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VOLUNTARY CONTROL OF METAMOTIVATIONAL STATES IN REVERSAL THEORY

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Under traditional reversal theory, shifts or reversals in metamotivational states (for example between the telic and paratelic) are taken as fundamentally involuntary. That is, reversals are seen as a function of environmental influences or factors such as satiation and frustration. It is noted that even under this view the individual enjoys a kind of secondary control and responsibility over metamotivational states grounded in the autonomous capacity to place him or herself in activities or situations which increase the probability that a preference for a low or high-arousal state will be activated. In addition, the possibility of direct, voluntary control over metamotivational states is explored.

COGNITIVE SYNERGY IN HUMOUR AND ART

Michael J. Apter, Georgetown University & Apter International

The notion of cognitive synergy goes back to the beginning of reversal theory, but it has not received the same attention as other concepts in the theory. By "cognitive synergy" is meant the experience of mutually-exclusive characteristics in relation to the same identity. It is hypothesised that the arousal produced by such "logic escaping" experiential paradoxes and puzzles is enjoyed in the paratelic state but disliked in the telic state where it is experienced as annoying confusion or irritating incongruity.

One major area of human experience which involves synergy is that of humour. From puns, through jokes of all kinds, to slapstick, one sees a given identity (a word, an idea, a person) as representing incompatible qualities. For example in a pun a word has incompatible meanings, while in slapstick a person is treated as an object or machine. Specific examples will be given.

Another major area of experience involving synergy is that of art. In fact, various kinds of synergies enter into artworks, including signifier/signified synergies, ambiguity, beautiful/ugly synergies, metaphor, and structural synergies. For example Hamlet and the Mona Lisa both play on certain kinds of ambiguity. Examples from visual art will be provided for each of these types of aesthetic synergy.

While humour and art share synergic qualities, and the arousal produced by both is enjoyed in the paratelic state, they differ in one fundamental respect, and this explains the different kind of "feel" and pleasure that each invokes. In art the identity involved is seen as going beyond, and in some way transcending, itself. In humour, on the contrary, the identity turns out to be less than, and inferior to, what it initially purports to be. This crucial difference will be discussed, making use of further illustrations of both art and humour.

THE DEVELOPMENTAL ORIGINS OF MOTIVATIONAL STATES

Michael J. Apter, Georgetown University & Apter International

Where do metamotivational states come from? How early in the development of an individual are they experienced? Does an understanding of their origins give us any insights into the adult forms of the states? These and other related ontogenetic questions will be explored in this paper. It will be argued that all the metamotivational states are in fact represented from the beginning of life in the form of "proto-functions"

- primitive tendencies which involve the expression of certain basic, contrasting, innate abilities. A central feature of individual development is the maturation of these proto-functions into their full adult metamotivational forms. It will be further shown how the proto-functions from which emerge the telic, negativistic, mastery, and autic states (i.e. one from each pair) are essential for the development of a normal and healthy sense of identity. And it will be suggested that all the proto-functions remain in some form as part of the very fabric of conscious experience in adulthood, which accounts in part for the way in which subjective experience has continuity and coherence despite the discontinuities resulting from the reversal process.

MOTIVATIONAL PROFILES OF MALE INTERCOLLEGIATE BASKETBALL PLAYERS

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& John Kerr, University of Tsukuba, Japan

The Motivational Style Profile (MSP) was administered to twelve elite university basketball players in advance of an international tournament. Also, a sport and exercise-specific MSP version (MSP-SE) was completed just before and immediately after the tournament. Furthermore, the State of Mind Indicator for Athletes (SOMIFA) was filled out immediately before and after each of the three matches. The purposes of the study included the examination of the relationships among general motivational style, metamotivational orientations towards sport and motivational states associated with performance, and the study of fluctuations in the repeated measures in relation to their contexts and circumstances.

The MSP results showed a telic, arousal-avoiding, strongly conformist, slightly autic and sympathy oriented group with a very optimistic outlook. There were substantial differences between the MSP-SEs (telic, arousal-seeking, mastery, pessimism and salience) before and after the tournament, but many of the correlations with the corresponding MSP variables were high and significant. The SOMIFA analyses showed that the athletes' pre-game 'worked up' levels were equal to or lower, and their actual game levels higher than desired, but this varied with the anticipated difficulty of the specific matches. They wanted to be more alert and energetic than they felt they were in all six tests. Metamotivational states varied little across matches, but there was an increase in the number of reported alloic-mastery and a decrease in autic-mastery states as the tournament progressed.

MOTIVATIONAL STYLES OF MALE AND FEMALE EXERCISE DEPENDENT ATHLETES

Michelle Blaydon, Koenraad Lindner, University of Hong Kong

& John Kerr, University of Tsukuba, Japan

The study of exercise dependence is drawing increasing attention, but uncertainty remains about what the motives behind such excessive behaviour are, and how a dependence towards exercise manifests itself. The purpose of this investigation was to use a more general theory of personality, motivation and emotion (Reversal Theory, RT) to try and gain an understanding of the desires and underlying motives of individuals who show some kind of dependence on exercise. A sample of 203 male and female competitive triathletes from both elite (professional) and age-group (non-professional) categories completed the Motivational Style Profile (MSP), an exercise dependence questionnaire (EDQ) and the Eating Attitudes Test (EAT).

Results showed a strong relationship of the EDQ with training hours and with EAT scores. The female athletes displayed significantly higher average scores on the EAT suggesting that eating disorders may be more common in female exercise dependent athletes. The results also revealed two groups of high exercise dependence, of which one displayed a high EAT score and the other did not, which supports the notion that primary and secondary exercise dependence exist. The group as a whole showed strong tendencies toward Telic, Arousal Avoidance, Conformity and Mastery characteristics. These results largely support the views on exercise dependence from RT and by Yates (1985), who suggests that both of these behaviours can be identified under one label of "addiction". Although further investigation is needed, the strength of the results suggests that RT is a good theoretical base to further investigate the phenomenon of exercise dependence.

RORSCHACH TELIC AND PARATELIC SIGNS IN THE PROTOCOLS OF JAPANESE STUDENTS

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The Telic Dominance Scale, the Telic State Measure and the Rorschach were administered to twenty-seven Japanese students at the University of Tsukuba. Translated into English, each Rorschach protocol was categorized as telic or paratelic on the basis of which of the previously established telic and paratelic Rorschach signs were most frequent. As validity criteria, seven crucial measures (the TDS scales, and TSM Playfulness, Spontaneous, and Preferred Arousal) were used.

No relationship was found between Rorschach signs and the seven crucial measures: the mean differences are minimal and only three are in the predicted directions. Eliminating the only six students who show signs of negativism, on the assumption that the negativistic students may misrepresent themselves on questionnaires, new analyses were undertaken. With these analyses of the remaining twenty-one students, six of seven crucial measures are in the predicted directions, but none is statistically significant.

A final alternative line of inquiry is based on the hypothesis that the telic and paratelic Rorschach signs are all in fact paratelic signs, that is, that those who give more than the median number of telic and paratelic Rorschach signs are paratelic dominant, and those who give less than the median are telic dominant. Using this procedure for categorizing the protocols, all the crucial TDS and TSM measures are in the predicted directions, with the mean differences for TDS Planning Orientation and Total Telic being statistically significant. Analyses of the data found no support for the possibility that the paratelic dominant simply make more responses of all types to the Rorschach.

Discussion will center on attempting to explain these findings, and to argue that while unexpected, these final results suggest that a person's metamotivational dominance clearly influences how he or she responds to the Rorschach.

INTERPERSONAL PROCESS RECALL TECHNIQUES AS TOOLS FOR REVERSAL THEORY

Lee Branum-Martin, Jay Lee, Dale G. Pease,

& Juan Cremades, University of Houston, USA

Reversal theory presents a succinct structure for describing a wide range of desires and emotions, but data collection on these expansive psychological phenomena can become a problematic trade-off between analytic power and ecological validity. Methods of measurement must not disrupt the phenomena under study, nor be so unobtrusive as to be impotent. Interpersonal Process Recall (IPR) is a relatively simple and unobtrusive (although time-consuming) technique which may be a valuable tool to researchers in reversal theory. Although states have been coded in specific settings using structured interviews (Potocky, Cook, & O'Connell, 1993), IPR is a general approach and its techniques can be adapted to many different uses in psychological research. The current paper examines the value of IPR as a tool for eliciting thoughts and feelings which can be coded using the lexicon for reversal theory states (O'Connell, 1993) and phenomenological frames (Apter, 1993). A taping and coding protocol will be presented along with a case study narrative from an IPR session. The measurement qualities of the approach will also be discussed.

PLAYING WITH EMERGENCY: A CASE STUDY OF REVERSAL THEORY IN ART WORK

Kate Broom, University of Central England, Birmingham, UK

This paper examines the potential for applying Reversal Theory in the practice of art therapy in the Probation Service. An illustrated case study will be presented, where reversal theory was considered as a model for understanding process for a woman, fulfilling the requirements of a court order, and exploring the possibility of a diagnosis of Munchausen's Syndrome by Proxy (MSbP). The material reviewed traces an initial understanding of Reversal Theory and its potential application to the reversal of roles and motivation surrounding female parenting and abusive acts of mothering. A second relationship, between the client and medic, is taken as a demonstration of 'mastery' of medical management indicating the possibility of switching between 'patient and pretender'; the telic state of power over medical actions and the paratelic thrill experienced in the emergency of illness. It is proposed that the switch can be examined through paratelic play with art materials and images where 'mastery' takes on an alternative modality.

THE DESIGN AND VALIDATION OF A METAMOTIVATIONAL DOMINANCE SCALE FOR ACHIEVEMENT MOTIVATION EXPERIENCE

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Purpose: to develop a scale to measure the different types of achievement motivation experience.

Scale development: Four subscales were created (20 items each) to measure 4 metamotivational states: Autonomy - Self-determination (A) Heteronomy – Other-determination (H), Telic – Goal orientation (T), Paratelic – Process orientation (P). The construction of the scale allows us to assess also 4 modes of achievement motivation experience as a combination of metamotivational states within a person.

Reliability: Cronbach's alphas of each scale were good (> .80) Two or three factors were extracted within each scale.

Validation: was aimed mainly to show the relationship of 4 modes of experience within a person with different value orientations, motivation measures and mental health indicators.

In the Mode 1 (A + P) person is oriented toward independence, affection, creativity, personal growth, mental/intellectual satisfaction, and joyfulness. He/she has intrinsic motivation and positive correlations with self-actualization and self-esteem. In this mode there are negative relations with strivings for financial success, fame, self-prestige, attractiveness, achievement, introjection motivation and depression.

In the Mode 2 (A + T) person is oriented toward independence, reasonableness, self-control, courage, responsibility, self-development, and achievement. He/she has intrinsic motivation and high self-esteem. In this mode, person negative relates to external and introjected forms of motivation, depression, and politeness.

In the Mode 3 (H + T) person is oriented toward responsibility, benefactualness, painstakingness, politeness, financial success, self-prestige and fame, social contacts and achievement. In this mode, there are negative relations with intellectual satisfaction, independence, creativity, self-actualization, self-esteem, and life satisfaction.

In the Mode 4 (H + P) person tends to be condescending, joyful, honest. He/she is oriented toward social contacts, financial success, and fame. In this mode, there are negative relations with self-esteem, life satisfaction, and creativity.

The results are discussed in terms of RT, typology of achievement behavior, metamotivational dominance as a predictor of life-orientation, the reversal theory of achievement motivation experience.

THE APPLICATION OF SOME ELEMENTS OF REVERSAL THEORY IN EDUCATIONAL PROGRAMS

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Political and economic crisis in Russia caused by radical change in people's convictions was followed by the confusion of feelings, chaos of thoughts and haste of actions of people of all age groups and social levels. In this situation there emerges the most urgent need for social and psychological support of the people, especially for the young people - the future managers.

Research carried out by Russian psychologists from St. Petersburg Technical University (SPTU, 1995) has determined the psychological profile of a typical new Russian leader whose main personal characteristics occurred to be close to those of a child. J. Stevens research shows that the number of adult people who stayed in their psychological development on the stage of a child account for one third of the whole adult population of Earth.

All of the reasons mentioned above made it clear to us that a special educational program aimed at raising personal maturity level must be developed. To solve this problem it seemed to us that it could be interesting to use the Motivational Style Profile by M. Apter, Reversiveness level determination express method by S. Bachtiarova, J. Stevens tests, etc. The results of this research will be presented.

INDIVIDUAL DIFFERENCES IN RISK TAKING: A COMPARISON OF REVERSAL THEORY CONSTRUCTS AND OTHER PERSONALITY MEASURES

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Sexual risk behavior continues to be a concern for society at large. While information about risk-reduction measures is widely known, people continue to make decisions that run counter to their own best interests. Decisions to engage in behavior that result in increased risk are made by individuals who may be predisposed to engage in higher-risk behavior. These same individuals may also be more likely to engage in behaviors, such as drug use and drinking, that increase the likelihood their judgement about sexual activity will be impaired.

In order to address the complex relationships between individual difference constructs and situational factors, a structural model of sexual risk behavior was tested. The model proposes that sexual risk behavior would be explained by a combination of variables that included personality characteristics, attitudes and beliefs, and situational factors. The model hypothesizes that sexual risk behavior derives from the joint influence of the person's intentions, attitudes, and beliefs about condom use, and situational risk factors. These two factors, in turn, are derived from a second-order factor that represents the influence of personality as reflected by measures based on reversal theory constructs.

Results of the test of the hypothesized structural model will be reported. In addition, analyses addressing the direct influence of a variety of personality measures (e.g., paratelic dominance, impulsivity, rebelliousness) will also be reported.

THE ROLE OF REVERSAL THEORY IN MODERATING OCCUPATIONAL STRESS IN BRITISH POLICE OFFICERS, SPECIAL CONSTABLES, AND CIVILIAN POLICE SUPPORT STAFF

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Occupational stress is generally considered harmful, causing organisational problems and the development and maintenance of individual ill-health, and consequently, it must be reduced or negated. Central to current psychological interventions to alleviate work-stress is the assumption that negative attitudes to emotional expression may maintain and exacerbate psychological distress. Police officers are one occupational group that has received considerable research interest into the effects of occupational stress. However, this research has often been confounded by methodological and cultural problems (e.g., small and limited sample groups, no equivalent occupational group for statistical comparison, inappropriate application of US police research). UK police officers also often reported organisational factors as being more stressful than operational duties. This may result from officers' coping strategies (i.e. emotional distancing, humour), to minimise the emotional impact of their work. However, contrary to current assumptions, such strategies may be both adaptive and psychologically beneficial for some people. For example, some individuals may require (and therefore seek), high levels of arousal in their daily lives, such as via their chosen occupation. Reversal Theory postulates that some individuals may inherently need higher (i.e. paratelic) levels of arousal, compared with those seeking lower (i.e. telic) arousal levels.

The aims of the present study were to investigate, via a questionnaire battery: (i) the magnitude of telic and paratelic dominance between British police officers, Special (voluntary) Constables and civilian support staff; (ii) the extent and types of psychological problems experienced; (iii) the relationship between telic dominance and self-reported psychological problems; and (iv) the role of humour in alleviating stressful experiences. In early 1999, an anonymous questionnaire battery was distributed to all police officers, Special Constables and support staff, engaged in various police-related roles, and stationed within the same division of an English provincial police force (N'500). Measures respondents completed included: (i) Coping Humour Scale (CHS), a measure of the use of humour in coping with stress; (ii) Multi-Dimensional Sense of Humour Scale (MDSH), evaluating the use of humour across four dimensions; (iii) Telic-Dominance Scale (TDS), a measure of telic and paratelic-dominance states; and (iv) Employee Assistance Program Inventory (EAPI), a measure of common psychological problems reported by workers. Full data analysis will be reported, together with clinical implications for assessment and intervention.

THE STATE OF PLAY IN THE SITUATIONS VS. TRAITS DEBATE: REVERSAL THEORY'S CONTRIBUTION TO OUR UNDERSTANDING OF PERSONALITY

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The situations vs. traits debate, as such, was one particularly vigorous battle during the late 1960s and 1970s in a long and continuing war. That war is ostensibly about the scientific potency and credibility of theories that seek the determinants of behaviour within the person (particularly trait and type personality theories with their characteristically nomothetic orientation) as opposed to within the situation (particularly learning theories). The battleground was and is behavioural consistency. An uneasy truce was eventually declared which focused on the importance of the interactions between persons and situations in determining behaviour. Dispositional forces, however, have latterly been gathering strength around Costa and McCrae's "Big Five" banner. This paper superimposes the framework of reversal theory, with its particular focus on inconsistency and its idiographic orientation, on the parameters of the situations vs. traits debate. It illustrates some weaknesses and limitations of core positions within that debate, and conversely, some strengths and new horizons offered by reversal theory.

COGNITIVE SYNERGIES IN SPORT AND POP MUSIC VIDEOS

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Much of the previous work in reversal theory on cognitive synergy has focussed on popular pastimes like the arts (especially painting), humour (especially jokes and comic film), television and jazz. This two-part presentation will be concerned with cognitive synergy in two different popular pastimes: spectating at sport events (relatively unexplored) and watching pop music videos (previously unexplored). Attempts will be made to show that cognitive synergies can be found in both and that, when cognitive synergies are present, the activities become more interesting to spectators or observers. Discussion will include examples from a number of sport contexts of different types of cognitive synergies such as identity, make-believe or real/imaginary synergies. In the second part of the presentation, the audience will be asked to observe examples of pop music videos and to evaluate them for interest and more especially their content in terms of the presence or otherwise of different types of cognitive synergy. This presentation complements Michael Apter's talk on cognitive synergy in the arts and humour.

ADOLESCENT VIOLENCE IN THE CHERNOBYL AREA: SELF-CONTROL, IDENTITY, AND MORAL DEVELOPMENT

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The overall purpose of this study was to investigate the hypothesis that a certain combination of motivational states differentiates episodes of real adolescent violence from episodes in which the same subjects resisted the urge to fight. Loss of control over desires and emotions in aggression situations is related to having a less robust prospective frame, as well as problems in adolescent identity and moral development. This research was guided by Kegan's (1982, 1994) constructive-developmental theory of identity, Reversal Theory (Apter, 1982, 1989), and a cognitive-developmental approach to adolescent morality (Kohlberg, 1981, 1984). Questions about the relationship of Reversal Theory to other fields of psychology have been raised (Thomas-Peter, 1993). By combining Kegan's stage theory with Kohlberg's moral development and Apter's reversal theory, it would be possible to achieve a sophisticated analysis and ensure in-depth understanding of the violent adolescents being studied.

Senior schoolboys (n = 66) selected by teachers as prone to violence from the areas contaminated by the nuclear explosion in Chernobyl, Ukraine, were interviewed and administered measures to explore this hypothesis. Interviews were conducted using a modified version of the Metamotivational State Interview (O'Connell et al., 1991) and the Subject-Object Interview (Lahey et al., 1988). In addition, subjects completed the arousal-seeking, arousal-avoiding, and emotionality subscales from the Motivational Style Profile; the Assessing Five-Years Periods of Life Test; the Sociomoral Reflection Measure; the Buss-Durkee Aggression Inventory; and the Anger Response Inventory: Behavior Scale.

When aroused by an attack from another person, the potentially "explosive mix" of states which is likely to lead Chernobyl adolescents to violence consists of the combination of telic and mastery modes. The adolescent experiences anxious anticipation in the situation as a threat to his identity. In the adolescent's organization of the moral world, considerations of the most salient status or role of the persons involved are frequent justifications of moral choices which evidence his growing concern for a sense of identity and protection. If the adolescent's identity is such that he is embedded in knowing the world through his own needs, wishes, and priorities, then violence is used as a means of achieving status and reputation in an unsafe surrounding. The use of reversal theory constructs that may influence the adolescent to choose a non-violent course of action will be discussed.

TELIC/PARATELIC REVERSALS DURING THE COURSE OF A FINAL EXAMINATION

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A central feature of reversal theory is its emphasis on intra-individual differences, or changes that occur within the person over time. Reversal theory "state" measures enable researchers to capture a participant's metamotivational experience at a particular moment, in the context of a particular situation. Previous investigations have shown that subjects' metamotivational states are unlikely to remain fixed over a lengthy period of time, and that subjects experience fairly frequent reversals over the course of a two-hour laboratory session. Of interest in the present research is whether subjects show similar lability when confronted with the stressful situation of writing a final examination, which might be expected to be routinely experienced in a serious-minded, arousal avoidant frame of mind.

Students' metamotivational states were assessed while writing a two-hour final examination in an undergraduate Social Psychology course. Forty one students completed participation in the study, which required them to fill out the Somatic State Questionnaire (SSQ; Cook et al., 1989) at four times: 1) just prior to beginning the exam, 2) upon completion of the first third of the exam, 3) approximately two thirds of the way through the exam, and 4) after they had completed the entire exam. Upon completion of the fourth administration of the SSQ, the students filled out the Paratelic Dominance Scale (Cook et al., 1989) to assess whether there was an association between dominance and changes in state.

Predictably, aggregated findings indicate a general trend for students to show a high degree of consistency in paratelic state, felt arousal, and negativism during the course of writing the exam, and then elevations of paratelic state and felt arousal at the end of the test. Findings were less consistent for negativism. More interesting are the patterns of intra-individual variation, where reversals are evident for some students in the middle of writing the exam. These results and the influence of dominance will be described more fully.

REVERSAL THEORY AS AN ECOLOGICAL SYSTEM

Jay Lee & Lee Branum-Martin, University of Houston, USA

Murgatroyd (1993) presented reversal theory as a paradigm shift in scientific psychology - a shift from the classical, static and reductionist approach to psychology toward a holistic, dynamic approach focused more on process over time than on invariants in abstraction. In fact, the need for such a complex perspective has been widely noted in psychological literature involving chaos theory, dynamic systems, and complexity. In this presentation, reversal theory is represented as a dynamical system, without changing the theory as it is currently accepted. This complex, ecological perspective is focused on the process of intra-individual changes from one stable state to the next stable state. Moreover, this ecological perspective can be graphically portrayed in phase space as a phenomenological field, representing combinations of metamotivational states and continual flux between these combinations - developing the notion of 'trajectories' or emerging patterns of change within the phenomenological field. This ecological perspective suggests a different research paradigm that will be presented along with a demonstration of actual data in the model. Suggestions for future research and interventions will be discussed.

THE DEVELOPMENT OF A LEADERSHIP ROLES PREFERENCE SURVEY BASED ON REVERSAL THEORY CONSTRUCTS

Jay Lee, Dale G. Pease, & Jennifer Hightower, University of Houston, USA

A survey was developed for use in sport team settings to investigate the preference of athletes for different roles fulfilled by coaches. A literature review revealed that in the United States reversal theory (RT) was primarily portrayed as a model of arousal and performance. However, if the general and diverse nature of reversal theory is completely explored, research efforts should not be limited to arousal and performance, but should include social transactions as well. Apter (1997) proposed a set of ten necessary and important roles, and suggested those roles might be useful for investigating team building and group dynamics. A survey of leadership preferences based on those proposed roles was developed. Three items were written for each of the following reversal theory constructs: telic, paratelic, negativistic, arousal-seeking, arousal-avoidance, conformist, autic mastery and sympathy, and alloic mastery and sympathy. The first version of the survey was completed by university students enrolled in exercise science studies ($n=73$). Cronbach's alpha coefficients were from .18 to .90. During a workshop at the 1998 RT Sports Psychology Symposium in Hong Kong, participants suggested several changes. The expert suggestions and statistical item analysis of the initial results led to further revision of several less suitable items. The second version of the survey and an existing survey of leadership preferences, Zhang's (1992) Revised Leadership Scale for Sport (RLSS), were administered to a different group of participants ($n=102$). Alpha reliability coefficients improved on nine subscales ranging from .74 to .94, and decreased on one, the paratelic subscale. As a means of establishing concurrent validity, the six dimensions of the RLSS were significantly and interestingly correlated with the reversal theory derived subscales. Considering the current estimates of reliability and validity from these two studies, investigations leading to reversal theory models of leadership and group dynamics in sport appears feasible.

METAMOTIVATIONAL ORIENTATIONS AND DOMINANCES

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& John Kerr, University of Tsukuba, Japan

Metamotivational orientations toward sport participation (SPMOs), life orientations (LMOs) and measures of dominance (MDs) were examined in university freshers via questionnaires. Stepwise regression applied to the response of 3900 freshmen indicated that many of the LMOs were significant predictors of SPMOs (all $p < .0001$), generally in agreement with RT. SM and Control were predictors of telic-negativistic and paratelic-negativistic reasons (in opposite directions), AA contributed to the prediction of paratelic, autic and mastery SPMOs, and Selfishness predicted alloic-sympathy negatively. Groupings of respondents according to their responses to LMO statements confirmed the above linkages between LMOs and SPMOs. In a subsample of 190 who completed the TDS and/or the NDS scales 6-10 months later, four of the eight SPMOs could be predicted from MD variables: telic-conformity and telic-negativism from TDS-PO, paratelic-conformity from TDS-SM, and alloic-mastery from NDS-RN and TDS-SM, but at lower levels of confidence ($p < .05$). In addition, a few MD variables were found to predict LMOs: TDS-SM for SM, and NDS-PN for Control.

These results were interpreted as indicating that sport participation orientations tend to correspond well with general life metamotivational orientations, which in turn are reasonably predictable from MD variables generated at a different point in time.

STUDENT TEACHERS' MOTIVATIONAL STYLE

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What makes a good teacher? Can Reversal Theory support teachers in training? There is relatively little research into what makes a good teacher. A lay perspective suggests qualities such as patience, enthusiasm, firmness and kindness. Teachers also need to know when it is appropriate to behave in a particular way and to be self aware as well as in control of the children. Reversal Theory provides an optimistic framework within which to match motivational variables to the specific needs of the student teachers and the requirements of the school context.

The Motivational Style Profile (MSP; Apter, Mallows and Williams, 1998) was given to a group of 60 student teachers before their final school experience. The MSP measures the dominance of all five pairs of metamotivational states identified with the theory. The scores from the profile were then related to the student's profiling document, a written assessment of the practice completed by triangulation with the student, the teacher and the supervisor or mentor.

The paper considers the value of the MSP in identifying students who may need support prior to the teaching practice and the possibilities of using Reversal Theory to enable them to 'reverse' if their tendency is towards an inappropriate 'pole'.

Apter, M.J., Mallows, R.D.R. and Williams, S. (1998). The development of the Motivational Style Profile. *Personality and Individual Differences*, 24(1), 7-18.

FURTHER DEVELOPMENTS AND THE MOTIVATIONAL STYLE PROFILE (MSP)

Richard Mallows, University College of Ripon & York, England

MSP and the 'Big Five':

The challenge was made at the 8th International Reversal Theory Conference by Eysenck to demonstrate that the Motivational Style Profile (MSP) was not measuring the same features as the 'big five' (NEO-PI-R) since factor analysis had revealed a five factor structure for the MSP. In particular Eysenck suggested that Pessimism/Arousability would be related to Neuroticism, Paratelic/Arousal seeking would be related to Extraversion, Arousal avoidance/Conformity would be related negatively to openness, Alloic master/sympathy would be related to Agreeableness and Telic/Effortfulness would be related to Conscientiousness. Three different samples were tested using the NEO-PI-R and the MSP. A sample of 55 trainee student teachers revealed that Eysenck's predictions were upheld with respect to Neuroticism, Extraversion and Conscientiousness. Alloic and autic states did not match. A sample of 65 first-year undergraduate psychology students showed a slightly closer match between the NEO-PI-R and the MSP. These differences with student samples indicated a further investigation and data on a sample of 50 clerical and administrative staff will be presented.

MSP and the Web:

There have been two separate data collections of MSP data on the internet. The first site produced a valid sample of 2750 respondents. The first 1387 respondents revealed no significant differences when compared to a normative sample for the MSP. The inclusion of demographic variables of occupation and nationality did reveal significant differences for the remainder of the sample giving higher scores for arousal avoidance, negativism, pessimism and arousability. Is this the definition of a 'computer nerd'? The new site was established as a result of ethical concerns c.f. Buchanan (in press). This site collected detailed demographic data which will be reported on.

Buchanan, T. & Smith, J.L. (In press). Using the internet for psychological research: Personality testing on the World Wide Web. *British Journal of Psychology*.

SPORTING DEVELOPMENTS AND THE MOTIVATIONAL STYLE PROFILE

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& John Kerr, University of Tsukuba, Japan

The Motivational Style Profile (Apter, Mallows and Williams, 1998) was adapted for a feasibility trial on sports science students. This was achieved by amending the instructions for completion. In addition various information on sporting activity and levels of achievement was obtained. A sample of 141 Japanese sports science students, 42 UK sports science and 52 UK physical education students completed the amended questionnaire. Preliminary analyses reveal that the MSP is fairly robust even with this highly specialised group. However there were reduced Cronbach's alpha recorded, in particular for arousal avoidance. Some interesting differences were recorded between sports science students and physical education students, notably with alloic sympathy and effortfulness. The paper will present a detailed analysis and discussion of this data.

Apter, M.J., Mallows, R.D.R, & Williams, S. (1998). The development of the Motivational Style Profile. *Personality and Individual Differences*, 24(1), 7-18.

MOTIVATIONAL INTELLIGENCE AND THE SYNERGIC REVERSALS OF METAMOTIVATIONAL STATES

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The paper reviews and develops the concept of motivational intelligence in relation to the synergic reversals of metamotivational states. "Motivational intelligence" refers mainly to the capacity of an individual to perceive accurately one's own and others' motives and to find out beneficial ways of alternate predominantly extrinsic and predominantly intrinsic motives in order to increase the chances of personal growth and of co-development (Mamali, 1981, 1986, 1998).

The theory of psychological reversals (Apter, 1981, 1985, 1992, 1995; Fontana, 1991; Kerr, 1985; Murgatroyd, O'Connell, 1988, 1992; Svebak, 1987) has pointed out a number of essential conditions ("contingent factors", "satiation", and "frustration") that could lead to the reversals between the pairs of different motivational modes. The present study assumes that these reversals might be induced in a more or less synergic mode due to the level of individual motivational intelligence, which is broadly defined by his/her competence to deal with one's own and others' motivational factors and tensions, to solve motivational problems. The main question of this paper is: are the reversals between the modes of the metamotivational pairs influenced by the level of motivational intelligence of an individual?

First, the construct of motivational intelligence is presented in relation to a wider theoretical framework that assumes that mental modularity could allow the existence for and action of a variety of intelligences. So it is discussed in relation to "mental modules" (Fodor, 1983) and "multiple intelligences" (Gardner, 1983, 1991).

Second, it discusses the relation between the "emotional intelligence" (Salovey, 1989; Salovey & Mayer, 1990; Goleman, 1995), "emotional competence" (Saarni, 1990, 1997) and "motivational intelligence".

Third, it presents a number of specific motivational indicators of motivational intelligence: (1) the control over the dynamic of intrinsic and extrinsic factors within an activity and across different activities; (2) the choices achieved by an individual who has to solve different motivational problems. For instance, is the person willing to increase the satisfaction threshold of the existing motivational level or to move toward a higher level along Maslow's hierarchy? Or the choices marked by the tension between one's own skills and the challenging character of a situation (Csikszentmihalyi, 1975, 1991).

Besides these issues the study deals extensively with the mode in which motivational intelligence could be considered a factor that influences the synergic character of the reversals between the four classical metamotivational modes at personal and interpersonal level.

REPLICATING LANARCH & BROWN (1997): DOES NEGATIVISM DOMINANCE PREDICT RESISTANCE TO HEALTH PERSUASION MESSAGES ABOUT THE USE OF ECSTASY?

Mark McDermott & Francine Bloom, University of East London, UK

At the 8th International Conference on Reversal Theory at the University of East London in July of 1997, Temple Lanarch and Iain Brown, University of Glasgow, Scotland, reported a study in which they found that scores on the Negativism Dominance Scale [NDS] (McDermott & Apter, 1985) approached significance ($\beta = 0.155$, $t = 1.799$, $p = 0.07$) in a multiple regression analysis when predicting whether or not respondents would reject a health persuasion message concerning the harmful effects of tobacco smoking. This result was obtained when controlling statistically for the effects of telic dominance, age and status as a smoker or non-smoker, the latter reaching significance in the regression (at $p = .0001$). Although status as a smoker best predicted rejection of the health promotion information, negativism dominance as an individual difference variable nevertheless was seen to be promising as a concomitant of receptiveness, this Reversal Theory construct essentially being about acceptance or rejection of social influence -health promotion messages constituting attempts to influence peoples' thoughts, feelings and behaviours.

In order to examine if this suggested relationship would reach statistical significance in another sample of respondents and when using a different health persuasion message, 65 participants were given a U.K Health Education Authority poster to read and look at concerning the recreational use of ecstasy (MDMA). Immediately thereafter, they were asked to respond to the Lanarch & Brown (1997) Openness/acceptance versus Critical Rejection Scale, Lau et al's (1986) Health Value Scale, items measuring beliefs about perceived susceptibility to and seriousness of potential & relevant health threats, as well as the costs and benefits of taking preventive action (as after components of Becker's 1974 Health Belief Model), the Negativism Dominance Scale (McDermott & Apter, 1985) and the Telic Dominance Scale (Murgatroyd, Apter & Ray, 1978). Status as a previous user/non-user of ecstasy was also assessed via self-report.

Bivariate and multivariate correlational analyses of the resultant data set were performed to investigate hypothesised relationships between predictor variables and scores on the Openness/acceptance versus Critical Rejection Scale. The results of these analyses will be presented in this paper and discussed in relation to Lanarch & Brown's (1997) findings and in relation to their implications for the design and marketing of effective health promotion literature.

COPING AND REVERSAL THEORY STATES DURING SMOKING CESSATION

Kathleen A. O'Connell, University of Kansas Medical Centre, USA,

Mary M. Gerkovich, Mary R. Cook, & Marge Bott, Midwest Research Institute, USA

Prior research based on retrospective self-reports has shown that paratelic, negativistic, and sympathy states are related to lapsing during a smoking cessation attempt. An exploratory study of coping with urges to smoke using near real-time reports given by 36 subjects who were currently attempting to quit smoking showed that paratelic states were associated with the use of fewer coping strategies during resist episodes than telic states. Within-subjects analyses comparing lapse and resist episodes for the 11 subjects who experienced a lapse during their 3-day participation in the study revealed that playfulness scores for lapse episodes were significantly higher than playfulness scores for resist episodes.

In this paper we present data on a new sample of 63 subjects who reported about the coping they used during lapse and resist episodes for the first 14 days of cessation. Study analyses address the relationship of metamotivational states to the use of coping strategies during lapse and resist episodes, the relationship between state and whether the subject resisted or succumbed to the urge to smoke, and the interaction between state and coping strategy to address the question of whether certain coping strategies are more effective in some states than in other states.

Generalized Estimating Equations and random effects models are used to address these questions so as to control for the dependency in these data. The implications of the findings for supporting reversal theory constructs and for smoking cessation interventions will be discussed.

MASTERY/SYMPATHY STATES: AN OPPOSING PAIR?

Kathleen O'Connell, University of Kansas Medical Center, USA,

Mary M. Gerkovich & Mary R. Cook, Midwest Research Institute, USA

At the 1989 Reversal Theory Conference in Athabasca, O'Connell and Apter presented a conceptual elaboration of the mastery/sympathy pair of metamotivational states. In the 10 years since that presentation, O'Connell and her colleagues have attempted to develop self-administered state measures of the mastery/sympathy pair. These efforts have been largely unsuccessful. Results of a study of 36 subjects who responded to mastery/sympathy items several times per day for three consecutive days indicated that mastery and sympathy self-descriptors were neither opposite to each other, nor, in some cases, statistically distinct from each other. Descriptors indicative of negative hedonic tone in the mastery and sympathy states appeared on two orthogonal factors. Thus, it appears that one can be in both mastery and sympathy states at the same time. Because we study attempts at behaviour change, it is possible that our findings are unique to studies of intra-autic states wherein individuals are attempting to master and/or nurture themselves. Despite our inability to measure mastery/sympathy states accurately, we continue to believe that the concepts are important to the understanding of behaviour change and interpersonal relationships.

This presentation will culminate in an open discussion of the problems and the possibilities involved with mastery/sympathy pair with the aim of identifying appropriate next steps in research on mastery and sympathy states.

REACTIONS TO AROUSAL AND AMBIGUITY: AN APPLICATION OF REVERSAL THEORY

Paul Pilon, University of Windsor, Canada

The moderating effects of telic and paratelic states on level of hedonic tone induced by arousal and ambiguity were investigated. Eighty-four female and 29 male undergraduate students volunteered to participate in a mock diagnosis task that was designed to expose participants to different types of ambiguity. Metamotivational state and level of perceived arousal were allowed to vary and were treated as subject variables. Regression analyses were used to determine if the interactions between state and arousal, and state and ambiguity significantly predicted level of hedonic tone. The interaction between arousal and state was significant. While in a telic state, the correlation between arousal and hedonic tone was negative, and while in a paratelic state, the correlation was positive. The interaction between ambiguity and state was not significant. Discovery of a major confounding variable in the method used to test this hypothesis, and alternative means of manipulating ambiguity, are discussed.

AN ANTICIPATION OF REVERSAL THEORY WITHIN A CONCEPTUAL-ANALYTIC AND BEHAVIORIST PERSPECTIVE

U.T. Place & Jason Wheeler Vega, University of Kansas, USA

Michael Apter denies that behaviorism can provide an adequate account of human action, referring to it in one place as "a kind of methodological vandalism" (Apter, 1989, p.2). It is the purpose of this paper to show how the first author came, as a behaviorist and analytic philosopher, to a position that anticipates reversal theory to a surprising extent.

The basis of this position is an analysis of polar statements concerning 'wanting': 'X wants O', and 'X does not want O'. These sentences imply a number of corollaries. For example, if 'X wants O', then: 'X will be pleased if O appears'. 'X will be worried if it looks as if O will not appear', and 'X will be angry or miserable if O fails to appear'. Contrasting entailments follow, 'X does not want O'. These implications display the relationship between the motivational concepts of 'wanting' and 'not wanting', and emotion concepts such as being pleased, worried, angry, miserable, etc. This set of reciprocally related entailments provides, it will be argued, the conceptual foundation of reversal theory.

This analysis led the first author to develop a behavioral theory of emotion, in which the various emotions can be located on two dimensions (after Myers, 1923): 'pleasant/unpleasant', and 'high-arousal/low-arousal'. Emotions are distinguished by reference to a third variable: a characteristic 'impulse' appropriate to the type of contingency or contingency phase in which the emotion in question is evoked. The notions of 'wanting' and 'not wanting' are defined, in the language of operant psychology, as differences in the reinforcing effect of actual and potential stimuli with respect to actual and potential operant responses by the organism.

Some illustrative clinical and experimental applications of the theory by the first author, in the 1960's, will be outlined.

MOTIVATIONAL STYLES AND COGNITIVE RESTRUCTURING INTERVENTIONS FOR WOMEN WHO WEIGHT CYCLE

Sue Popkess-Vawter & Kathy Thornton, University of Kansas, USA

Research indicates that nearly one-fourth of all females in the United States are overweight despite many approaches to weight control. Weight cycling is repeated periods of weight loss followed by weight regain. Motivational styles, according to reversal theory, reflect individuals' attempts to satisfy their basic psychological needs or motives. Certain dominant styles may predispose weight cycling women to view life situations in a negative and unrealistic way so as to trigger overeating to cope with high tension stress. By knowing their motivational styles, interventions can be designed to address negative motives that perpetuate overeating. The purpose of the study was to describe motivational styles of overweight women who weight cycle and to determine the effect of cognitive restructuring based on reversal theory to replace negative with positive self-talk and balance metamotivational state pairs. In a 12-month weight management study, 25 overweight adult female subjects who received cognitive restructuring based on reversal theory were compared to a group of 19 subjects who did not. Using the Apter Motivational Style Profile, subjects' state, dominance, and salience scores were measured at baseline, after the intervention at 6 months, and after 1 year (6 months follow up). At baseline, all subjects were dominant in autocentric sympathy (cooperative and wanting to feel liked) and allocentric sympathy (cooperative and wanting others to feel liked). Cognitive restructuring was aimed at reducing any dominance and creating balance between all metamotivational states. As hypothesized, experimental subjects had significantly higher autocentric mastery scores ($t = 2.21, p = .034$) and lower autocentric sympathy dominance scores (approached significance $t = 2.01, p = .053$) at 12 months than comparison group subjects. Experimental subjects had significantly lower allocentric dominance scores (more neutral) at 12 months post-treatment compared to scores at 6 months ($t = -2.32, p = .030$) and higher autocentric mastery-sympathy salience (approached significance $t = -2.00, p = .058$). Findings supported that although women who weight cycle spend much time and place high importance in sympathy states, reducing or balancing dominance may be achieved through cognitive restructuring based on reversal theory.

THE DEVELOPMENT OF THE APTER WORK IMPACT SYSTEM

Marie Shelton, Interactive Dynamics & Apter International,

Michael J. Apter & Stephen B. Carter, Apter International

The Apter Work Impact System (AWIS) is a psychometric survey instrument designed to measure the motivational forces which are at work in an organisation ('motivational mapping') so that motivational problems that hamper performance may be identified and dealt with. It comes in two forms, one for employees and one for managers. Each consists of essentially the same set of forty items which reflect all eight metamotivational states. An example of an employee item would be: "I am making progress in my career" (telic), and of a managerial item: "They are friendly with each other" (autic sympathy).

For each item, respondents are asked to make two ratings: (a) the importance of the item and (b) its degree of satisfaction. Individual employees rate in terms of their own personal needs and satisfactions, while managers rate in terms of importance to the organisation (representing corporate values) and their estimate of the degree to which the need is actually satisfied in employees. In this way it is possible to produce four profiles representing different aspects of the way in which all the metamotivational states enter into the organisation. Among other things, a number of systematic comparisons can be made, which can be represented graphically: (a) between the perceived importance of each metamotivational state (or particular aspect of it) and its degree of satisfaction for employees and as assessed by managers, (b) a comparison of employee and management assessment of the importance of each metamotivational state (or a particular aspect of it), and also the degree to which it (or some aspect of it) is satisfied in employees. In this way the system highlights among other things: (i) employee needs which are undervalued (either by the organisation or by the employees themselves) and therefore not fully harnessed to the organisation; (ii) employee needs that are recognised but not satisfied by the organisation; and (iii) employee dissatisfactions which are not appreciated by managers. Comparisons may also be made in this way between teams, departments, offices etc. within an organisation.

The rationale for the general structure of the survey instrument will be discussed, as well as the way in which items were generated and tested. Early experiences of using the scale in some contrasting industrial-organisational contexts will be described.

SENSE OF HUMOR AS A PARATELIC FORM OF COPING WITH PAIN AND CHRONIC DISEASE: EMPIRICAL SUPPORT AND POSSIBLE PSYCHOBIOLOGICAL MECHANISMS

Sven Svebak, Norwegian University of Science and Technology, Norway

Findings from three collaborative studies will be briefly reviewed. One study recruited 28 consecutive gallstone patients to provide estimates of positive and negative resources in coping with gallstone related pain. A second study recruited 47 patients in routine dialysis due to chronic kidney failure. Relations between quality of life and treatment regimens as well as coping resources were investigated. A third study recruited 1062 high school students to assess relations between stress, types of sense of humor and bodily complaints.

Results from the two former studies supported the conclusion that sense of humor is a powerful personality resource in coping with pain and discomfort due to chronic disease. Results from the third study supported the conclusion that a moderating effect of sense of humor upon the relation between life stress and bodily complaints was present among students with a predominantly friendly sense of humor. This moderating effect was not present among students with a hostile sense of humor, suggesting that paratelic coping by use of humor may not provide health benefits when embedded within negativism.

Possible psychobiological mechanisms of relevance to these findings are discussed along three lines: The first is that of cognitive appraisal when exposed to stressors, with a focus upon the primary appraisal process. The second is that of psychological effects upon pain modulating transmitters of the central nervous system. The third line of possible mechanisms relates to laughter and its effects upon body functions including the cardiovascular and lymphatic systems.

REVERSAL THEORY: MOTIVATIONS FOR OVEREATING IN OBESE DIETING INDIVIDUALS

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Obesity is a major health problem in the U.S. affecting 26% of the population. Many unanswered questions remain in obesity research. Reversal theory was used as a new way of addressing these questions concerning individuals' motivations while dieting and while not complying with their diets by overeating. In Phase II the Tension Stress Scale was administered to 129 subjects three times: (a) at baseline at the beginning of the research presentation; (b) in relation to the interpersonal conflict scenario; and (c) in relation to the uninvolved scenario. The sample was divided into three groups: the resist group, the overeating group, and the mixed group. Those dieters who resisted eating were in the hypothesized dieting modes of telic, conformist, and mastery autic. Those dieters who chose to overeat were not found to be in the hypothesized nondieting modes, but in a wide spread of metamotivational modes.

The implications for practice and research are: (a) dieters who choose to resist eating and comply with weight loss programs experience less tension stress than those who are not compliant; and (b) dieters have different high risk situations and diverse spread of metamotivational modes while overeating. A need for individualized strategies and support systems is evident.

THE EFFECT OF MASTERY OR SYMPATHY INDUCTION ON TEACHER STRESS

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The effects of reversal theory induction on emotional responses of teachers to imaginary scenarios of disruptive students was investigated using 60 volunteer teachers aged 23 to 59 in southern Tasmanian government schools. Participants referred themselves as having low, moderate or high stress levels and completed the Occupational Stress Inventory as a quantitative measure of current stress level. In the experimental session teachers received either an autic/mastery induction or an alloic/sympathy induction. They then read three imaginary classroom scenarios (neutral, telic/negativistic disruptive, and paratelic/negativistic disruptive) and for each scenario rated their emotional responses on the Tension and Effort Stress Inventory, and rated hedonic tone, stress and arousal on visual analogue scales. Main effects were found for scenario and induction, showing that the teachers found the scenarios describing disruptive children unpleasant. Teachers who had received the mastery induction experienced more negative somatic and transactional emotion than the teachers who had received sympathy induction. The sympathy induction group experienced more positive somatic and transactional emotion than the teachers who had received the mastery induction. Investigation of the different sources of stress showed that variables influencing teacher stress levels were role overload, psychological strain, self-care and rational/cognitive coping. It was concluded that the mastery mode is associated with a negative interpretation of disruptive student behaviour, which may result in higher levels of negative emotion and stress from disruptive student behaviour.