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Case Report

MOOD PROFILING DURING OLYMPIC QUALIFYING JUDO COMPETITION: A CASE STUDY TESTING TRANSACTIONAL RELATIONSHIPS

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ABSTRACT

This case study investigated relationships between personality, mood states changes, coping strategies, self-set goals, and self-efficacy in an elite judo player. A transactional perspective of psychological responses over time was used to guide data analysis. The ambient mood is proposed to contribute to the interpretation of, and reaction to, events during competition, which lead to subsequent emotional responses. A male international Judo player completed a number of self-report measures before and during a 4-contest tournament. Measures included the EPQ, MCOPE, Brunel Mood Scale, self-set goals, and self-efficacy for goal attainment. State measures were completed after every contest. Results indicated high scores of self-efficacy to achieve performance goals and outcome goals. Pre-competition mood results indicated high scores on the Vigor and Anger subscales with moderate scores for Tension, and zero scores for Depressed mood, a mood profile that remained relatively stable after winning his first two contests. After losing his third contest, he reported symptoms of Depressed mood and indicated using self-blame as coping strategy during the contest. Before the fourth contest, he coped by using planning and increasing effort. These coping strategies were associated with reductions in Depressed mood and increases in Vigor. After finding out his next contest was against a former World Championship bronze medalist, self-set goals became performance and process with no outcome goal. On losing this contest, scores on the Anger and Depression subscales increased sharply, Fatigue scores increased slightly and Tension and Vigor reduced. Self-blame was used as a coping strategy when experiencing unpleasant emotions. Findings suggest that self-blame was associated with negative psychological states comprising depressed mood. Increasing effort and planning were associated with positive psychological states. Collectively, findings emphasize the value of using a transactional design to explore mood changes over time, and future research should investigate the effectiveness of applied interventions.

KEY WORDS: Emotion, mood, transaction, applied sport psychology, and self-efficacy.

INTRODUCTION

Mood profiling is an assessment method frequently used by sport psychologists in their work with

athletes (Terry, 1995). A recent meta-analysis of mood research indicates that scores on the Profile of Mood States (POMS: McNair et al., 1971) relate with performance (Beedie et al., 2000). Scores on

the POMS (or derivatives) have been particularly predictive of performance in individual combat sports such as karate (Terry and Slade, 1995), kickboxing (Lane et al., 1999) and judo (Farrant and Lane, 2002).

Given the link between theory and practice, it is important for researchers to attempt to provide definitions of the construct they assess. Recent research has proposed a definition of mood for use in sport. Lane and Terry (2000) defined mood as “*a set of feelings, ephemeral in nature, varying in intensity and duration, and usually involving more than one emotion*” (p. 16). A limitation of this definition is that mood and emotion are defined by each other and Jones (2003) argued that researchers and practitioners should try to distinguish between them.

In recognition of the limitation of their definition of mood, Lane et al. (2005) suggested the following two definitions arguably best capture the nature of emotion and mood in the literature. Lazarus (1984) offered the following definition of emotion as “*an organized psychophysiological reaction to ongoing relationships with the environment...what mediates emotions psychologically is an evaluation, referred to as an appraisal, of the personal significance for the well-being that a person attributes to this relationship (...relational meaning), and the process*” (p. 230). Parkinson et al. (1996) proposed that “*mood reflects changing non-specific psychological dispositions to evaluate, interpret, and act on past, current, or future concerns in certain patterned ways*” (p. 216).

Lane and Terry (2000) highlighted difficulties in distinguishing mood from emotion using the POMS or other single-item adjective check list as they only assess the intensity of the response. As it is possible to experience low intense emotions and high intense mood states, intensity is arguably a difficult criterion to use. Lane et al. (2004) suggested that in a research design that attempts to assess transactional relationships between mood states, interpretation of situational variables and subsequent responses, it is possible to infer that scores on the POMS reflect emotion when describing an affective state that occurs as a direct consequence of a specific factor. Therefore, scores on the POMS assessed immediately after competitions are likely to reflect experiences during competition, and therefore could be labeled emotion. By contrast, scores on the POMS assessed away from competition are likely to assess mood. However, as single-adjective checklists provide no contextual information such inferences are only speculative.

Despite the volume of research linking pre-competition mood with performance, few studies

have explored changes in responses to the POMS over time. Mood state changes are proposed to be transactional in nature, in which the mood states at one point in time will influence the interpretation of situational factors, which combine with emotional responses to form the subsequent mood states (Lane and Terry, 2000; Parkinson et al., 1996). Research has demonstrated that transitory mood states are related to stable personality traits (Rusting, 1998; 1999). The assessment of relationships between personality and mood states during competition could cast light on the utility of using personality trait questionnaires as methods of identifying athletes at risk of developing mood states associated with poor performance. Therefore, research to explore transactional changes over time in response to situational and personal factors represents a worthwhile line of enquiry.

In the present study, a transactional model of mood state changes over time was developed. The transactional model for investigating mood changes over time (see Figure 1) suggests that stable personality traits (extraversion, neuroticism, self-esteem, coping disposition) predispose certain transient moods and performance-related cognitions (performance goals, self-efficacy of goal attainment, and intended effort), which combine to influence the appraisal of person-environment interactions.

The aim of this study was to investigate changes in affective states during a judo competition. A case study approach was used to facilitate detailed assessment of idiographic changes and allow examination of the extent which individual data are consistent with theoretical predictions.

CASE REPORT

Participant

A 25-year male Judo player with 16 years experience of which 8 years were at International level volunteered to participate in this study. He regularly competed in ‘A’ class tournaments, which contribute to Olympic and World Championship entry criteria. The competition used in the present study carried European ranking points that would determine selection of Olympic competitors. Olympic selection was reserved for the top ten European players, with the participant ranked in the mid-teens at the time of the competition. To this end, the competition was significant and the outcome personally meaningful. Important goals will increase the likelihood of the individual experiencing emotional reactions (Carver and Scheier, 1990; Lazarus and Folkman, 1984). Control process theory proposes that goals are hierarchical

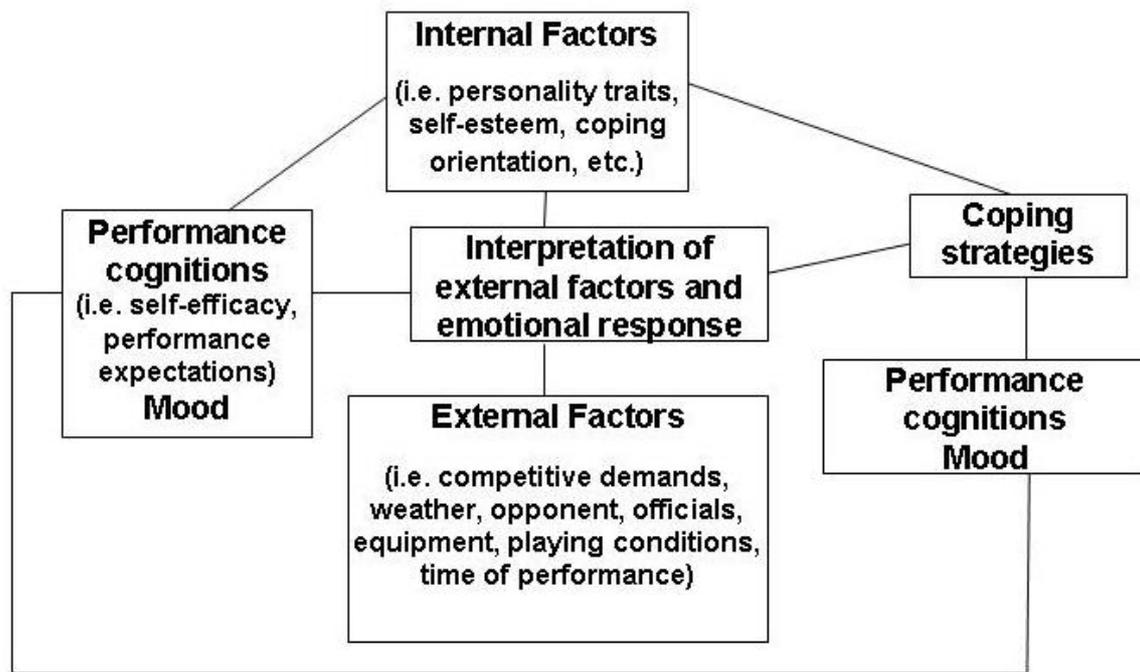


Figure 1. Transactional Framework for mood states.

(Carver and Scheier, 1990). Competing in an Olympic games should be the high point of any athlete's career and so would be associated with a higher order goal. It is suggested that the majority of the competitors in the competition would share this goal, which increases the likelihood of perceiving difficulty of the task.

Measures

Personality: Eysenck's Personality Questionnaire (EPQ: Eysenck and Eysenck, 1975) was used to assess the personality traits of extraversion, neuroticism, and psychoticism. Considerable research has linked EPQ factors with mood (Costa and McCrae, 1980; Meyer and Shack, 1989; Watson and Clark, 1984; 1992).

Self-esteem: Rosenberg's Self-esteem Scale (SES: Rosenberg, 1965) was used to measure self-esteem. The 10-item scale assesses a single self-esteem factor with positive items such as 'On the whole, I am satisfied with myself', and negative items including 'I certainly feel useless at times'. It has been widely used in empirical studies and has proved to be a reliable measure of self-esteem (Sinclair and Vealey, 1989).

Coping: Coping disposition was assessed using the 48-item MCOPE (Crocker and Graham, 1995a). The MCOPE is a sport-specific version of the COPE (Carver et al., 1989) scale. The MCOPE contains nine of the original 13 scales (with items adapted to

sporting situations), and three additional scales based on the research of Crocker (1992) and Madden et al. (1990). Both the COPE and MCOPE scales have been validated for use as coping disposition measures, and state coping measures (Carver et al., 1989; Crocker and Graham, 1995a). Items are re-worded to correspond to dispositional or situational-specific coping behavior. The validity of the MCOPE is proposed to hold for both trait or state versions (Giacobbi and Weinberg, 2000).

Mood: Mood was assessed using Brunel Mood Scale (BRUMS: Terry et al., 1999; 2003). The BRUMS has been comprehensively validated for use in sport. The BRUMS was used in preference to other measures of mood for three reasons: 1) Time of administration is short (60 seconds-3 minutes); 2) the measure has been validated on athletic samples; and 3) normative data are available (Terry et al., 2003).

Performance-related Cognitions: Performance-related cognitions relate to an individual's goals for the event, confidence to achieve these goals, and the effort they intend to employ in the pursuit of those goals. Participants indicated goals for the competition through an open-ended question and could nominate up to three goals.

Self-efficacy for goal attainment was assessed by asking participants to "identify the number that represents how confident you are in achieving each goal today?" on a Likert scale from 'not at all

Table 1. Pre-competition personality and coping disposition scores for a judo player at an international competition.

Stable Variable Pre-competition	Score
Extraversion	21
Neuroticism	8
Psychotics	1
Self-esteem	34
Seeking social support for instrumental reasons	15
Seeking social support for emotional reasons	8
Behavioral disengagement	9
Self-blame	16
Planning	13
Suppression of competing activities	16
Venting of emotions	8
Humor	5
Increase effort	17
Wishful thinking	16
Active coping	17
Denial	9

confident' (1) to very confident (9). Intended effort was measured asking "how much effort do you intend to commit to achieve each goal?" on a Likert scale from 'no effort at all' (1) to 'a great deal of effort' (9). Goals are be classified as outcome goals (win/loss), performance goals (personal best/to meet a subjective criteria for playing well), or process goals (related to the performance of a specific action).

Data were collected at five assessment points: The first assessment point was before competition (pre-competition) where the participant completed an EPQ, a trait MCOPE questionnaire, and the Rosenberg's Self-esteem scale. The goal questionnaire, self-efficacy for goal attainment and intended effort, and a BRUMS asking "How do you feel right now?" was also assessed. The second assessment point was after the first fight (Interval 1); the third assessment point was after the second fight (Interval 2), the fourth assessment was after the third fight (Interval 3), with the final assessment after competition had ended (after the fourth fight). At each interval person-environment, questionnaires recorded any important person-environment interactions, any changes to goals set, self-efficacy for goal achievement and intended effort, mood state, and coping responses (state MCOPE). After the final fight, BRUMS and state MCOPE questionnaires were administered. Pre-competition data were calculated to give scores for neuroticism, extraversion, psychoticism, self-esteem, and coping disposition to reflect the individual's stable personality characteristics. The data from each interval for mood was converted to T-scores using norms reported by Terry et al. (2003) and the state

coping responses were classified in terms of MCOPE coping styles.

RESULTS

The participant won his first two fights then lost the next and entered the reportage, in which he faced a player who had previously won a bronze medal at the Judo World Championships. The participant lost this fight and was eliminated from the competition.

Pre-competition assessments of personality and psychological state variables indicate high extraversion, low neuroticism, and low psychoticism (Published norms for adults are: Extraversion = 14, neuroticism = 10, psychoticism = 4, Eysenck and Eysenck, 1975, see Table 1). He reported moderately high levels of self-esteem in comparison to scores on the Rosenberg scale assessed in sport (see Lane et al., 2002). 'Seeking social support for instrumental reasons', 'self-blame', 'planning', 'suppression of competing activities', 'increasing effort', 'wishful thinking', and 'active coping' as general coping dispositions were identified as the primary coping strategies.

He indicated that his primary goal was to win the first contest, of which the participant was quite confident of achieving, and was intending to commit a great deal of effort to the task. He was confident about attaining two performance goals. Pre-competition goals were outcome and performance based, supporting the notion that athletes use a combination of types of goal (Jones and Hanton, 1996).

After the first two bouts (which he won) there were no perceived person-environment interactions significant enough to change goals, though mood state did change and coping behaviors were adopted

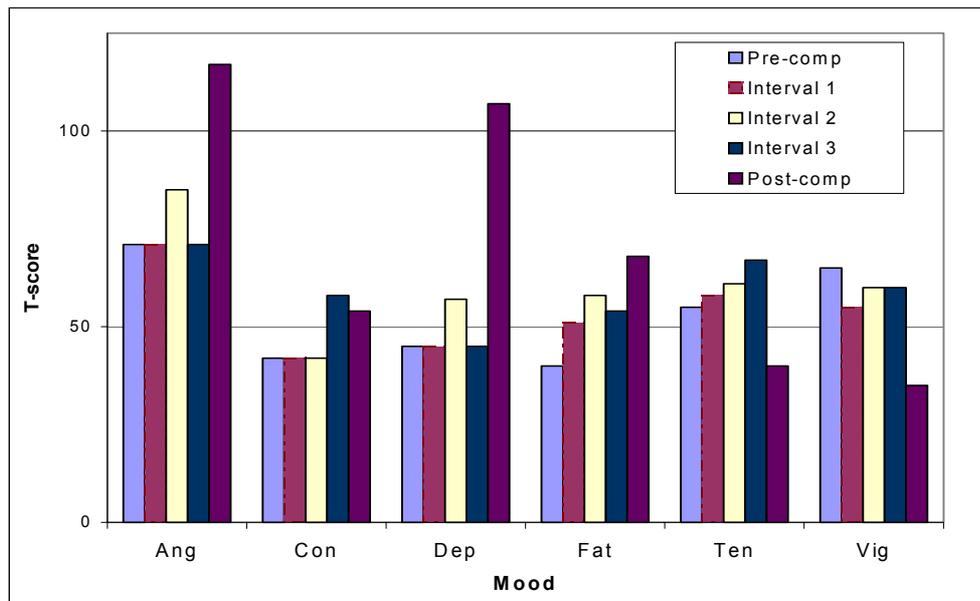


Figure 2. BRUMS scores at performance intervals.

at each interval (Figure 2 illustrates the mood state at each assessment stage). At interval 1 (post first bout and pre-second bout), fatigue increased and vigor decreased by at least one standard deviation in comparison to normative data reported by Terry et al. (2003). At interval 2 (post second bout, pre third bout), anger, depression, fatigue increased notably, while tension and vigor showed slight increases. Coping behaviors at interval 1 were consistent with trait coping disposition.

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At interval 3, a significant person-environment interaction caused the participant to change his performance-related goals. It is suggested that this interaction was caused by the knowledge of facing a difficult opponent. Self-efficacy for goal achievement was only moderate, though intended effort remained high. Scores on confusion and tension increased. Coping behaviors at Interval 3 indicated that the participant was concentrating on the task ahead, by making plans, discussing tactics with others, and attempting to suppress competing activities.

After the fourth fight (see post-competition column, Table 2) and being eliminated from the competition, mood changed dramatically. Anger increased by more than four standard deviations, depression by more than six, and fatigue by one. Tension and vigor both decreased by more than two standard deviations, with only confusion remaining relatively stable from the previous assessment (though this is notably greater than the pre-competition score). Changes to coping behaviors were again evident. Wishful thinking, self-blame and active coping strategies were employed, while suppression of competing activities, seeking social support for instrumental reasons, and increasing effort were no longer used.

DISCUSSION

The purpose of the present case study was to investigate transactional relationships between mood states, emotional responses, personality and coping style in an elite judo player. The proposed model (see Figure 1) suggests that stable personality traits influence the interpretation of situation factors to influence changes in mood states. The transactional nature of the model suggests that mood states unfold over time with emotional responses to situational and personality factors.

Mood was shown to fluctuate at each assessment demonstrating its transient nature (see Figure 2). At the second interval, after winning his second bout, there was an increase in all unpleasant mood states. The participant did not report a perceived person-environment interaction, and so the cause of this emotion is unidentified. It is possible that the participant was not consciously

Table 2. Performance related cognition, mood states, and coping changes during competition (Comp).

Performance-related cognitions	Pre-Comp	Interval 1	Interval 2	Interval 3	Post-Comp
Important person-environment interaction		No	No	Yes	
Goals					
Type of goal (1)	Outcome			Performance	
Self-efficacy for goal achievement (1)	7			5	
Intended effort for goal achievement (1)	8			8	
Type of goal (2)	Performance			Performance	
Self-efficacy for goal achievement (2)	8	No Change	No Change	5	
Intended effort for goal achievement (2)	8			9	
Type of goal (3)	Performance			Process	
Self-efficacy for goal achievement (3)	9			5	
Intended effort for goal achievement (3)	9			7	
Coping Style					
Seeking social support-instrumental reasons		1	1	3	0
Seeking social support-emotional reasons		0	4	3	3
Behavioral disengagement		0	0	0	0
Self-blame		3	3	0	4
Planning		1	0	4	3
Suppression of competing activities		3	3	4	0
Venting of emotions		0	1	0	1
Humor		0	0	0	0
Increase effort		3	1	3	1
Wishful thinking		3	1	1	3
Active coping		3	0	0	4
Denial		0	0	0	0
Mood					
Anger	71	71	85	71	117
Confusion	42	42	42	58	54
Depression	45	45	57	45	107
Fatigue	40	51	58	54	68
Tension	55	58	61	67	40
Vigor	65	55	60	60	35

aware of the emotion (Cramer, 2000). As predicted in the transactional framework (Figure 1), the negative state influenced the selection of coping behaviors, and the participant adopted more emotion-focused and less problem-focused strategies.

At the third interval, a significant person-environment interaction prompted the participant to change his goals. After losing his third bout, the player was to face a competitor in the reportage who previously had won a World Championship medal. The participant was aware that his progress towards his ultimate higher order goal of achieving European ranking points was threatened, and reported lower self-efficacy for goal attainment than for the previous rounds.

The emotion resulting from the discrepancy between the rate of progress toward the goal and expected rate is evident in the interval 3 mood profile. Ideally, the player would not have wanted to take the reportage route through the competition, and so a discrepancy between the actual rate of

progress towards the goal and the internal standard had taken place (Carver and Scheier, 1990). Since the reportage route still offered an opportunity to win a bronze medal and gain valuable ranking points, the discrepancy was not too large and the concomitant emotion was moderate (Crocker and Graham, 1995b).

At this stage the depressed mood scores returned to zero, and the player employed more problem-focused coping behaviors again (such as planning and increasing effort). These positive coping behaviors might have reduced the intensity of the emotional episode during the interval. While the player acknowledged the threat to his goal attainment and his self-efficacy decreased, he was determined to perform to the best of his ability, knowing that he could produce an unexpected victory. The increase in tension and confusion reflected the player's perceived inability to meet the demands of the task, corresponding with the lower self-efficacy score.

When losing the fourth fight prevented further progress toward the desired goals, an intense emotional reaction was evident in the mood assessment. The findings support the notion that differences between the perceived progress toward a goal and the internally expected rate of progress will elicit emotional responses (interval 3 and post-competition) and that these responses will interact with mood (Carver and Scheier, 1990; Crocker and Graham, 1995b).

The results showed that not only did mood change when an important person-environment interaction had taken place, but also after each fight, even when progress toward the initial goals was consistent with the internally expected standard (intervals 1 and 2). These changes may have resulted from subtle, subconscious emotional responses linked to goals other than those identified, possibly not directly related to the current competition (Carver and Scheier, 1990; Crocker and Graham, 1995b).

Coping behaviors were also adopted at every interval, even though no significant interaction consciously threatened the achievement of the goals at intervals 1 and 2. Some researchers (Coyne and Gottlieb, 1996; Wills, 1997) have argued that coping is not always conscious and sometimes requires no effort. Wills (1997) suggested that over time effective coping strategies might develop into a routine requiring no conscious thought or effort. Alternatively, these behaviors might have been used as proactive behaviors to enhance the opportunity for goal achievement. The regular employment of a strategy that explores a series of 'what if' scenarios with the possible consequences and actions planned for, could form part of a pre-competition routine and so might not be viewed as a reactive coping behavior.

In support of recent empirical findings, coping behaviors fluctuated and were not always consistent with trait coping disposition. Giacobbi and Weinberg (2000) suggested that coping style would remain the same, while coping strategy might change; however, the findings of the present study support the notion that coping changes as a function of the situation (Crocker and Isaak, 1997; Holt and Hogg, 2002), and may well include strategies that are not generally used. For example, although the participant had indicated a preference for problem-focused coping, and indicated seeking social support for instrumental reasons as a primary coping style, during competition he showed a preference for seeking social support for emotional reasons. When the depression score was above the mean, the player reported using more emotion-focused strategies, especially in the post-competition assessment.

Davidson and Suls (1999) explained this phenomenon, stating that emotion-focused coping is used when experiencing intense emotions, which have been used to vent the physiological effects, prior to adopting a more positive problem-focused approach. There is a need for further research to advance the understanding of the dynamic nature of coping behaviors and their relationship with mood.

CONCLUSION

The present study addressed this topic from a transactional perspective whereby the ambient mood contributes to the interpretation of and reaction to events that in turn impact upon mood responses. Perceived important person-environment interactions suggested emotional responses influenced changes in reported scores on the BRUMS. The important interaction prompted changes to be made to performance goals and self-efficacy for goal achievement. Coping behaviors were comparatively consistent with coping disposition, but supported the notion that coping behavior is influenced by mood state, and changes as a function of the perceived situation. Future research should aim to test the model further in larger populations and in a variety of sport and exercise activities.

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KEY POINTS

- Findings demonstrate the transient nature of mood states during competition.
- The paper proposes a transactional model of mood, which facilitates the exploration of mood changes over time.
- Mood states at one point in time will influence the interpretation of situational factors, which combine with emotional responses to form subsequent mood states.
- Findings support the notion that a difference between the perceived progress toward a goal and the internally expected rate of progress will elicit an emotional response.

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