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Metamotivational States During Canoe Slalom Competition: A Qualitative Analysis Using Reversal Theory

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Fifty post-event interviews with 9 elite male slalom canoeists were analysed using a modified version of the Metamotivational State Coding Schedule (Potocky, Cook & O'Connell, 1993). Participants reported 7 of the 8 metamotivational categories posited by reversal theory (Apter, 1982). All participants consistently experienced autic mastery (self focused control) although they varied in their tendency to exhibit a telic (serious and future oriented) or paratelic (spontaneous and present focused) orientation. Most were willing to conform to competitive norms although there were several instances of negativism. Participants' experience changed (or reversed) at different stages of the competition in response to errors or external events. Above average performances occurred more frequently when participants' experience was consistent with paratelic autic mastery. Implications for coaches and practitioners are discussed.

The last decade has seen the emergence and growth of sport psychology research based on the subjective experience of athletes prior to, during and after competition (e.g., Orlick & Partington, 1988; Gould, Ecklund

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& Jackson, 1992; Gould, Jackson & Finch, 1993; Kreiner-Phillips & Orlick, 1993), along with an increasing recognition of the merit and flexibility of these qualitative approaches (Krane, Andersen, & Strean, 1997). The methodologies used have been drawn from those developed in related social sciences, particularly sociology. Typically researchers have used an inductive analysis of interview data to identify and extract experiential themes, that have then been synthesised into a hierarchical structure to create a schema of the athlete's experience. For example Gould et al (1992) interviewed Olympic wrestlers and identified raw data themes such as "being totally focused on the match" and "concentrating throughout the match" that were clustered to form a higher order theme of total concentration, that was in turn one factor within an overall dimension of optimal mental state. The athlete's experience was not interpreted in order to fit or justify a particular theoretical model, nor was it used to develop a high level grounded theory (Glaser & Strauss, 1967).

Interpretational analyses such as these, where researchers develop their own organisation in order to make sense of their data, have been the most popular qualitative approach within sport psychology (Cote, Salmela, Baria & Russell, 1993). Tesch (1990) contrasts interpretational analyses with structural analyses, in which researchers attempt to uncover an underlying structure. Interpretational analysis develops theory from the ground up, structural analysis tests theory from the top down. The strength of an interpretational approach is that it offers scope for a true grounded theory to emerge, while a structural approach offers greater potential for theory testing across a range of environments. The weakness of a structural approach is that it may create a positivistic bias within the research that fails to fully uncover an individual's experience and tacit knowledge, so that data is ignored or distorted in order to fit a pre-determined model.

Given Strean and Roberts' (1992) call for the greater use of general psychological theories within a sports context, rather than the development of new sports specific theories, it is surprising that so few qualitative studies have attempted to test or develop theories rather than describe and catalogue experiential themes. The current study applies a structural qualitative approach in order to explore reversal theory, originally developed by Apter (1982) and since the subject of growing research attention and theoretical development (see e.g., Apter, 1989; Kerr, Murgatroyd, & Apter, 1993; Kerr, 1997).

Also known as structural phenomenology, reversal theory posits that while subjective experience is dynamic and inconsistent it can be categorised according to a clearly demarcated structure. This structure comprises four pairs of metamotivational states, a concept developed by Apter (1982) to describe "ways of being" that determine the nature of an individual's emotional experience and subsequent motivation. Two pairs of metamotivational states are each based around two primary dimensions—the experience of the self and the experience of relationships with others. Each pair is bistable, meaning that an individual can only experience one or the other polarity of each pair at a given time. At any given time,

some metamotivational combinations will be more salient than others and changes, or reversals, between polarities can occur. An awareness of metamotivation allows predictions to be made relating to an individual's motivation, emotional response and likely behavior. The structure of experience provided by reversal theory is now discussed in more detail.

The telic—paratelic and conformist—negativistic metamotivational pairs both provide a structure for the individual's experience of, and preference for, different intensities of emotional experience. Although the term felt arousal is used to describe emotional intensity within reversal theory, this refers to experiential rather than physiological levels of arousal. In the telic state an individual prefers to avoid felt arousal and seeks to resolve intense experiences as quickly as possible. Increases in felt arousal create unpleasant anxiety. As a consequence an individual's motivational preference will be for activities that achieve important results rather than those that are spontaneous or "just for fun." Pleasure comes from feeling relaxed after successfully completing a task. By contrast, in the paratelic state an individual seeks to increase felt arousal—they feel bored and restless when nothing much is happening and pleasure comes from intense emotional experience. They are motivated towards the sensations of immediate activity and less concerned with the consequences.

Another dimension of experience is added by the inclusion of negativist and conformist metamotivational states. The negativist state refers to an individual's desire to react against prevailing norms, to be autonomous and "go against the flow." The conformist state manifests as a desire to respond "appropriately" and follow the written or unwritten rules applying in a particular context. A combination of the telic—paratelic and negativist—conformist dimensions allows a fuller description of emotional experience. For example high felt arousal is experienced as anxiety in the telic—conformist combination, or as anger in the telic—negativist combination. Conversely high felt arousal in the paratelic—conformist state will result in pleasant excitement, but in the paratelic—negativistic combination an individual is likely to feel rebellious and enjoy breaking rules or flouting authority (see e.g., Kerr, 1994). The somatic emotions are illustrated in Table 1.

The remaining two pairs of metamotivational states are related to the nature of transactional outcomes in relationship to others. These are the mastery—sympathy and autic—alloic states. In the mastery state one is oriented towards a desire for control or domination, while in the sympathy state one is oriented towards being liked by, or nurtured by the other. In the autic state one is self-centered and gains pleasure or displeasure from what happens to oneself. The converse occurs in the alloic state when pleasure or displeasure depends on the other's experience. Winning leads to pride and loss to humiliation in the autic mastery combination, while in the alloic mastery combination winning is shameful and not as preferable as modestly allowing the other person to succeed. Receiving help is welcome in the autic sympathy combination but not in the alloic sympathy combination when it results in unpleasant guilt. The full range of

Table 1
Somatic emotions arising from metamotivational combinations at different levels of felt arousal

State combination	Emotion	
	Felt arousal	
	Low	High
Telic conformity	relaxation	anxiety
Paratelic conformity	boredom	excitement
Telic negativism	placidity	anger
Paratelic negativism	sullenness	provocativeness

Note. Based on Apter, 1989.

transactional emotions that result from these metamotivational states are illustrated in Table 2.

The strength of reversal theory is that it offers a comprehensive model of human experience and allows for the integration of cognitive, motivational and affective factors. It satisfies Martens' (1987) call for an investigative framework based on introspection that also allows for testing and validation. From a practical perspective it offers the potential to explain, predict and manage a range of problematic sporting situations. Kerr (1993) has described a range of sport psychology interventions based on reversal theory, and the theory provides intuitively appealing explanations of many performance issues. For example, was Greg Norman's disastrous final round in the 1996 US Masters the result of a paratelic to telic reversal that brought with it increased anxiety and an inappropriate focus on the future outcome of the tournament?

Despite its phenomenological basis, early reversal theory sports research focused on questionnaire based studies of personality variables (Kerr, 1987) and group based pre and post event self report measures of

Table 2
Transactional emotions arising from metamotivational combinations at different levels of felt transactional outcome

State combination	Emotion	
	Felt transactional outcome	
	Loss	Gain
Autic mastery	humiliation	pride
Alloic mastery	modesty	shame
Autic sympathy	resentment	gratitude
Alloic sympathy	virtue	guilt

Note. Based on Apter, 1989.

felt arousal and telic state (e.g. Cox and Kerr, 1989, Kerr & Vlaswinkel, 1993). More recently Males and Kerr (1996) used a case study design to investigate the relationship between pre event emotions and performance in slalom canoeing competition. They found that there were few significant differences in unpleasant emotion prior to most participants' best and worst performances throughout a competitive season. Males and Kerr (1996) pointed to the methodological limitations of questionnaires for phenomenological research. Reversal theory suggests that individual's experience can change dramatically in a short time due to metamotivational reversals (Apter, 1982), so a questionnaire is only capable of an imperfect snapshot of the athlete's experience. Qualitative methods are therefore necessary to fully test reversal theory.

The purpose of the present study was to analyse interview data collected from individual elite performers in high level competition, using a structural analysis based on reversal theory. Although essentially an exploratory study, the following specific research questions were formulated:

1. What metamotivational state combinations occur before, during and after sports competition?

There is little available research in regard to the states experienced during competition. In terms of motivation, Kerr (1987) found that elite and professional athletes are more likely than amateurs to experience a telic than a paratelic orientation. This finding makes sense given the need for seriousness and long term planning inherent in elite level sport. Participation in organised competition suggests greater willingness to conform rather than to rebel, so negativism is likely to be rare. Autic mastery should be the most salient transactional combination within individual competitive sport because the competitor, by definition, seeks power and control for him or herself.

2. Do individuals experience consistent patterns of metamotivational state combinations across different events?

Apter (1982) suggests that reversals are triggered by contingent environmental events and internal processes of frustration and satiation. The external demands of different levels of competition may lead to different patterns of experience, although it is recognised that elite athletes are generally skilled at consistently managing their mood and attention (Moran, 1996).

3. Is there a relationship between metamotivational state combinations and performance?

The attributes associated with a telic state such as seriousness and desire to achieve would appear to be beneficial during practice and before a competition. Increased felt arousal is however experienced as anxiety in the telic state, raising questions about the need for coping strategies or even paratelic reversals that allow a more facilitative experience of excitement. During a performance an athlete could well benefit from a paratelic state that allows for greater spontaneity and focus on the present moment. The experience of flow and effortless performance (Csikszent-

mihalyi, 1990) has been described in reversal theory terms as a paratelic mastery combination (Rea, 1993).

Method

Participants

The nine participants were male slalom canoeists. All were serious competitors who committed significant efforts to their sport. Only one had full-time employment. All had competed internationally, three at Olympic level and five were World Championship or World Cup medal winners. They were ranked in the top ten in their country and they were the main contenders for the four places on their national team to contest the 1993 World Championships. Three went on to win individual and team medals in this event, the most successful ever showing by their country. The mean age was 25.2 years at the commencement of the study (SD 2.2, range 23.2–29.1 years), and the average length of experience in the sport was 10.1 years (SD 1.0, range 9–12 years).

Design

Each paddler was interviewed soon after the completion of each slalom event of a full competitive season, beginning with early local events, moving to national team selection trials and culminating with the World Championships. All events comprised an international standard field, as assessed by an independent national coach, and the winner of each race was a highly ranked athlete.

The first author carried out all interviews and was present at all events in his capacity as a national team coach. The interviewer was a former international canoe slalom competitor with a detailed understanding of the demands of the sport. His interview and communication skills were developed in counselling training and during professional work in personnel and organisational environments. Participants were given a guarantee of confidentiality and an assurance that information gathered in interviews would not be passed on to other coaching staff or used for team selection purposes. They knew they were free not to be interviewed and several exercised this right at different stages of the research program.

In most cases the interviews took place on the same day as the event, often within an hour of the conclusion of the race. The remainder of interviews occurred within the next 24 hours. Each interview lasted between twenty and forty-five minutes, depending on the participant's availability and other demands within the competitive environment. Some took place on a river-bank, some in a car while travelling to catch a plane, others while participants were dealing with the joys of success or the pain of failure. Inevitably the duration and depth of interviews varied and this was considered an unavoidable factor in field research of this kind. Because of variations in the availability of each athlete and their selection or non-selection in the national team, which influenced which international events they attended, a complete set of nine interviews was obtained for three canoeists. These three were the most successful of the

entire group, gaining selection to compete in the world championships. The remainder were interviewed on at least four occasions and a total of fifty interviews were completed.

A sports-specific interview schedule was adapted from O'Connell, Cook, Gerkovich, Potocky & Swan's (1990) ex-smokers temptation interview and piloted at a pre season training camp. The schedule was designed to elicit specific information to allow the categorisation of the participant's responses according to reversal theory constructs. Where possible and appropriate the interviewer departed from the schedule to allow a more in-depth investigation of the athlete's experience. The interview schedule is available from the first author.

Data Analysis

Tape-recordings of all interviews were transcribed and then checked for accuracy before coding using a modified version of the Metamotivational State Coding Schedule (MSCS) (Potocky, Cook & O'Connell, 1993). O'Connell and her colleagues originally developed this procedure to classify the reported experience of relapsed and ex-smokers and it has since been used to analyse interview data from individuals engaging in unsafe sex and people with eating disorders. Content validity of the MSCS was established through independent review by four individuals who were well-versed in reversal theory, including the theory's originator Michael Apter. The review process ensured that the coding criteria were consistent with the structure and definitions used within reversal theory. Sports events fulfil the main requirements identified by Potocky et al., (1993) for the successful application of the MSCS; they can be clearly pin-pointed in time and involve intense emotional experience.

The coding process first involved the identification of coding units, defined as a distinct periods of time in a given environment during which the participant reported a single goal and experienced only one combination of metamotivational states. A change in environment, a different objective, or a change in reported emotional experience constituted a change in coding unit. A typical interview contained between five and seven coding units.

A separate coding sheet listing predetermined criteria was used for each coding unit. The first section required the coder to decide whether the participant was in a telic or paratelic state by first identifying whether a goal was present, and if so what it was. The coder then examined the text paying particular attention to the type of adjectives used and rated each of a set of phenomenological descriptors on a scale of 1 to 3, where 1 indicated the characteristic was not present or barely identifiable, 2 indicated the characteristic was present, and 3 indicated it was both present and strong. These numerical ratings were used to help make a decision on the categorisation of the participant's experience. The telic/paratelic descriptors were job to do; fun to do; result oriented; thinking ahead; sensation/present oriented; activity with important consequences, activity enjoyable in itself; trying to accomplish something important; under pres-

sure. Subjective assessments using a scale of low, medium and high were then made of the degree of felt significance and felt arousal. Hedonic tone was rated as pleasant, neutral, or unpleasant. Finally the four somatic emotions of boredom, calmness, excitement or anxiety were rated using the 1 to 3 scale described above.

A similar process was then used for the negativist/conformist dimension. The first decision addressed whether or not the participant reported awareness of a particular rule or rule system in place. This was usually assured given the paddler's participation in a well structured race environment with established competition rules. Next was an assessment of a further set of descriptors: stubborn; being difficult; rebellious; angry; guilty; wanting to break rules; wanting to follow rules. The final judgement was of the level of perceived negativism, based on the degree to which the participant expressed either contentment at following the rules or a desire to rebel. Any expression of anger was taken as a cardinal sign of negativism.

The mastery/sympathy dimension required a primary judgement on the participant's perception of the situation, whether it was seen in terms of a competition, trial or struggle (mastery) or harmony, unity, sensitivity (sympathy). The mastery descriptors were strong, self-disciplined, aggressive, weak, indulgent, wimpish. The sympathy descriptors were sensitive, caring, insensitive, uncaring.

Finally the autic/alloic dimension required a decision on the source of the participant's "self tone"—that is whether they placed primary importance on their own or other's well-being. The final decision addressed whether the participant felt they were gaining or losing in the situation and whether that felt pleasant or unpleasant.

After all coding units were completed the results were transferred to a summary sheet that also contained contextual information about the race performance and the interview.

A preliminary sample of 15 interviews, some 30% of the data, was analysed. An independent coder, highly experienced in the methodology, then coded the same selection blind to the outcome of the first coding. The process of discussion and reconciliation defined by O'Connell et al. (1991) was then used to produce a specific coding protocol for this sample. This resulted in kappa inter-rater reliability statistics (Cohen, 1960) of 0.94 for telic/paratelic, 0.81 for negativistic/conformist, 1.00 for mastery/sympathy and 1.00 for autic/alloic decisions. As these are all in excess of the 0.70 cut-off commonly recommended (Schweigert, 1994) the coding protocol was considered reliable. The remaining interviews were then analysed using the newly established protocol.

Results and Discussion

The initial level of analysis identified patterns in the participants' experience of metamotivational states throughout the competitive period. Individual coding units from all interviews across the nine events were sorted into one of four categories.

Pre-event: all coding units detailing experiences prior to the commencement of competition up to and including being on the start line. This included arrival at the competition venue, meeting with coaches, viewing the course, and pre event physical and mental preparation routines. This category contained 103 coding units. An excerpt from a pre event coding unit is provided to give a flavour of the content. I denotes the interviewer's comments. This unit was coded as paratelic conformity and autic mastery:

I: Now lets talk about what happened just before your first run . . . how you were feeling just before your first run?

E: Pretty relaxed, pretty happy, . . . we were joking around a lot,—I don't know if you'll put that down or not (laughs)

I: I'll just write down whatever you say (laughs) Is that the way you wanted to feel?

E: No I think I should have been a bit more focused in

I: And the way you were feeling was it pleasant or unpleasant?

E: No it was pretty pleasant, it was cool

During performance: all coding units describing the participants' thoughts and feelings from the start line to the end of their performance on the slalom course. This category contained 57 coding units and another excerpt follows, detailing a shift from a paratelic conformist to a telic negativistic state following an error. The autic mastery combination remained salient although the loss of control created unpleasant affect in this state.

C: That broke my concentration a little bit—I got a penalty on (gate) seven and dropped low and I thought 'oh shit—out of the window' and I started to evaluate really. For that one second after you have made a mistake you are thinking about the mistake and not where you should be going next and things like that—what happened then is that I lost the run of the boat a little bit—I started to eddy out a little bit and it had an avalanche effect sort of thing.

I: So what was happening to your mood as these mistakes were building up?

C: I was getting a bit blasé toward the end really, as soon as soon as I took the penalty, then I knew that I wasn't going to win . . .

Between runs: all coding units dealing with the participants' response to their first competition run such as hearing the results, reviewing their performance either alone or with a coach, resting, eating, or socializing. This category contained 32 coding units. The following example was coded as telic conformity and autic mastery.

I: Now, what about the time between your runs. You said before that you came back here?

E: Yeah, the basic thing was I wasn't focusing on the race so I thought I'd better come back to the van, took a sleep, got myself away from messing around . . .

I: When you say get focused does that mean getting more serious about what you do or doesn't that describe it?

E: Not serious, I think its like excited in the right way, like know what I mean? Like messing around in the cafe is a good laugh, so "excited" but focusing that excitement on the right things, like I wasn't doing that before.

Post race: all coding units dealing with participants' behaviour and reactions at the conclusion of the event. This often involved an assessment of their performance, the associated race result and a consideration of the consequences. This category contained 70 coding units and an example, coded as telic conformity and autic mastery follows:

I: Anything else that you think is important about your performance today?

D: I enjoyed it I've been doing a lot of racing the last couple of weekends and travelling, so for me the challenge was to stay with a good performance because I've been a bit tired and I didn't really want to get on here and be off the pace and demoralised because I was tired. I wanted it to be worthwhile, we've come a long way out of the way to come here just to do two runs today, two tomorrow. I feel like I've achieved my goal in that sense . . . I'm on target for a few months time so its been worthwhile.

The following figures illustrate the proportion of reports of metamotivational state combinations during each of these coding unit categories. The primary metamotivational state combinations underlying the somatic and transactional emotions are shown separately.

Figure 1 indicates that the telic conformity combination was the most frequently reported at any stage of competition, although the proportion ranged from 59.6% during the actual performance to 84.4% in the period between competition runs. The second most frequently reported category was paratelic conformity, most often reported during performance (35%) and least often in the post race period (7.1%).

Participant E reported pre event paratelic states at all events. The remaining participants reported both telic and paratelic states in the pre event periods. Participants D, G and H reported no paratelic combinations during the pre event periods and participants B and I only reported single instances.

Negativistic states were reported infrequently, perhaps because all the participants were experienced competitors who saw no advantage in rebellious behaviour. Conversely conformity could be considered adaptive to a good performance because it contributed to maintaining emotional control and following the race rules. There were no reported instances of negativism between runs and the greatest proportion (14.3%) occurred in the post race period. Five of the seven negativist combinations occurred during events 4 and 5, the national team selection races. These events were critical for all the athletes as the results decided which of them could compete in the World Championship later in the season. Participant H experienced anger and frustration due to perceived errors by race officials, as well as producing his poorest performances of the season. Paratelic negativism was reported at this event by Participant C, manifested as a desire to provoke other competitors and "to wipe the smile off his face."

Figure 2 shows that the predominant reported transactional combination was autic mastery, suggesting that the participants' primary concern was to seek control over themselves and their environment.

During the between-run period the only exception was autic sympathy,

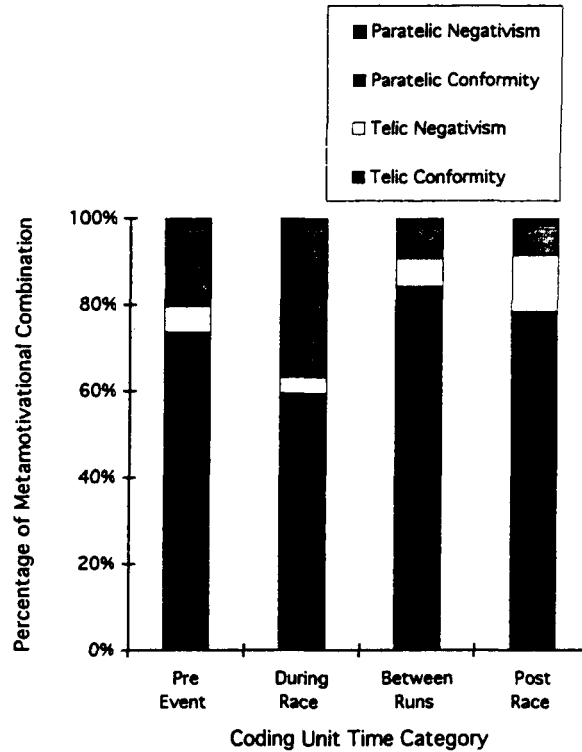


Figure 1. Proportion of somatic metamotivational state combinations reported in Pre Event (n = 103), During Race (n = 57), Between Runs (n = 32) and Post Race (n = 70) coding unit categories. As the number of individual coding units within each category varies, percentages are shown to standardise the comparison.

occurring for 16.6% of coding units. These instances related to the competitor seeking sustenance, rest or medical treatment before they raced their second runs. This behaviour was oriented towards a reversal back to the autic mastery state with the resumption of competition. Consider the following example from participant D, event 4:

- I: Between your runs what was the most important thing on your mind?
- D: To recover really because my neck and back have been giving me some trouble, so I rested, read the paper and took it easy, because I knew that on the second runs then I had to go for it a bit more.

The two post race occurrences of sympathy states were both reported by Participant C. On one occasion he reported feeling sorry for those who had not qualified for the national team (alloic sympathy), a temporary reversal from his prevailing sense of pride (autic mastery) at having qualified himself. The other occasion occurred when he professed to feeling sorry for himself after a poor performance (autic sympathy).

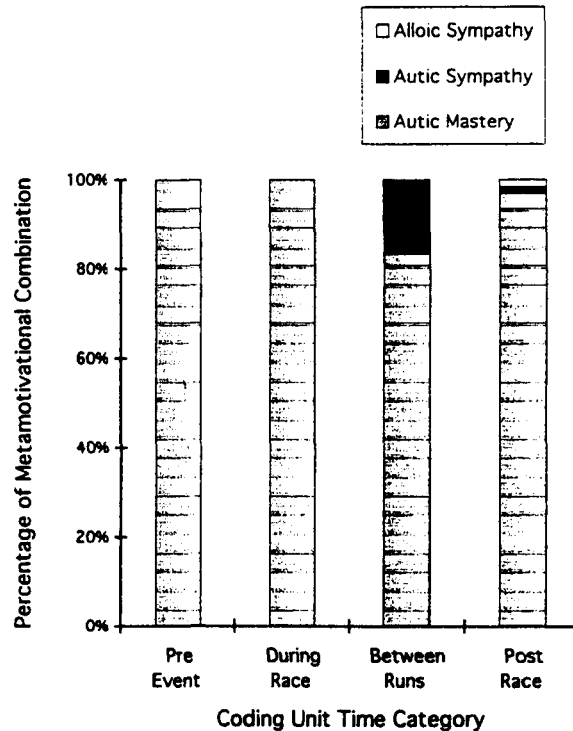


Figure 2. Proportion of transactional metamotivational state combinations reported in Pre Event ($n = 103$), During Race ($n = 57$), Between Runs ($n = 32$) and Post Race ($n = 70$) coding unit categories. As the number of individual coding units within each category varies, percentages are shown to standardise the comparison.

The one metamotivational category not reported by any participant was alloic mastery, the desire to help others experience control. This combination would presumably be experienced by coaches, friends or physiotherapists who provided the competitors with support.

In order to explore the relationship between metamotivation and performance, the index developed by Males and Kerr (1996) for assessing slalom performance was used. Competitors' scores for each race were first converted to a percentage of the winning score then standardised by converting them to ipsative z scores. These indicated the degree to which each performance was above or below each competitor's own average for the season. The z scores were then split into two categories of above average (negative z scores) and below average (positive z scores).

The pre event and during event periods were considered the most salient to the actual performance itself. The post run category was excluded because it was assumed that participants' experiences after the race would not have had any effect on their previous performance. Transactional states were not considered because of their consistency—regardless of the

Table 3
Percentage of paratelic and telic states reported prior to and during above and below average performances

Coding category	Metamotivational state	Performance level	
		Below average	Above average
Pre-event	Telic	30.0	38.0
	Paratelic	14.0	18.0
During Performance	Telic	29.7	27.0
	Paratelic	13.5	29.7

subsequent performance level all the participants demonstrated the autic mastery combination before competition. Similarly the participants were almost invariably conformist with very low occurrence of negativistic states. This meant that the main focus was on the pattern of telic and paratelic combinations reported before and during the above and below average performances, illustrated in Table 3.

There was no difference between above and below average performances in the pre event occurrence of paratelic and telic states. More than twice as many above than below average performances occurred when participants reported the paratelic conformist/autic mastery state combination. The occurrence of telic states did not vary on the same comparison. Some 26% of participants could not provide detailed descriptions of their experience during their competition runs. In most of these cases, they simply said of good performances that they could not remember much about the actual run itself and were unable to provide significant detail when questioned further. As this level of detail did not meet the coding criteria it was not included in the analysis. This type of experience is however strongly suggestive of a paratelic conformist/autic mastery state, where the individual is totally absorbed in mastering the task at hand. It is also consistent with definitions of flow states associated with enhanced performance (Csikszentmihalyi, 1990), lending support to the contention that better performances often occurred after participants reversed from a telic mastery state before the run to a paratelic mastery state during the run itself.

Some methodological concerns need to be addressed within this study. Lincoln and Guba (1985) recommend the examination of naturalistic data for trustworthiness; the extent to which data is credible, transferable, dependable and conceivable. Dependability and conceivability of this data are both enhanced by the application of the MSCS which provided a clear audit trail and the potential for cross-checking. The credibility of this study is strengthened by its nine month duration and repeated interviews yet negative case analysis, one of the most important methods of determining credibility, is complicated by the nature of reversal theory. Be-

cause it is a dynamic phenomenological theory, negative cases can be explained by the occurrence of reversals. This presents a major limitation to testing reversal theory using conventional qualitative methods. These and other methodological issues are discussed in more detail elsewhere (see Males, in press).

A final consideration is the extent to which these findings are useful to an applied practitioner or coach. The results support Kerr's (1993) contention that some strategies used by athletes to ensure their preferred state of mind maintain or change their metamotivational state. For example when experiencing a telic state and high felt arousal, participants reported tension stress in the form of unpleasant anxiety and pressure. At these times their coping efforts involved the use of breathing and visualization techniques that reduced the unpleasant experience yet maintained their preferred telic orientation.

In other cases paddlers enjoyed the paratelic "buzz" of racing, eagerly anticipating the pre-event feelings and experiencing these as exciting and pleasurable. Participant E described his sensations just before and during event 1 as: (being) "pretty high all the way, it was good." Others used specific strategies that seemed to be designed to engender a paratelic experience around their participation in major events. These strategies included reducing the importance of the event by "putting it into perspective compared to the rest of my life," listening to loud rock music to in order to "arouse emotions and feel more aggressive," concentrating on aspects of technique and "in the moment" awareness rather than dwelling on the future results, self talk to reinforce process rather than outcome goals, and distraction by chatting to other competitors or officials.

The ability to trust that the unpleasant experience of nervousness (telic high arousal) just prior to the start of the performance can reverse to excitement and focus (paratelic high arousal) is also important. So rather than reducing the intensity of the pre-event experience, reversal theory provides a rationale for it to be welcomed as an appropriate aspect of successful performance.

Whether preferring a telic or paratelic approach, autic mastery is a prerequisite orientation and other transactional combinations are likely to be unhelpful in the competitive context. Negativistic states were associated with poorer performances, so athletes may benefit from strategies, including the ability to control anger, that maintain a conformist orientation.

This study has explored reversal theory using a structural analysis of qualitative data drawn from a competitive sports environment. The findings are consistent with many of the basic premises of reversal theory and now clearly demand to be tested in a variety of sports at a range of skill levels. The methodology complements previous questionnaire-based laboratory studies and makes use of the phenomenological basis of reversal theory to better understand the affective basis of sports performance and motivation, particularly within the sport of slalom canoeing.

REFERENCES

- Apter, M. J. (1982). *The experience of motivation: The theory of psychological reversals*. London: Academic Press.
- Apter, M. J. (1989). *Reversal theory: Motivation, emotion and personality*. London: Routledge.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *XX*, (1), 37–46.
- Cote, J., Salmela, J. H., Baria, A., & Russell, S. J. (1993). Organizing and interpreting unstructured qualitative data. *The Sport Psychologist*, *7*, 127–137.
- Cox, T., & Kerr, J. H. (1989). Arousal effects during tournament play in squash. *Perceptual and Motor Skills*, *69*, 1275–1280.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper and Row.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine.
- Gould, D., Eklund, R. C., & Jackson, S. A. (1992). 1988 US Olympic wrestling excellence: II. Thoughts and affect occurring during competition. *The Sport Psychologist*, *6*, 383–402.
- Gould, D., Jackson, S., & Finch, L. (1993). Sources of stress in national champion figure skaters. *Journal of Sport and Exercise Psychology*, *15*, 134–159.
- Kerr, J. H. (1987). Differences in motivational characteristics of 'professional,' 'serious amateur' and 'recreational' sports performers. *Perceptual and Motor Skills*, *64*, 379–382.
- Kerr, J. H. (1993). An eclectic approach to psychological interventions in sport: Reversal theory. *The Sport Psychologist*, *7*, 400–418.
- Kerr, J. H. (1994). *Understanding soccer hooliganism*. Buckingham, England: Open University Press.
- Kerr, J. H. (1997). *Motivation and emotion in sport reversal theory*. Hove, England: Psychology Press.
- Kerr, J. H., Murgatroyd, S. J., & Apter, M. J. (Eds.) (1993). *Advances in reversal theory*. Amsterdam: Swets and Zeitlinger B.V.
- Kerr, J. H., & Vlaswinkel, E. H. (1993). Self reported mood and running under natural conditions. *Work and Stress*, *7*, 161–178.
- Krane, V., Andersen, M. B., & Streat, W. B. (1997). Issues of qualitative research methods and presentation. *Journal of Sport & Exercise Psychology*, *19*, 213–218.
- Kreiner-Phillips, K., & Orlick, T. (1993). Winning after winning: The psychology of ongoing excellence. *The Sport Psychologist*, *7*, 31–48.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Males, J. R. (in press). Sport performance research: The combined use of qualitative and quantitative data. In J. H. Kerr (Ed.) *Motivation in sport: Applying reversal theory*. Chichester, England: John Wiley and Sons.
- Males, J. R., & Kerr, J. H. (1996). Stress, emotion and performance in elite slalom canoeists. *The Sport Psychologist*, *10*, 17–36.
- Martens, R. (1987). Science, knowledge, and sport psychology. *The Sport Psychologist*, *1*, 29–55.
- Moran, A. P. (1996). *The psychology of concentration in sport performers: A cognitive analysis*. Hove, England: Psychology Press.
- O'Connell, K. A., Cook, M. R., Gerkovich, M. M., Potocky, M., & Swan, G. E. (1990). Reversal theory and smoking: A state-based approach to ex-smokers highly tempting situations. *Journal of Consulting and Clinical Psychology*, *58*, 489–494.

- Orlick, T., & Partington, J. (1988). Mental links to excellence. *The Sport Psychologist*, 2, 105-130.
- Potocky, M., Cook, M. R., & O'Connell, K. A. (1993). The use of an interview and structured coding system to assess metamotivational state. In J. H. Kerr, S. J. Murgatroyd & M. J. Apter (Eds.), *Advances in reversal theory* (pp. 137-150). Amsterdam: Swets and Zeitlinger B.V.
- Rea, D. W. (1993). Reversal theory explanations of optimal experience. In J. H. Kerr, S. J. Murgatroyd & M. J. Apter (Eds.), *Advances in reversal theory* (pp. 75-88). Amsterdam: Swets and Zeitlinger B.V.
- Schweigert, W. A. (1994). *Research methods and statistics for psychology*. Pacific Grove, California: Brooks/Cole Publishing Company.
- Strean, W. B., & Roberts, G. C. (1992). Future directions in applied sports psychology research. *The Sport Psychologist*, 6, 55-65.
- Tesch, R. (1990). *Qualitative research analysis types and tools*. New York: Falmer Press.

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