants and Design

The participants were 78 year 11 and 12 students from a Canberra senior high

school who were asked to participant in a scheduled class time. Fifty were female and

twenty eight were male and their median age was 17. A four-way factorial design was

employed, with three between-subjects factors (self-definition: personal/social, threat:

individual/group, and feedback: feedback/no feedback) and one within-subject factor

(study phase: time 1/time 2). Participants were randomly assigned to one of the eight

independent conditions.

The primary dependent measures were the participants' self-reported level of

anxiety and stress during the first and second set of arithmetic tasks. Secondary

dependent measures included the correct number of responses generated to the addition and subtraction exercises and a series of post-test manipulation checks.

6.2   Materials and Procedure

On arriving to the study, participants were informed that the study was an investigation of human performance and were told that they would perform a number of tasks. Participants received a booklet titled "A study of performance". Again self-definition was manipulated using Haslam et al.'s (1999) 'three things' manipulation. Participants in the personal identity conditions were seated at separate desks while participants in the social identity conditions were seated together as a group and completed the 'three things' manipulation as a group. There were two groups in a session at a time and they were seated at opposite ends of the room. Participants in the social identity condition devised a nickname for their group and for the remainder of the session participants wore nicknames displaying their group's name. They were also required to write their group's nickname in the space provided at the top of each page of the response booklet to reinforce the social identity manipulation. Participants were then introduced to the potential of threat at either the individual or group level. The threat manipulation was adapted from a manipulation used by Turner et al. (1992). Participants in the individual threat conditions were told:

We are interested in the performance of students on arithmetic tasks. This is because today people rely too heavily on calculators and they tend to lose this valuable skill. One of the aims of today's session is to make a training video to show other students and teachers how they can improve student arithmetic performance. At the end of the experiment we will calculate the scores for each individual to find out the lowest scores. We will then make a video of the

individuals with the lowest scores performing the arithmetic tasks. This will provide examples of the mistakes and indicate why they performed so badly. This video will then be shown to other students from different schools so that they can learn from your mistakes and hopefully not lose this valuable skill.

Participants in the group threat conditions were told:

We are interested in the performance of students on arithmetic tasks. This is because today people rely too heavily on calculators and they tend to lose this valuable skill. One of the aims of today's session is to make a training video to show other students and teachers how they can improve student arithmetic performance. At the end of the experiment we will calculate the scores for each group [or participants in the personal identity condition were told that they would randomly be assigned to groups to calculate a group score] to find out the groups with the lowest scores. We will then make a video of the groups with the lowest scores performing the arithmetic tasks. This will provide examples of the mistakes and indicate why they performed so badly. This video will then be shown to other students from different schools so that they can learn from your mistakes and hopefully not lose this valuable skill.

A video camera was prominently on display to strengthen the threat manipulation.

Participants were then required to complete the first series of addition and subtraction exercises that were employed in the previous experiments. At the completion of this task, participants were asked to indicate their agreement with the same seven items from the previous experiments that assessed how they felt during the arithmetic tasks.

Next, participants in the feedback conditions were asked to fill out a response sheet indicating how they found the arithmetic tasks and where they saw their

performance falling. Participants circled one statement on each line asking how they found the tasks. The statements varied from:

1) Very easy, quite easy, quite hard to very hard

2) A lot of fun, a bit of fun to no fun at all

3) Not at all challenging, quite challenging to very challenging, and

4) Very simple, quite simple, quite complex to very complex.

Participants then indicated how well they thought they had performed by ticking one of the following: top 25%, middle 50%, or bottom 25%. Participants were required to fill out two feedback forms in exactly the same way supposedly so that their responses could be distributed to two other individuals in the room or two group members. Further, they were informed that they would receive two responses from two individuals or two group members. The responses were collected and placed into a sealed box. However, the participants actually received a standard set of responses that were selected from a side compartment within the box. One set of responses indicated that the task was very easy, a bit of fun, quite challenging and very simple with performance falling in the top 25%. The other set indicated that the task was quite easy, a bit of fun, quite challenging and very simple with performance falling in the top 25%. The responses were intended to be positive in the social identity condition where participants were led to believe that two other group members were doing well and thus the potential threat of their group being selected for the video would be reduced. In the personal identity condition the responses were not intended to be positive, particularly if the participants were performing badly. Specifically, the responses indicated that two individuals found the tasks easy and were performing in the top 25% and therefore, this should increase the potential threat of being selected for the video.

Once the participants read the responses they completed another series of addition and subtraction exercises displayed on the video screen. Participants in the no feedback conditions completed this series directly after indicating their agreement with the seven statements asking how they felt during the arithmetic tasks. At the completion of the second set of arithmetic exercises participants then re-rated how they felt during the arithmetic task on the same seven items that were employed in study phase 1.

Participants then indicated how strongly they identified with other students in the room. This question was used in the second experiment to assess the success of the social identity manipulation (Doosje et al., 1995). An additional seven manipulation checks then required participants to indicate on seven-point scales (a) while conducting the tasks if they felt they had anything in common with any of the other students taking part in the study, (b) whether the performance of any of the other students was important to them on the tasks they had just completed, (c) how they were able to cope with the arithmetic tasks, (d) how they would generally describe themselves, (e) how interested they were in the study, (f) how much attention they devoted to the study's instructions and tasks and (g) how much they would like to be in the video. These manipulation checks examined issues relevant to self-categorization theory and some of the general factors that are considered to affect the stress response.

Participants then indicated their agreement with the two items from the previous experiments to assess personal self-esteem (Rosenberg, 1965). Participants in the feedback conditions also indicated whether they found the feedback from the other students helpful. Finally participants were asked to provide their age and sex.

After participants had completed this information they were debriefed and thanked for their involvement.

RESULTS

Data collected in this experiment were: (a) the participants' self-reported level of stress during the first and second set of arithmetic tasks, (b) the correct number of responses to each of the addition and subtraction exercises, and (c) the participants' responses to a series of post-test manipulation checks. The unit of analysis was the participants' individual scores on the above measures. The manipulation checks are presented in Table 6.1.

6.3   Analytic strategy

The analysis proceeded through five stages. First, to assess identity-relevant and identity-irrelevant threat the affect and somatic variables (at study phase 1) were subjected to a self-definition by threat (2 × 2) ANOVA. The threat variable was dropped from any further analyses due to the failure to obtain the predicted interaction between self-definition and threat. In the second stage, overall effects were investigated with a doubly multivariate MANOVA. Then, significant effects in the MANOVA were investigated with univariate follow-up tests. In the fourth and fifth stages manipulation checks and performance scores at study phase 1 and study phase 2 were analysed using ANOVAs.

Table 6.1

List of Manipulation Questions and the Variable Name

Manipulation Question	Variable Name
The extent to which participants felt they had anything in common with any of the other participants	Common with Other Participants
The extent to which participants thought the performance of others was important	Performance of Others Important
The extent to which participants identified with other students in the room	Identify
The extent to which participants were able to cope with the mental arithmetic tasks	Cope with Tasks
How participants generally describe themselves	General Stress
How interesting they found the study	Study Interesting
How much attention they devoted to the study's instructions and tasks	Attention to Tasks
How much they would like to be in the video at the end of the study	Be in Video
How satisfied participants are with themselves	Satisfied with Self
The extent to which participants feel like a failure	Feel Failure

Participants in the feedback conditions also indicated the extent to which they found the feedback supportive. The affect variable from the previous studies averaging responses to the items worried, nervous and ill at ease, difficulty concentrating and anxious formed a reliable scale at time phase 1 ($\alpha = .84$) and time phase 2 ($\alpha = .92$). The somatic variable that averaged responses to the items face flushed, discomfort in the stomach and heart pounding also formed a reliable scale at

time phase 1 (α = .76) and time phase 2 (α = .86). The participants' mean affect and

somatic scores and their associated standard deviations in the eight independent

conditions are presented in Table 6.2.

The appropriate reverse coding of measures to assess personal self-esteem was

performed and the two questions were collapsed to form a new variable, personal self-

esteem (PSE). Consistent with the previous studies, PSE formed a reliable scale (α =

.64). The participants' mean responses to the above manipulation checks and their

associated standard deviations in the eight independent conditions are presented in

Table 6.3 and 6.4.

Table 6.2

Means and Standard Deviations of the Affect and Somatic variables as a Function of
Self-Definition, Threat and Feedback

Self-Definition	Threat	Feedback	N	Affect 1 M(S.D.)	Affect 2 M(S.D.)	Somatic 1 M(S.D.)	Somatic 2 M(S.D.)
Personal Identity	Individual	Yes	9	5.03(1.22)	3.79(1.65)	3.89(1.37)	3.22(1.81)
		No	8	3.91(1.96)	3.88(2.07)	3.42(1.95)	3.13(1.94)
	Group	Yes	10	4.73(2.23)	3.30(2.03)	3.93(1.72)	3.07(1.63)
		No	10	4.73(1.70)	4.13(1.73)	3.47(1.60)	2.90(1.93)
Social Identity	Individual	Yes	11	4.86(1.16)	3.77(1.55)	3.97(1.24)	2.82(0.87)
		No	11	4.02(1.56)	3.45(1.33)	3.06(1.14)	2.58(0.86)
	Group	Yes	10	4.55(1.40)	3.98(1.92)	3.50(1.61)	3.03(1.73)
		No	9	4.75(0.56)	4.33(0.75)	3.37(1.69)	3.19(1.22)

Table 6.3

Means and Standard Deviations of the Manipulation Checks as a Function of Self-Definition and Threat for the No Feedback Conditions

Self-Definition:	Personal Identity		Social Identity	
Threat:	Individual (N=8)	Group (N=10)	Individual (N=11)	Group (N=9)
Common with Other Participants	4.63(1.41)	3.90(2.03)	4.55(1.51)	4.00(1.66)
Performance of Others				
Important	3.88(2.17)	4.00(1.70)	3.73(1.62)	3.00(2.24)
Identify	4.00(1.31)	3.50(1.43)	3.82(0.98)	3.33(2.00)
Cope with Tasks	3.00(1.85)	3.40(0.84)	3.00(1.34)	3.44(1.51)
General Stress	4.00(1.31)	4.10(1.20)	3.64(1.69)	3.22(1.20)
Attention to Tasks	5.75(1.39)	4.80(2.04)	5.36(1.12)	5.33(1.23)
Be in Video	2.38(1.41)	1.80(1.32)	1.46(0.69)	2.33(1.58)
Personal Self-Esteem	4.69(1.75)	4.80(1.36)	4.86(2.06)	5.33(1.30)

Table 6.4

Means and Standard Deviations of the Manipulation Checks as a Function of Self-Definition and Threat for the Feedback Conditions

Self-Definition:	Personal Identity		Social Identity	
Threat:	Individual (N=9)	Group (N=10)	Individual (N=11)	Group (N=10)
Common with Other Participants	2.89(1.36)	4.50(1.84)	4.37(1.35)	4.40(2.12)
Performance of Others Important	3.11((1.83)	3.60(2.55)	3.82(1.83)	4.30(1.95)
Identify	3.67(1.12)	4.10(1.52)	4.64(0.92)	5.10(1.52)
Feedback Supportive	3.22((2.11)	2.20(1.48)	3.09(2.07)	3.60(1.35)
Cope with Tasks	3.56(1.94)	3.60(2.01)	3.09(0.94)	3.00(1.49)
General Stress	3.89(1.27)	4.20(1.48)	4.09(0.94)	3.30(1.70)
Attention to Tasks	5.22(1.30)	5.10(1.66)	5.18(0.98)	5.50(1.18)
Be in Video	2.22(1.48)	2.10(1.79)	1.82(1.66)	1.90(1.29)
Personal Self-Esteem	5.07(1.49)	5.35(1.40)	5.18(1.10)	4.70(1.48)

6.4   Check for the manipulation of identity-relevant and identity-irrelevant threat

Table 6.5 shows participants' mean Affect and Somatic scores and their associated standard deviations in the self-definition and threat conditions prior to the manipulation of feedback.

Table 6.5

Means and Standard Deviations of the Affect and Somatic variables at Study Phase 1 as a Function of Self-Definition and Threat

Self-Definition	Threat	N	Affect $\underline{M}$(S.D.)	Somatic $\underline{M}$(S.D.)
Personal Identity	Individual	17	4.50(1.61)	3.67(1.63)
	Group	20	4.73(1.94)	3.70(1.64)
Social Identity	Individual	22	4.44(1.41)	3.51(1.26)
	Group	19	4.65(1.07)	3.44(1.60)

As can be seen in Table 6.5, looking at the affect variable there was little difference between the experimental conditions self-reported level of affective symptoms of stress. All of the experimental conditions reported moderate levels of stress. Looking at the somatic variable there is also little difference, with all of the conditions reporting mild levels of somatic symptoms of stress.

To assess the extent to which the threat instructions and arithmetic tasks varied as a function of their perceived relevance to the personal identity and social identity conditions, the affect and somatic variables at study phase 1 were subjected to a 2(Self-Definition) × 2(Threat) analysis of variance (Table 6.6). No significant effects

emerged for either the affect or somatic variable. This finding did not therefore provide support for the predicted interaction between self-definition and threat (affect; F (1,74) = 0.001, ns; Eta-Sqd = .00; power = .03 and somatic; F (1,74) = 0.025, ns; Eta-Sqd = .00; power = .04). All of the participants reported moderate levels of affective symptoms of stress and in addition, all of the participants reported mild levels of somatic symptoms of stress. This suggests that the manipulation of identity-irrelevant threat (at the participants' personal identity and social identity) was unsuccessful. These instructions caused moderate levels of perceived stress in the conditions were threat was intended to be irrelevant to the participants' salient identity. As a result, the threat variable was dropped from the remainder of the analyses. The following general hypotheses still remained; (a) the stress response should lower across the two sets of arithmetic tasks only when participants receive feedback from someone who shares the same social identity – an ingroup member and (b) the stress response should not lower when participants receive no feedback.

6.5   Measures of the stress response

Table 6.7 shows participants' mean Affect and Somatic variable scores and their associated standard deviations in the self-definition and feedback conditions at study phase time 1 and time 2.

Table 6.7

Means and Standard Deviations of the Affect and Somatic variables as a Function of Self-Definition, Feedback and Study Phase

Self-Definition	Feedback	N	Affect 1 M(S.D.)	Affect 2 M(S.D.)	Somatic 1 M(S.D.)	Somatic 2 M(S.D.)
Personal Identity	Yes	19	4.87(1.79)	3.53(1.82)	3.91(1.52)	3.14(1.67)
	No	18	4.36(1.81)	4.01(1.83)	3.44(1.71)	3.00(1.88)
Social Identity	Yes	21	4.71(1.26)	3.87(1.69)	3.75(1.41)	2.92(1.32)
	No	20	4.35(1.24)	3.85(1.17)	3.20(1.38)	2.85(1.05)

Looking at the affect variable, Table 6.7 shows that the stress response lowered more for participants in the personal identity feedback (Ms 4.87 to 3.53) and social identity feedback (Ms 4.71 to 3.87) conditions than for participants in the personal identity no feedback (Ms 4.36 to 4.01) and social identity no feedback conditions (Ms 4.35 to 3.85). A similar pattern can also be seen for the somatic variable. The stress response lowered more for participants in the personal identity feedback and social identity feedback conditions than for participants in the personal identity no feedback and social identity no feedback conditions.

6.5.1   Multivariate effects

Using affect and somatic scores at both study phase time 1 and time 2 as the dependent variables, there was a significant multivariate main effect for study phase (F (2,73) = 17.85, p<.001) and a significant feedback by study phase interaction (F (2,73) = 3.34, p<.05). No other effects emerged from the analysis.

6.5.2   Univariate follow-up tests

The affect and somatic variables were subjected to a 2(Self-Definition) ×

2(Feedback) × 2(Study Phase) analysis of variance with repeated measures on the last

factor (Table 6.8). For the affect variables, there was a main effect for study phase,

with perceived affective symptoms of stress being lower at study phase time 2

($\underline{M}$s 4.58, 3.81, respectively; $\underline{F}$ (1,74) = 34.72, $\underline{p}$<.001; Eta-Sqd = .32; power = 1.0).

This effect was qualified by a two-way interaction between feedback and study phase

($\underline{F}$ (1,74) = 6.77, $\underline{p}$<.01; Eta-Sqd = .08; power = .73), suggesting that the lowering of

the stress response over time differed between the feedback conditions (Refer to

Figure 6.4). For the somatic variables, there was a main effect for study phase, with

perceived somatic symptoms of stress being lower at study phase time 2 ($\underline{M}$s 3.57,

2.97, respectively; $\underline{F}$ (1,74) = 20.93, $\underline{p}$<.001; Eta-Sqd = .22; power = .99). No other

effects emerged for this analysis.
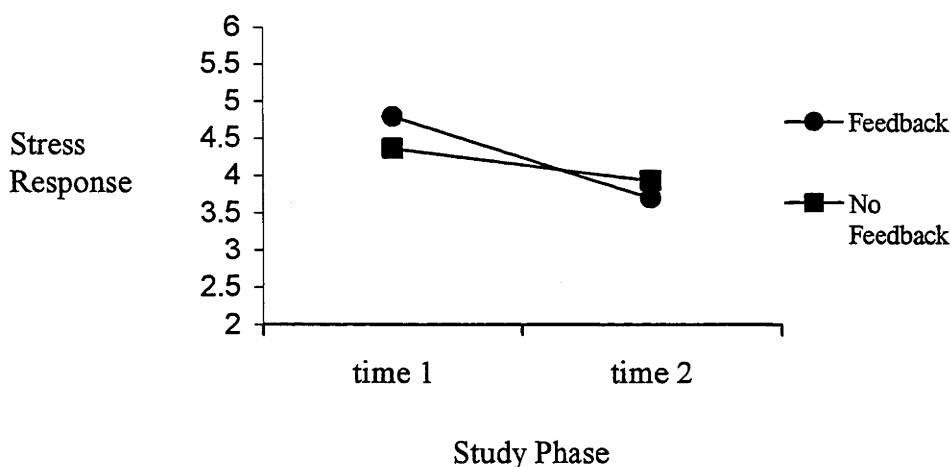
Figure 6.4: Mean affective response as a function of study phase and feedback

Tests of the simple effects were conducted to break down the interaction between self-definition and feedback for the affect variable. The results indicated that the affective stress response lowered significantly over the two sets of arithmetic tasks for participants in the personal identity feedback condition (t (18) = 5.05, $p<.001$; Cohen's d = 1.15; power = .99). This finding did not support the prediction where feedback was not intended to be beneficial in the personal identity condition. However, in line with the predictions, the affective stress response did not lower significantly over the two sets of tasks for participants in the personal identity no feedback condition (t (17) = 1.42, ns; Cohen's d = .33; power = .27). This finding suggests that practice did not result in a lowering of the stress response across the two sets of tasks because of a practice effect. As predicted, the affective stress response lowered significantly across the two sets of arithmetic tasks for participants in the social identity feedback condition (t (20) = 2.72, $p<.01$; Cohen's d = .59; power = .73). Finally, the affective stress response also lowered for participants in the social identity no feedback condition (t (19) = 2.76, $p<.01$; Cohen's d = .62; power = .74) and thus did not provide support for the prediction that the stress response would not lower in this condition.

Table 6.8

Univariate Follow-up Test of Self-Definition, Feedback and Study Phase for the Affect and Somatic variables

IV	DV	$\underline{F}$	df	$\underline{p}$
Self-Definition	Affect	0.00	(1/74)	ns
	Somatic	0.38	(1/74)	ns
Feedback	Affect	0.09	(1/74)	ns
	Somatic	0.95	(1/74)	ns
Study Phase	Affect	34.72	(1/74)	.001
	Somatic	20.93	(1/74)	.001
Self-Definition × Study Phase	Affect	0.45	(1/74)	ns
	Somatic	0.01	(1/74)	ns
Feedback × Study Phase	Affect	6.77	(1/74)	.01
	Somatic	2.36	(1/74)	ns
Self-Definition × Feedback	Affect	0.07	(1/74)	ns
	Somatic	0.00	(1/74)	ns
Self-Definition × Feedback × Study Phase	Affect	1.59	(1/74)	ns
	Somatic	0.08	(1/74)	ns

6.6   Measures of performance

The number of correct responses to the addition and subtraction exercises were found to be significantly correlated at time 1 and time 2 (time 1 $\underline{r}$ = .73, $\underline{p}$<.01; time 2 $\underline{r}$ = .64, $\underline{p}$<.01). This suggests some consistency in the number of correct responses to the addition and subtraction exercises both at study phase time 1 and time 2. As in the previous experiments, the number of correct responses to the

addition and subtraction exercises were added together to form a performance score at time 1 (Perform 1) and a performance score at time 2 (Perform 2).

Then, the performance score at time 1 and the performance score at time 2 were subjected to a 2(Self-Definition) × 2(Feedback) × 2(Study Phase) analysis of variance with repeated measures on the last factor. Scores differed significantly as a function of study phase, with performance improving from time 1 to time 2 ($\underline{M}$s 12.53, 15.22, respectively; $\underline{F}$ (1,74) = 36.83 $\underline{p}$<.001). No other significant effects emerged from the analysis. Relevant means and standard deviations are presented in Table 6.9.

Table 6.9

<u>Means and Standard Deviations of the Performance Scores as a Function of Self-Definition, Feedback and Study Phase</u>

Self-Definition	Feedback	N	Perform 1 $\underline{M}$(S.D.)	Perform 2 $\underline{M}$(S.D.)
Personal Identity	Yes	19	12.56(8.42)	15.79(8.41)
	No	18	10.39(8.52)	13.72(9.18)
Social Identity	Yes	21	11.52(5.60)	15.00(5.57)
	No	20	15.50(7.90)	16.45(8.20)

6.7   Manipulation checks

The responses to the eight manipulation checks were analysed by means of 2(Self-Definition) × 2(Feedback) analysis of variance (Refer to Appendix D). The only effect to emerge from any of the analyses was a feedback effect for the identify variable, with identification being higher in the feedback than no feedback conditions (Ms 4.37, 3.66, respectively; F (1,74) = 5.37, p<.05). There was a trend for this effect to be qualified by a two-way interaction between feedback and self-definition, with the participants' level of identification being higher in the social identity than personal identity condition

(F (1,74) = 3.09, p = .08), however this result was not significant.

Table 6.10 shows participants' mean responses to the manipulation checks and their associated standard deviations in the self-definition and feedback conditions.

Table 6.10

Means and Standard Deviations of the Manipulation Checks as a Function of Self-Definition and Feedback

Self-Definition:	Personal Identity		Social Identity	
Feedback:	Feedback (N=19)	No feedback (N=18)	Feedback (N=21)	No feedback (N=20)
Common with Other Participants	3.74(1.79)	4.22(1.77)	4.33(1.71)	4.30(1.56)
Performance of Others Important	3.37(2.19)	3.94(1.86)	4.05(1.86)	3.40(1.90)
Identify	3.90(1.33)	3.72(1.36)	4.86(1.24)	3.60(1.50)
Cope with Tasks	3.58(1.92)	3.22(1.35)	3.05(1.20)	3.20(1.40)
General Stress	4.05(1.35)	4.06(1.21)	3.71(1.38)	3.45(1.47)
Attention to Tasks	5.16(1.46)	5.22(1.80)	5.33(1.07)	5.35(1.14)
Be in Video	2.16(1.61)	2.06(1.35)	1.86(1.46)	1.85(1.23)
Personal Self-Esteem	5.21(1.41)	4.75(1.50)	4.95(1.28)	5.08(1.73)

As can be seen in Table 6.10, there was little variation in the participants' responses on the following variables; (a) Common with Other Participants, (b) Performance of Others Important, (c) Cope with Tasks, (d) General Stress, (e) Study Interesting, (f) Attention to Tasks, (g) Be in Video, and (h) Personal Self-Esteem.

In addition, all participants scored in the moderate range regarding their perceptions of having something in common with other participants, were moderately concerned about the performance of others, devoted a moderate to high amount of attention to the study's instructions, found the study moderately interesting, did not

cope relatively well with the tasks, reported a moderate amount of general stress, did not want to be in the video and reported moderate levels of personal self-esteem. For the identify variable, those in the social identity feedback condition revealed moderate to high identification with other students in the room and the personal identity feedback, personal identity no feedback and social identity no feedback conditions identified moderately with other students

The feedback supportive variable was subjected to a between group t-test. There was no difference between the personal identity and social identity conditions t (38) = 1.15, ns, with all participants finding the feedback relatively unsupportive (personal identity feedback $\underline{M}$ = 2.68 vs. social identity feedback $\underline{M}$ = 3.33).

DISCUSSION

The first important point to note is that all of the participants appraised the situation as moderately stressful at study phase time 1. That is, not only did the participants in conditions where the threat or stressor was intended to be relevant find the situation stressful, but so did the participants in conditions where the stressor was intended to be irrelevant to their salient personal or social identity. Thus the predicted interaction between the self-definition and threat did not materialise. It can be inferred from the findings that the manipulation of threat as being irrelevant or relevant to an individual's self-concept (in this particular context) was unsuccessful. Instead threat, was equally (and moderately) relevant across all experimental conditions.

One possible explanation for this finding is that in all of the experimental conditions there was a chance that individuals or groups may have had to participate in a training video if they performed poorly in comparison to others. Therefore, under these circumstances, it is likely that the stressor was relevant in all conditions irrespective of whether it was intended to be irrelevant to the participants' personal or social identity because of this increased threat to what was already a potentially stressful situation. Moreover, all of the participants indicated that they did not want to be on the training video. On the basis of these arguments the threat variable was dropped from any of the further analyses.

The second important point to note, looking at the feedback conditions, is that the stress response (in particular the affective component) lowered from the first set of arithmetic exercises to the second in both the personal identity and social identity conditions. It was anticipated that the stress response would only lower in the social identity condition where the participants identified with the provider, perceived him or her as an ingroup member and internalised that group membership as an aspect of their self-concept. Such a result would demonstrate the benefits of a shared social identification in relation to the provision and receipt of informational support. There are a few tentative explanations for the lowering of stress in the personal identity feedback condition. First, in this condition, the participants had the least amount of control over the testing situation in comparison to the other experimental conditions. This rests upon the following assumptions: (a) the participants received feedback from two other individuals who had indicated that they had found the tasks easy and thought they had performed in the top 25%, increasing the likelihood of being on the video if the participant didn't cope with the task, (b) the participants indicated they had not coped relatively well with the arithmetic tasks, and (c) looking at the other

experimental conditions, the participants in the personal identity no feedback condition did not have to worry about receiving feedback that was performance-oriented and participants in the social identity conditions had the benefit of at least performing a stressful task in a group setting. Hence, given that participants in the personal identity feedback condition had limited control over the situation, it is plausible that they may have employed two of the eight discrete coping functions highlighted by Folkman et al. (1986) to manage psychological stress. The participants may have employed either a self-controlling coping strategy by not endorsing their true stress response or alternatively, they may have distanced themselves from the testing situation. The above emotion-focused coping strategies have been specified in the literature to be of particular relevance to situations that are not amenable to change as they offer the potential of at least regulating the emotions associated with these situations (Hobfoll & Vaux, 1993). However, none of the manipulation checks assessed the possibility of these coping strategies and therefore no corroborating evidence can be provided.

The second, and possibly more plausible explanation for the observed finding in the personal identity feedback condition is that there was a class effect. The feedback in this condition may have reinforced to the participants that they were in the same situation as two fellow classmates. Along these lines, the participants may have defined themselves as members of the same social category (i.e., year 11 English students) and subjectively identified with the two students (ingroup members) and shared some emotional involvement in this common definition of themselves (Tajfel & Turner, 1986). Further, in this condition, the threat instructions indicated that the participants may participate in a training video with other individuals (students from their class who are ingroup members) to be shown to students from different schools

(outgroup members). It is likely, that in order to maintain positive self-esteem, in particular a positive social identity, and to differentiate themselves from other outgroups (i.e., the students from different schools) the participants may have lowered their stress response to achieve ingroup superiority (Tajfel et al., 1971). The manipulation check for identification indicated that all of the participants identified moderately with other students and, importantly, there was also a main effect for feedback, with identification being generally higher in the feedback conditions.

The third important point to note, looking at the no feedback conditions, is that the stress response (the affective component) did not lower from the first set of arithmetic exercises to the second set for participants in the personal identity condition but lowered for participants in the social identity condition. This result only partially supported the hypothesis that the stress response should not lower when the participants receive no feedback. One possible explanation for the lowering of the stress response in the social identity condition is that merely performing a stressful task as a group (as opposed to performing the task as individuals) can lead to a reduction of stress. In this condition, participants performed the task sitting together as a group and they may have provided each other with implicit forms of social support. For example, they may have provided each other with support via facial expressions or by just knowing that they were not facing the potential stressful situation on their own. Here, the group may be seen to have a beneficial effect on the individual's self-concept, by influencing the cognitive appraisal and the accompanying stress reaction.

The fact that the stress response did not lower in the personal identity no feedback condition provides some support for the assumption that the stress response did not lower due to a practice effect. In addition, further support for this conclusion comes from an examination of the participants' performance scores that indicated an improvement in all of the participants' performance during the second set of arithmetic tasks. In spite of this, though, there was no difference in the stress response for participants in the personal identity no feedback condition. Further, there was no difference between the experimental conditions in participants' interest in the study or attention to tasks that may have influenced performance. Nonetheless, even if some of the above findings were unexpected, the results provide unequivocal support for the view that the stress response did not lower in the experimental conditions as a result of a practice effect.

At a theoretical level, the results of this experiment (and the results of the two experiments in the previous chapter) place an important caveat on Lazarus and Folkman's (1984) transactional account of the stress process. Instead of asserting that a situation will be appraised as stressful when it is relevant and meaningful to an individual's wellbeing, it appears that a more parsimonious account of appraisal should refer to the person's self-concept (which is comprised of both personal and social identity). At present, the stress literature considers the impact of a stressor from what is largely an individualistic perspective. Little consideration has been given to the possibility that the cognitive appraisal process can also be influenced by the social context of salient group memberships. Even though this experiment failed to manipulate identity-irrelevant stressors successfully, it still demonstrated the effects of identity-relevant stressors with participants in both the personal identity and social identity conditions being stressed at study phase time 1. In this vein, as predicted by

self-categorization theory, it can be seen that at different times we categorize ourselves as unique individuals and yet, at other times as members of social groups both of which are valid expressions of self and can impact upon how we appraise a situation (Turner, 1982, 1987, 1991; Turner et al., 1987). Thus, an important contribution of this study, notwithstanding the design issues that will be discussed shortly, is that a stressor can be perceived as relevant to either an individual's personal identity or social identity. Moreover, this process is dependent upon the context and how the self is defined in that context.

From an experimental design viewpoint, this experiment highlights the difficult and complex task of integrating Lazarus and Folkman's (1984) transactional model of stress and self-categorization theory (Turner, 1987, 1991; Turner et al., 1987). Both models provide an account of two distinct and very different psychological processes and the mechanisms behind this integration are yet to be clearly specified. The main design issue in this experiment is that the feedback was performance-oriented as opposed to being purely supportive. Therefore, the performative nature of the feedback may have introduced a comparison of performance between individuals or groups that made the testing situation competitive and this may have confounded the threat manipulation. Here, then, not only did the situation have the potential to cause stress but it was also a competitive situation. Moreover, the feedback was intended to be positive in the social identity condition (where participants were led to believe that two other group members were doing well, thus lowering the potential of being on selected for the video) but not intended to be positive in the personal identity condition (particularly if the participants were performing badly). Amongst other things, it is difficult to compare the benefits of support between conditions if they are intended to be different and it is also likely that

the participants in the social identity condition may have been demoralised if their performance was letting their group down. In hindsight, it would be more valuable for further research to keep the nature of the feedback consistent across experimental conditions in order to assess the benefits of a shared social identification in the provision and receipt of informational support. Moreover, the informational support should actually contain information that helps to define, increase the understanding of, and help the participants cope with the arithmetic tasks, as opposed to providing performance indicators (Cohen & Wills, 1985).

The current theoretical framework would benefit from a further study where the feedback is similar to the previous experiments. Consistent with the above line of analysis, the manipulation check for feedback indicated that the participants did not find the feedback supportive. Finally, the complex design of the current experiment should also be avoided in another study by not attempting to manipulate identity-relevant and identity-irrelevant threat at this stage.

Taken together, this experiment represents a further attempt to clarify the role of social identity in the appraisal of stressful situations. However, it is important to take a step back and reflect upon the theoretical and methodological lessons learned thus far. Even though this experiment has not demonstrated that the impact of a stressor varies as a function of its perceived relevance and importance to self (in regard to identity-relevant and identity-irrelevant stressors), it does suggest that primary appraisal entails the relevance of an encounter to one's personal identity and social identity. Clearly, though, further research is warranted and the possible paths that this may take will be outlined in the final chapter. The following chapter will also consider the broader implications, the current status of our theoretical model and the value of the social identity approach and social influence to the study of the stress process as a whole.

CHAPTER SEVEN

General Discussion

The overall pattern of results from this thesis suggests that any integration of Lazarus and Folkman's (1984) transactional model of stress and self-categorization principles (Turner, 1982, 1987, 1991; Turner et al., 1997) will be a far more complex, varied and intellectually challenging task than was initially anticipated. Three innovative experiments were designed to explore the potential of social identity salience to contribute to two different stages of the stress process. The first experiment set out to examine the benefits of a shared social identification for the provision and receipt of informational support. In short, some tentative support for the *a priori* predictions was provided, with the stress response lowering in the social identity condition but this same effect was not observed in the personal identity condition. However, low statistical power did not allow for the observation of qualifying multivariate effects.

The second experiment attempted to replicate the findings of the first experiment but did redress the low statistical power by increasing the sample size and improving the manipulation of social identity salience. Here the results showed that the benefits of informational support were not dependent upon the appraiser and provider sharing a salient social identity. That is, the stress response lowered in both the social identity and personal identity conditions. Nevertheless, there was direct support for the success of social identity salience and a trend suggesting that the participants found the feedback more supportive when they shared a salient social identity with the provider. The observed pattern of results in this experiment was

attributed to the poor ecological validity and lack of personal significance and relevance of performance on the arithmetic tasks.

The final experiment was designed to (a) control for the possibility of any practice effect, (b) improve the ecological validity of performing the arithmetic tasks by strengthening the threat manipulation and providing performance oriented feedback and finally, (c) test the integration of self-categorization principles at two integral stages of the stress process. Specifically, this experiment examined how the impact of a stressor varies as a function of its perceived relevance and importance to self. In addition, following the social influence tradition of research (and the aims of the previous two experiments), this experiment attempted to highlight the benefits of a shared social identity in the receipt of informational support. Again though, the results of this experiment provided only mixed support for the current theoretical framework. Having said that there was some evidence to suggest that the lowering of the stress response was not due to a practice effect. However, the role of identity-relevant and identity-irrelevant threat was not observed. Further, the lowering of the stress response was not restricted to the social identity feedback condition. Importantly though, feedback *per se* did increase social identification and the stress response lowered in conditions of feedback.

Having provided a brief recapitulation of the three experiments presented in the empirical chapters, it is now essential to consider the status of the current theoretical framework.

7.1   The status of the theoretical model

One interpretation of the overall findings of this thesis is that any

amalgamation of Lazarus and Folkman's (1984) transactional model of stress and

self-categorization theory is ill-conceived and not feasible. To elaborate this

argument, these two theoretical models provide accounts of very different and distinct

psychological processes. Moreover, this thesis has sought to create some synthesis

among domains that typically have not been considered together. In particular, self-

categorization theory of group behaviour and its explanation of social influence

considers the processes through which people shape and change the behaviour and

attitudes of others. In part, the theory postulates that we are more likely to be

persuaded by others and accept them as legitimate sources of influence, capable of

validating our perceptions, attitudes and behaviours when we categorize them as

similar to self (ingroup members). Thus, as different social identities become salient,

the information to which we are exposed and how the information is construed will

vary (McGarty et al., 1994; Turner, 1991). Although it may examine the impact of

the group on the individual it is essentially a theory of group behaviour.

On the other hand, the transactional model of stress provides an account of a

clinical paradigm and it is essentially a theory of individual differences. The

centrepiece of this model is the cognitive process of appraisal. According to Lazarus

and Folkman's theoretical framework, threat appraisals arise when an individual

anticipates that he or she will not be able to cope with the stressful event and further,

failure to met any demand is perceived by the individual as personally meaningful

(Folkman et al., 1991; Lazarus, 1966). In the literature, the buffering effect model

asserts that social support may intervene in the cognitive appraisal process by

alleviating or ameliorating the threat appraisal and accompanying negative emotional

reactions. The current theoretical framework postulates that it is here where self-categorization principles may be relevant. Specifically, informational support provided by someone we categorize as similar to self may intervene in the stress process by validating and clarifying our experience and also assisting in providing new interpretations and suggestions for coping. Although this is certainly an acceptable analysis, some theorists may question how well self-categorization principles and the stress process fit theoretically. In particular, the cognitive processes involved in social influence may impact upon the cognitive appraisal of stress. However, this does not necessarily mean that these processes will also influence emotional reactions. The relationship between cognitive appraisal and emotions may be far more complex and intricate than our initial conceptualisation. There may be numerous moderating and mediating variables that influence the relationship between cognitive appraisal and emotional reaction, which the current research has not adequately taken into account. In other words, there may be certain intervening variables attached to the paradigm that this research has not examined or taken account of.

Lazarus (1991a, 1991b, 1999) provides a detailed analysis of the relationship between cognitive appraisal and emotion and the variables that may influence this relationship. Essentially, he argues that the direction of the relationship between cognition and emotion goes both ways. "Although emotion is always a response to meaning, it can also influence subsequent thoughts and emotions" (Lazarus, 1991b, p. 824). Lazarus (1991a, 1991b, 1993) highlights six potential key decision components of appraisal: three primary and three secondary that may impact upon emotion. The primary appraisal components have to do with the motivational aspects of an encounter and involve the degree of involvement one has in the outcome of the

encounter. The three primary appraisals are goal relevance, goal congruence or incongruence and goal content. Briefly, goal relevance has to do with what if anything is at stake and whether there is potential for any emotion in the encounter. The importance or strength of a goal influences the intensity of an emotion. Goal congruence or incongruence refers to whether the situation is appraised as harmful or beneficial. This conflict-centred principle determines whether the resulting emotion will be positive or negative. Finally goal content and commitment entails the type of goal to which the individual is committed. The types of goal content Lazarus (1993) lists include: (a) self and social esteem, (b) moral values, (c) preservation or enhancement of one's ego identity, (d) meanings and ideas, (e) life goals, and (f) persons and their wellbeing.

The three secondary appraisal decisions that influence emotion are blame or credit and whether it is directed at oneself or another, coping potential, and future expectations. In short, blame or credit concerns the attribution of accountability or responsibility for harm. Coping potential has to do with whether and in what way we can influence the person-environment relationship for the better. It is here that personal resources have an essential role to play. Personal resources may include intelligence, social skills, education, supportive family and friends, health and so on (Eckenrode, 1991; Folkman et al., 1991; Lazarus, 1999; Moos & Schaefer, 1993). Finally, future expectations consist of what the individual thinks will happen in the way of change, for example, whether things will work out favourably or get worse for any reason. Specifically, our beliefs about ourself and the world shape our expectations about what is likely to happen in an encounter and these beliefs are heavily influenced by sociocultural variables and individual development (Lazarus, 1999).

In addition to the above variables, coping is also an integral part of the process of emotional arousal. There are a range of individual cognitions and behaviours that represent coping functions. Folkman et al. (1986) conclude that coping to manage or alter the problem causing distress and the regulation of emotional responses to the problem fall into eight discrete categories. In this particular instance, an assessment of emotion-focused coping strategies such as, escape-avoidance, self-controlling, distancing and positive reappraisal may shed more light on the relationship between appraisal, coping and emotion. In summary, the relationship between appraisal, emotion and coping is both complex and intricate and the assessment of some of these possible moderating and mediating factors would serve to enhance the current theoretical framework.

Alternatively, the present findings may be consistent with Schachter's (1959) application of social comparison theory to the domain of threat and emotion. From this standpoint, the lowering of the stress response in the personal identity and social identity conditions (in Experiments 2 and 3) provides empirical support for the direct role of social comparison processes in ameliorating stress appraisal and reaction. That is, the uncertainty generated by the possible threatening and novel situation may have increased the participants' motivation to affiliate with one another. Consistent with Schachter's (1959) rationale, people affiliate with similarly-threatened others because such individuals are thought to provide the best means of evaluating the intensity or appropriateness of their emotional state (Gump & Kulik, 1997). Furthermore, by receiving informational feedback or simply observing others, the participants may have been able to test out their initial interpretation of the situation and/or plans for dealing with the mental arithmetic tasks. Here the individual is

thought to gain certainty about a threatening situation through comparison with those around them.

In addition, this analysis (after Festinger, 1954) is predicated on the premise that social influence in its restricted form of informational influence is what impacts on the appraisal process. Thus, informational support (regardless of the source) is believed to reduce stress simply by providing an individual with relevant facts. In other words, the informational support provided in the personal identity and social identity conditions may have been accepted as evidence about reality and the participants may have only influenced one another by virtue of the (asocial) valid information they possessed. In summary, the impact of social support in the appraisal of stressful situations may depend simply on the informational content of stress-related signs and messages (an individual cognitive process). Finally, the social comparison mode of influence may have overridden any self-categorization processes of social influence in this particular context.

There is however, another interpretation of the overall findings. In fact, although there was only some tentative support for the hypotheses, the current theoretical integration of Lazarus and Folkman's (1984) cognitive appraisal of stress and self-categorization principles should still be accorded merit. Along these lines, it is likely that social identity salience can help further our understanding of why a situation is appraised as relevant or irrelevant to an individual. Here, then, primary appraisal reflects the personal significance of an encounter to the person's self-concept which may be comprised of a personal identity or social identities. That is, a stressor will vary as a function of its perceived relevance and importance to an individual's personal identity or social identity. Furthermore, self-categorization principles are likely to provide a fuller account of the factors that determine the

provision, receipt and benefits of informational support. Specifically, informational support should influence the cognitive appraisal process and accompanying emotional reaction, when the source and the appraiser share the same social identity. In essence, informational support is socially mediated and therefore the value of the support depends upon the message content in interaction with the message source.

This is certainly an acceptable theoretical framework but if any progress is to be achieved in clearly understanding this integration, the problems encountered in the current research need to be examined. Further, there are a number of methodological and measurement issues that may have contributed to the outcomes of this study that need to be addressed if we are to continue to enhance validity in theory development. At this point, it is essential to depend on continued research and further investigation to improve our understanding of the above theoretical analysis. Some of the measurement and methodological lessons learned from the current research that may assist further empirical inquiry will now be reviewed.

7.1.1 Measurement of the stress process

There are essentially two measurement considerations in the current research. First, the selection of the self-report measures to assess the affective and somatic symptoms of the stress response may not have been the most appropriate. The stress process is dynamic, its characteristics can change over time and reappraisal occurs continually throughout the person's interaction with the environment. Thus, assessing the stress response at only two intervals during the experimental paradigm may not have provided an adequate reflection of the person's stress reaction. In addition, the lack of consistent findings in regard to the participants' assessment of their somatic symptoms tends to highlight the subjective nature of the chosen measures.

In summary, the subjective nature of the current measures and their inability to capture the evolving stress equation demonstrates the need for future research to rethink the choice of stress measurement. It would appear fruitful to include a more accurate indication of the physiological stress reactions associated with cognitive appraisal. Numerous experiments have demonstrated that cognitive appraisal affects physiological and psychological responses to stressors. Importantly, the continuous recording of skin conductance, pulse rate time and heart rate throughout the entire experimental paradigm would need to provide a clearer indication of the physiological fluctuations experienced by participants and the relationship between appraisal and reappraisal (Tomaka et al., 1993). Finally, the inclusion of questions to assess the participants' primary appraisal by asking them how stressful or threatening they expect to find the upcoming arithmetic task would provide an indication of how involving and meaningful the situation is to them in the first place (Monroe & Kelley, 1995; Tomaka et al., 1993).

Second, the measures assessing the stress response were introspective. That is, the questions asked participants to indicate their agreement with statements that assessed how they as individuals felt during the arithmetic tasks. For example, one question stated 'I was more worried than I normally am', and another question stated 'my heart was pounding more than it normally does'. The participants were asked to reflect upon their own feelings as unique individuals. Therefore, it is highly probable that in the social identity salience conditions, self-perception changed from the participants defining themselves as group members to defining themselves as individuals (Turner, 1982, 1984; Turner et al., 1987). It is essential to recall that the way in which people categorize themselves is highly variable, fluid and context dependent. Upon reflection, the measures that assessed the stress response may have

impacted on the process of depersonalization in the social identity conditions. To elaborate this argument, the manipulation of social identity salience attempted to change the level and content of the participants' self-perception. If the manipulation of social identity salience was successful (and there is evidence to suggest that this was the case in Experiment 2), participants would have categorized themselves more in terms of interchangeable representatives of some shared social category membership and less in terms of unique attributes and individual differences (Levine & Reicher, 1996; Turner & Haslam, 2001). However, the stress measures assessed for unique and individual differences and therefore, there may have been a shift in self-perception from seeing oneself as a member of a group to an individual person (i.e., 'we' to 'I'). Alternative measures should avoid introspection and avoid asking participants to evaluate their own feelings and stress response. More appropriate measures could be the aforementioned recording of skin conductance, pulse rate and heart rate. In addition, participants may complete these measures as a group and assess how they feel as a member of a group. For example, a question may state, "we were more worried than normal". In essence, these measures would avoid the individual's introspective evaluation of their feelings and likely shift in self-perception in the social identity condition.

7.1.2 Methodological issues

As well as measurement issues, there are a number of design issues that need to be addressed. Importantly, the first methodological consideration is that there may simply be limits to the application of the social psychological experimental paradigm. Specifically, the experimental paradigm used to manipulate social identity salience in social psychological research may not be the most suitable procedure to adopt when

examining the relationship between self-categorization principles and the stress process. In other words, although extensive research has demonstrated the validity of using similar experimental procedures for demonstrating self-categorization principles and self-categorization principles in social influence (Mackie et al., 1990; McGarty et al., 1994; Oakes et al., 1991) these procedures may not be suited to the examination of the stress process.

Second, the ecological validity of the current research paradigm was low. Poor performance on arithmetic tasks in an experimental constructed situation may not have been of any personal significance or relevance to the participants. At the most fundamental level, the sample may have had no interest in the long-term effects of its performance or any interest in the experimenter's evaluation. Importantly, the participants' self-reported stress response (in all of the experiments conducted) was only ever moderate. Changing the nature of the stressor or selecting participants with moderate to high trait anxiety and poor coping strategies may have increased the severity of threat appraisal.

Alternatively, a more realistic setting and the selection of pre-existing work groups might possibly be a better way to examine the theoretical framework. Specifically, in this instance the stress response would not be directly manipulated and there is the added bonus of ecological validity. In particular, the effect of high and low identification with coworkers on the provision and receipt of informational support could be examined within a workplace context. It is likely, that if individuals internalise their workplace social category as an aspect of their self-concept and subjectively identify with the ingroup, they would benefit from the provision of informational support. On the other hand, if individuals fail to identify with their coworkers, the provision of informational support would play a negligible role in

ameliorating workplace stress related-signs and messages. The core of this analysis is similar to James' (1995, 1997) application of social identity theory to explain the status of and health-related outcomes for minority workers in majority dominated organisations.

Additionally, the effectiveness of the current experimental procedure to maintain sufficient intensity in the stress response over the two sets of arithmetic tasks is questionable. Although the stress response may have not lowered because of a practice effect or improvement in performance *per se*, a familiarity with the task over time could have alleviated anxiety. In a similar vein, there are doubts about the experimental effectiveness and validity of studies using mood induction techniques to induce positive and negative mood states. Some authors question whether sufficient intensity of mood is induced, while others consider the possibility that the observed effectiveness is due mainly to demand characteristics of the experimental situation (Westermann, Spies, Stahld & Hesse, 1980).

Third, the feedback employed in the present research may not have provided the participants with any relevant information that was likely to assist them in defining and increasing their understanding of the situation. Further, the simplistic nature of the informational support (e.g., 'I found the task quite hard' and 'it was good when it stopped') provided no information as to how the participants could cope with the stressor. In future experimental inquiry, the nature of the information provided should be considered carefully.

Finally, inclusion of measures to assess for different coping strategies may have enhanced the interpretation of the findings. It is plausible to suggest that the participants may have employed any one of the eight discrete coping functions highlighted by Folkman et al. (1986) to manage the testing situation.

Having reviewed a number of unforeseen methodological and measurement issues, the current theoretical model is in a far better position to be tested in future research. It is still the contention of this thesis that self-categorization theory and its explanation of social influence has a great deal to offer the stress literature. Importantly, there was some tentative support for the hypotheses to warrant further research and the paths that this may take have been specified above.

7.2   Summary

In summary, the current research was highly innovative and exploratory. Moreover, it was the first of its kind to integrate a clinical psychological paradigm with a group-based social influence process. With this in mind, it was highly probable that uncertainties and problems in this area of research would arise. However, awareness of the formidable uncertainties and problems in this area of research should not discourage further research. The research presented in this thesis has only scratched the surface in attempting to successfully integrate Lazarus and Folkman's (1984) transactional model of stress and self-categorization theory (Turner, 1987, 1991; Turner et al., 1987). There is good reason to believe that as more is learned about this integration and if the present methodological and measurement considerations are resolved this approach would provide a more parsimonious account of cognitive appraisal of stress.

Lazarus and Folkman's (1984) work that developed from a critique of traditional stimulus and response approaches to stress, is one of the most influential and valuable models of the stress process thus far. The concept of cognitive appraisal has furthered our understanding of how a person interprets and constructs meaning from a stressful situation and what the situation may signify for their personal

wellbeing. When the importance of the individual's interpretation is acknowledged in the stress process we start to gain some understanding of individual differences and why two individuals may display different emotional responses to the same situation. This finds related support in the clinical psychology field. In particular, cognitive therapy and its treatment of psychological dysfunction examines the cognitive processes that contribute to maladaptive emotional and behavioural responses (Monroe & Kelley, 1995). At present, though, the stress process has been conceptualised from what is largely an individual level of psychological analysis. Some reference has been made to the potential for social factors to impact on the stress process in the coping and social support literature. However, a truly social psychological explanation is yet to be provided. This thesis asserts that the meaning of stress and the social interaction that surrounds it is bound up with individuals' social identities. Thus, our understanding of the stress process can only be furthered if we examine the social psychological mechanisms involved in the transactional equation of stress. The process of cognitive appraisal and how this impacts on the person's wellbeing (at a personal and social level) is influenced by the social context of salient social group memberships in which individuals find themselves. Therefore, it is essential to examine how the stress process and social psychological principles can come together to provide an explanation of psychological wellbeing and emotional reaction.

REFERENCES

Abrams, D., & Hogg, M.A. (1990). *Social Identity Theory: Constructive and Critical Advances*. Exeter, Great Britain: BPCC Wheatons Ltd.

Aspinwall, L.G., & Taylor, S.E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin, 121(3)*, 414-436.

Beck, A.T., & Steer, R.A. (1993). *Beck Anxiety Inventory Manual*. San Antonio: The Psychological Corporation.

Billig, M., & Tajfel, H. (1973). Social categorization and similarity in intergroup behaviour. *European Journal of Social Psychology, 3(1)*, 27-52.

Breznitz, S., & Goldberger, L. (1995). *Handbook of Stress*. New York: The Free Press.

Buunk, B.P. (1994). Social comparison processes under stress: towards an integration of classic and recent perspectives. *European Review of Social Psychology, 5,* 211-241.

Carroll, D., Turner, J., & Hellawell, J. (1986). Heartrate and oxygen consumption during active psychological challenge: The effects of difficulty. *Psychophysiology, 23,* 174-181.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. San Diego, CA: Academic.

Cohen, S., Kessler, R.C., & Gordon, L.U. (1995). *Measuring Stress: A Guide for Health and Social Scientists*. New York: Oxford University Press.

Cohen, S., & McKay, G. (1984). Social support, stress and the buffering hypothesis: A theoretical analysis. In A. Baum, S.E. Taylor, & J. Singer (Eds.), *Handbook of Psychology and Health* (Vol 4. pp. 253-268). Hillsdale, NJ: Erlbaum.

Cohen, S., & Syme, S.L. (1985). *Social Support and Health*. Orlando, Florida: Academic Press.

Cohen, S., & Wills, T.A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin, 98(2),* 310-357.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38(5),* 300-314.

Cummins, R.C. (1990). Job stress and the buffering hypothesis. *Group and Organization Studies*, 15(1), 92-104.

Dergotis, M., & Coon, H. (1993). Self report measures of stress. In L. Goldberger & S. Breznitz (Eds.), *Handbook of Stress* (2nd ed., pp 200-233). New York: The Free Press.

Deutsch, M., & Gerard, H.B. (1955). A study of normative and informational social influences upon social judgement. *Journal of Abnormal and Social Psychology, 51*, 629-636.

Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function group status and identification. *Journal of Experimental Social Psychology, 31*, 410-436.

Eckenrode, J. (1991). *The Social Context of Coping*. New York: Plenum Press.

Ellemers, N., Spears, R., & Doosje, B. (1997). Sticking together or falling apart: In group identification as a psychological determinant of group commitment versus individual mobility. *Journal of Personality and Social Psychology, 72(3),* 617-626.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations,7*, 114-140.

Folkman, S., Chesney, M., McKusick, L., Ironson, G., Johnson D., & Coates, T. (1991). Translating coping theory into an intervention. In J. Eckenrode (Ed.), *The Social Context of Coping*. New York: Plenum Press.

Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 21*, 219-239.

Folkman, S., Lazarus, R.S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R.J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping and encounter outcomes. *Journal of Personality and Social Psychology, 50(5),* 992-1003.

Ganster, D.C., Mayers, B.T., & Fusilier, M.R. (1986). Role of social support in the experience of stress at work. *Journal of Applied Psychology, 71(1),* 102-110.

Gerard, H.B., & Rabbie, J.M. (1961). Fear and social comparison. *Journal of Abnormal and Social Psychology, 62(3),* 586-592.

Gore, S. (1985). Social support and style of coping. In S. Cohen & S.L. Syme (Eds.), *Social Support and Health* (pp. 219-238). Orlando, Florida: Academic Press.

Gump, B.B., & Kulik, J.A. (1997). Stress, affiliation and emotional contagion. *Journal of Personality and Social Psychology, 72(2),* 305-319.

Haslam, S.A. (2001). *Psychology in Organizations: The Social Identity Approach.* London: Sage Publications.

Haslam, S.A., Oakes, P.J., Reynolds, K.J., & Turner, J.C. (1999). Social identity salience and the emergence of stereotype consensus. *Personality and Social Psychology Bulletin, 25,* 809-818.

Haslam, S.A., Turner, J.C., Oakes, P.J., McGarty, C., & Reynolds, K.J. (1998). The groups as a basis for emergent stereotype consensus. *European Journal of Social Psychology, 9*, 203-239.

Hobfoll, S.E., & Vaux, A. (1993). Social support: social resources and social context. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 685-703). New York: The Free Press.

Homles, T.H., & Rahe, R.H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213-218.

Houston, B.K. (1987). *Stress and Coping*. In C.R. Snyder & C.E. Ford (Eds.), *Coping with Negative Life Events: Clinical and Social Psychological Perspectives* (pp. 165-188). New York: Plenum Press.

Jacobs, E., & Haslam, S.A. (2000). *The role of social influence in the appraisal of stressful situations: Evidence that all support is not equally supportive.* Unpublished Manuscript: The Australian National University.

James, K. (1995). Social identity, work stress, and minority workers' health. In G. Puryear Keita & S.I. Sauter (Eds.), *Job Stress 2000: Emerging Issues* (pp.127-145). Washington, DC: American Psychological Association.

James, K. (1997). Worker social identity and health-related costs for organizations: A comparative study between ethnic groups. *Journal of Occupational Health Psychology, 2(2)*, 108-117.

Judd, C.M., McClelland, G.H., & Culhane, S.E. (1995). Data analysis: Continuing issues in the everyday analysis of psychological data. *Annual Review of Psychology, 46*, 433-465.

Kaplan, H.B. (1983). *Psychosocial Stress – Trends in Theory and Research*. New York: Academic Press.

Katkin, E.S., Dermit & Wine, S.K. (1993). Psychophysiological assessment of stress. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 142-157). New York: The Free Press.

Kaufmann, G.M., & Beehr, T.A. (1986). Interactions between job stressors and social support: some counterintuitive results. *Journal of Applied Psychology, 71(3),* 522-526.

Kesslor, R.C., & McLeod, J.D. (1985). Social support and mental health in community samples. In S. Cohen & S.L. Syme (Eds.), *Social Support and Health* (pp. 219-238). Orlando, Florida: Academic Press.

Kulik, J.A., Mahler, I.M., & Moore, P.J. (1996). Social comparison and affiliation under threat: Effects on recovery from major surgery. *Journal of Personality and Social Psychology, 71(5),* 967-979.

Latack, J.C. (1986). Coping with job stress: Measures for future directions for scale development. *Journal of Applied Psychology, 71(3),* 377-385.

Lazarus, R.S. (1966). *Psychological Stress and the Coping Process*. New York: McGraw Hill.

Lazarus, R.S (1991a). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist, 46(8),* 819-834.

Lazarus, R.S. (1991b). Cognition and motivation in emotion. *American Psychologist, 46(4),* 352-367.

Lazarus, R.S. (1993). Why we should think of stress as a subset of emotion. In L.Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 21-39). New York: The Free Press.

Lazarus, R.S. (1999). *Stress and Emotion: A New Synthesis*. London: Free Association Books.

Lazarus, R.S., & Folkman, S. (1984). *Stress, Appraisal and Coping.* New York: Springer Publishing Company.

Lazarus, R.S., Opton, E.M., Nomikos, M.S., & Rankin, N.O. (1965). The principle of short circuiting of threat: Further evidence. *Journal of Personality, 33,* 622-635.

Lazarus, R.S., & Smith, C.A. (1988). Knowledge and appraisal in the cognition emotion relationship. *Cognition and Emotion, 2(4),* 281-300.

Levine, R.M., & Reicher, S.D. (1996). Making sense of symptoms: Self categorization and the meaning of illness and injury. *British Journal of Social Psychology, 35,* 245-256.

Luhtanen, R., & Crocker, J. (1992). *Personality and Social Psychology Bulletin, 18(3),* 302-318.

Mackie, D.M., Asuncion, A.G., & Worth, L.T. (1990). Processing of persuasive ingroup messages. *Journal of Personality and Social Psychology, 58(5),* 812-822.

McGarty, C., Haslam, S.A., Hutchinson, K.J. & Turner, J.C. (1994). The effects of salient group memberships on persuasion. *Small Group Research, 25(2),* 267-293.

Moos, R.H., & Schaefer, J.A. (1993). Coping Resources and Processes: Current concepts and measures. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 234-257). New York: The Free Press.

Monroe, S.M., & Kelley, J.M. (1995). Measurement of stress appraisal. In S. Cohen, R. Kessler & L. Gordon (Eds.), *Measuring Stress.* New York: Oxford University Press.

Oakes P.J. (1987). The salience of social categories. In J.C. Turner. M.A. Hogg, P.J. Oakes, S.D. Reicher, & M.S. Wetherell. *Rediscovering the Social Group: A Self-Categorization Theory* (pp. 117-141). Oxford, UK: Blackwell.

Oakes, P.J., Haslam, S.A., & Turner, J.C. (1994*). Stereotyping and Social Identity.* Oxford, UK: Blackwell.

Oakes, P.J., Turner, J.C. & Haslam, S.A. (1991). Perceiving people as group members: The role of fit in the salience of social categorizations. *British Journal of Social Psychology, 30*, 125-144.

O'Neil, H.F., Speilberger, C.D., & Hansen, D.N. (1969). The effects of state anxiety and task difficulty on computer-assisted learning. *Journal of Educational Psychology, 60*, 343-350.

Pearlin, L. (1993). The social contexts of stress. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 303-315). New York: The Free Press.

Platow, M.J., Mills, D., & Morrison, D. (2000). The effects of social context, sources fairness and perceived self source similarity on social influence: a self categorization analysis. *European Journal of Social Psychology, 30(1)*, 69-81.

Rosch, E. (1978). Principles of categorization. In E. Rosch & B.B. Lloyd (Eds.), *Cognition and Categorization* (pp. 28-49). Hillsdale, NJ: Erlbaum.

Rosenberg, M. (1965). *Society and the Adolescent Self-image.* Princeton, NJ: Princeton University Press.

Schachter, S. (1959). *The Psychology of Affiliation.* Stanford, CA: Stanford University Press.

Seyle, H. (1956). *The Stress of Life.* New York: McGraw-Hill.

Seyle, H. (1993). History of the stress concept. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of Stress* (2nd ed., pp. 844-860). New York: The Free Press.

Smithson, M. (2000). *Statistics with Confidence*. Great Britain: The Alden Press.

Speilberger, C.D., Gorsuch, R.L., & Lushene, R.E. (1983). *Manual for the State- Trait Anxiety Inventory* (STAI, Form Y). Palo Alto, CA: Consulting Psychologists Press.

Speisman, J.C., Lazarus, R.S., Mordkoff, A., & Davison, L. (1964). Experimental reduction of stress based on ego-defensive theory. *Journal of Abnormal and Social Psychology, 68(4)*, 367-380.

Tajfel, H. (1975). The exit of social mobility and the value of social change. *Social Change Information, 14*, 101-118.

Tajfel, H. (1979). Individuals and groups in social psychology. *British Journal of Social and Clinical Psychology, 18*, 183-190.

Tajfel, H. (1981). *Human Groups and Social Categories*. Cambridge: Cambridge University Press.

Tajfel, H., Flament, C., Billig, M.G., & Bundy, R.F. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*, 149-177.

Tajfel, H., & Turner, J.C. (1979). An integrative theory of intergroup behaviour. In W.G. Austin & S. Worchel (Eds.), *The Social Psychology of Intergroup Relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Tajfel, H., & Turner, J.C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W.G. Austin (Eds.) *Psychology of Intergroup Relations* (2nd ed., pp. 7-24). Chicago: Nelson-Hall.

Terry, D.J., Callan, V.J., & Sartori. (1996). Employee adjustment to an organizational merger: Stress, coping and intergroup differences. *Stress Medicine, 12*, 105-122.

Thoits, P.A. (1982). Conceptual, methodological, and theoretical problems in

    studying social support as a buffer against life stress. *Journal of Health and*

    Social Behavior, 23(2), 145-159.

Tomaka, J., Blascovich, J., Kelsey, R.M., & Leitten, C.L. (1993). Subjective,

    physiological, and behavioral effects of threat and challenge appraisal. *Journal*

    of Personality and Social Psychology, 65(2), 248-260.

Tomaka, J., Blascovich, J., Kibler, J., & Ernst, J.M. (1997). Cognitive and

    physiological antecedents of threat and challenge appraisal. *Journal of*

    Personality and Social Psychology, 73(1), 63-72.

Turner, J.C. (1975). Social comparison and social identity: Some prospects for

    intergroup behaviour. *European Journal of Social Psychology, 5*, 5-34.

Turner, J.C. (1982). Towards a cognitive redefinition of the social group. In H.

    Tajfel (Ed.), *Social Identity and Intergroup Relations* (pp. 15-40). Cambridge,

    UK: Cambridge University Press.

Turner, J.C. (1984). Social identification and psychological group formation. In H.

    Tajfel (Ed.), *The Social Dimension: European Developments in Social*

    Psychology Vol. 2 Cambridge: Cambridge University Press and Paris:

    Editions de la Maison des Sciences de l'Homme, ch. 25, pp. 518-538.

Turner, J.C. (1985). Social categorization and the self-concept: A social cognitive

    theory of group behaviour. In E.J. Lawler (Ed.), *Advances in Group*

    Processes (Vol 2. pp. 71-122). Greenwich, Connecticut: JAI Press.

Turner, J.C. (1987). The analysis of social influence. In J.C. Turner, M.A. Hogg, P.J.

    Oakes, S.D Reicher & M.S Wetherell, *Rediscovering the Social Group: A*

    Self-Categorization Theory (pp. 1-18). Oxford, UK: Blackwell.

Turner, J.C. (1991). *Social Influence*. Milton Keynes, UK: Open University Press.

Turner, J.C. (1996). Henri Tajfel: An Introduction. In W.P. Robertson (Ed.), *Social Groups and Identities: Developing the Legacy of Henri Tajfel* (pp. 1-23). Bristol, UK: Butterworth-Heinemann.

Turner, J.C., & Haslam, S.A. (2001). Social identity, organizations and leadership. In M.E. Turner (Ed.), *Groups at Work: Advances in Theory and Research*, Hillsdale, NJ: Erlbaum.

Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S.D., & Wetherell, M.S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. Oxford, UK: Blackwell.

Turner, J.C., Oakes, P.J., Haslam, S.A., McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20*, 454-463.

Turner, J.C., & Oakes, P.J. (1986). The significance of the social identity for social psychology with reference to individualism, interactionism and social influence. *British Journal of Social Psychology, 25*, 237-252.

Turner, J.C., & Onorato, R.S. (1999). Social identity, personality and the self concept: A self-categorization perspective. In T.R. Tyler, R. Kramer & O. John (Eds.), *The Psychology of the Self*. Hillsdale, NJ: Erlbaum.

Turner, M.E., Pratkanis, A.R., Probasco, P., & Leve, C. (1992). Threat, cohesion, and group effectiveness: Testing a social identity maintenance perspective on groupthink. *Journal of Personality and Social Psychology, 65(5)*, 781-796.

Turner, R.J. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behavior, 22*, 357-367.

Vingerhoets, AD. (1985). *Psychosocial Stress: An Experimental Approach. Life Events, Coping and Psychobiological Functioning*. Lisse: Swets & Zeitlinger.

Wethington, E., & Kessler, R.C. (1991). In J. Eckenrode (Ed.), *The Social Context of Coping.* New York: Plenum Press.

Westermann, R., Spies, K., Stahl, G., &, Hesse, F.W. (1996). Relative effectiveness and validity of mood induction procedures: A meta-analysis. *European Journal of Social Psychology, 26,* 557-580.

Wilkinson, R.B., Walford, W.W., & Espnes, G.A. (2000). Coping styles and psychological health in adolescents and young adults: A comparison of moderator and main effects models. *Australian Journal of Psychology, 52,* 155-162.

APPENDIX A

A study of performance

People differ from each other in all kinds of ways, and every person is a unique individual. One person loves music and another likes to go for a walk, and another likes to read whereas another likes to go out. How do people differ from you?

1.   What are your hobbies? ....
2.   In what year were you born? _ _ _ _
3.   Are you concerned with your general appearance? ....

Indicate your agreement with the following items by circling one number on each scale

1. On the whole I am satisfied with myself

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

2. At times I think I am no good at all

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

3. I feel I do not have much to be proud of

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

4. I take a positive attitude towards myself

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

5. I certainly feel useless at times

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

6. All in all, I am inclined to feel that I am a failure

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

7. I wish I could have more respect for myself

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

Please do not turn the page until instructed

SET 1   **SET 2**

1.   _____ _____   _____ _____

2.   _____ _____   _____ _____

3.   _____ _____   _____ _____

4.   _____ _____   _____ _____

5.   _____ _____   _____ _____

6.   _____ _____   _____ _____

7.   _____ _____   _____ _____

8.   _____ _____   _____ _____

9.   _____ _____   _____ _____

10. _____ _____   _____ _____

11. _____ _____   _____ _____

12. _____ _____   _____ _____

13. _____ _____   _____ _____

14. _____ _____   _____ _____

15. _____ _____   _____ _____

16. _____ _____   _____ _____

Indicate your agreement with each of the following statements describing your feelings during the arithmetic task by circling one number on each scale.

1.   I was more worried than I normally am.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

2.   I felt more nervous and ill at ease than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

3.   I had more difficulty concentrating than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

4.   I felt more anxious than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

5.   My face was more flushed than it normally is.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

6.   My heart was pounding more than it normally does.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

7.   I felt more discomfort in my stomach than I usually do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

Please do not turn over the page until instructed

SET 1   **SET 2**

1.   _____   _____

2.   _____   _____

3.   _____   _____

4.   _____   _____

5.   _____   _____

6.   _____   _____

7.   _____   _____

8.   _____   _____

9.   _____   _____

10.   _____   _____

11.   _____   _____

12.   _____   _____

13.   _____   _____

14.   _____   _____

15.   _____   _____

16.   _____   _____

Indicate your agreement with each of the following statements describing your feelings during the arithmetic task by circling one number on each scale.

1.   I was more worried than I normally am.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

2.   I felt more nervous and ill at ease than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

3.   I had more difficulty concentrating than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

4.   I felt more anxious than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

5.   My face was more flushed than it normally is.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

6.   My heart was pounding more than it normally does.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

7.   I felt more discomfort in my stomach than I usually do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

8.   While conducting the tasks, did you feel that you had anything in common with any of the other students taking part in the study?

| Nothing in common | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A lot in common |

9.   I identify with the other students in the room.

| Do not identify | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly identify |

10. Did you find the feedback from the other student helpful?

Not at all   1   2   3   4   5   6   7   Extremely

11. How were you able to cope with the mental arithmetic tasks?

Not at all   1   2   3   4   5   6   7   Extremely well

12. How would you describe yourself generally?

I am extremely   1   2   3   4   5   6   7   I am extremely
relaxed   stressed

13. How interested were you in this study?

Not at all   1   2   3   4   5   6   7   Extremely

14. How much attention did you devote to the study's instructions and tasks?

No attention   1   2   3   4   5   6   7   A lot of attention

15. I often regret that I belong to some of the social groups I do.

Do not agree   1   2   3   4   5   6   7   Agree completely
at all

16. On the whole I am satisfied with myself.

Do not agree   1   2   3   4   5   6   7   Agree completely
at all

17. In general, I am glad to be a member of the social groups I belong to.

Do not agree   1   2   3   4   5   6   7   Agree completely
at all

18. All in all, I am inclined to feel that I am a failure.

Do not agree   1   2   3   4   5   6   7   Agree

Finally, please respond to the following

How old are you? _____ yrs

What is your sex? (please circle)   Male   or   Female

APPENDIX B

Arithmetic task 1

	Exercise 1	Exercise 2
1)	47 + 52	96 - 64
2)	23 + 75	88 - 59
3)	75 + 96	78 - 65
4)	67 + 67	56 - 29
5)	84 + 47	48 - 31
6)	88 + 15	97 - 27
7)	43 + 72	31 - 16
8)	88 + 68	48 - 24
9)	14 + 59	43 - 37
10)	58 + 47	85 - 74
11)	33 + 73	95 - 41
12)	42 + 84	86 - 65
13)	61 + 13	72 - 35
14)	97 + 71	51 - 18
15)	72 + 79	74 - 48
16)	38 + 41	76 - 67

Arithmetic task 2

	Exercise 1	Exercise 2
1)	96 + 64	52 – 47
2)	55 + 85	75 – 23
3)	75 + 68	96 - 75
4)	59 + 49	76 - 67
5)	31 + 48	84 - 47
6)	97 + 27	88 - 15
7)	31 + 16	72 - 43
8)	48 + 24	88 - 68
9)	43 + 37	59 - 14
10)	85 + 74	58 - 47
11)	41 + 95	73 - 33
12)	86 + 66	84 - 42
13)	72 + 35	61 - 13
14)	51 + 18	97 - 71
15)	74 + 48	79 - 27
16)	76 + 76	41 - 28

APPENDIX C

A study of performance

In this study you will be asked to perform a number of tasks.
Before you do, please read the following questions:

- List up to three things that you and the members of your group do relatively often

1) .... 2) .... 3 ....

- List up to three things that you and the members of your group do relatively rarely

1) .... 2) .... 3 ....

- List up to three things that you and the members of your group generally do well

1) .... 2) .... 3) ....

- List up to three things that you and the members of your group generally do badly

1) .... 2) .... 3) ....

Write a short paragraph, indicating what you like about your group

....
....
....
....
....
....

Your group's nickname: _____

Please do not turn over the page until instructed

Your group's nickname: _____

SET 1   ## SET 2

2. _____   _____

2. _____   _____

3. _____   _____

4. _____   _____

5. _____   _____

6. _____   _____

7. _____   _____

8. _____   _____

9. _____   _____

10. _____   _____

11. _____   _____

12. _____   _____

13. _____   _____

14. _____   _____

15. _____   _____

16. _____   _____

Your group's nickname: _____

Indicate your agreement with each of the following statements describing your feelings during the arithmetic task by circling one number on each scale.

1.   I was more worried than I normally am.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

2.   I felt more nervous and ill at ease than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

3.   I had more difficulty concentrating than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

4.   I felt more anxious than I normally do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

5.   My face was more flushed than it normally is.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

6.   My heart was pounding more than it normally does.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

7.   I felt more discomfort in my stomach than I usually do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

Please do not turn over the page until instructed

Your group's nickname: _____

SET 1

SET 2

2.   _____   _____

2.   _____   _____

3.   _____   _____

4.   _____   _____

5.   _____   _____

6.   _____   _____

7.   _____   _____

8.   _____   _____

9.   _____   _____

10.   _____   _____

11.   _____   _____

12.   _____   _____

13.   _____   _____

14.   _____   _____

15.   _____   _____

16.   _____   _____

Your group's nickname: _____

Indicate your agreement with each of the following statements describing your feelings during the arithmetic task by circling one number on each scale.

1. I was more worried than I normally am.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

2. I felt more nervous and ill at ease than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

3. I had more difficulty concentrating than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

4. I felt more anxious than I normally do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

5. My face was more flushed than it normally is.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

6. My heart was pounding more than it normally does.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

7. I felt more discomfort in my stomach than I usually do.

| Do not agree at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Agree completely |

8. While conducting the tasks, did you feel that you had anything in common with any of the other students taking part in the study?

| Nothing in common | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A lot in common |

9. I identify with the other students in the room.

| Do not identify | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly identify |

10.   Did you find the feedback from the other student helpful?

Not at all   1   2   3   4   5   6   7   Extremely

11.   How were you able to cope with the mental arithmetic tasks?

Not at all   1   2   3   4   5   6   7   Extremely well

12.   How would you describe yourself generally?

I am extremely   1   2   3   4   5   6   7   I am extremely
   relaxed   stressed

13.   How interested were you in this study?

Not at all   1   2   3   4   5   6   7   Extremely

14.   How much attention did you devote to the study's instructions and tasks?

No attention   1   2   3   4   5   6   7   A lot of attention

15.   I often regret that I belong to some of the social groups I do.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

16.   On the whole I am satisfied with myself.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

17.   In general, I am glad to be a member of the social groups I belong to.

Do not agree   1   2   3   4   5   6   7   Agree completely
   at all

18.   All in all, I am inclined to feel that I am a failure.

Do not agree   1   2   3   4   5   6   7   Agree completely

Finally, please respond to the following

How old are you? _____ yrs

What is your sex? (please circle)   Male   or   Female

APPENDIX D

Table D.1

Univariate Tests of Self-Definition and Feedback for the Manipulation Checks

IV	DV	F	df	p
Self-Definition	Common with Other Participants	0.76	(1/74)	ns
	Performance of Others			
	Important	0.02	(1/74)	ns
	Identify	1.86	(1/74)	ns
	Cope with Tasks	0.67	(1/74)	ns
	General Stress	2.33	(1/74)	ns
	Attention to Tasks	0.23	(1/74)	ns
	Be in Video	0.62	(1/74)	ns
	Personal Self-Esteem	1.02	(1/74)	ns
Feedback	Common with Other Participants	0.34	(1/74)	ns
	Performance of Others			
	Important	0.01	(1/74)	ns
	Identify	5.37	(1/74)	<.05
	Cope with Tasks	0.09	(1/74)	ns
	General Stress	0.18	(1/74)	ns
	Attention to Tasks	0.02	(1/74)	ns
	Be in Video	0.03	(1/74)	ns
	Personal Self-Esteem	1.51	(1/74)	ns
Self-Definition Feedback	Common with Other Participants	0.45	(1/74)	ns
	Performance of Others			
	Important	1.90	(1/74)	ns
	Identify	3.09	(1/74)	0.08
	Cope with Tasks	0.09	(1/74)	ns
	General Stress	0.18	(1/74)	ns
	Attention to Tasks	0.02	(1/74)	ns
	Be in Video	0.03	(1/74)	ns
	Personal Self-Esteem	2.17	(1/74)	ns