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# **The Practice of Puxa-Puxa among Mozambican Women: A Theory-Driven Inventory of Motives**

Vera Cruz Germano <sup>1\*</sup>, Mullet Etienne <sup>2</sup>

1 : Dpt. Psychology, Eduardo Mondlane University (EMU)  
Maputo

2 : Institute of Advanced Studies (EPHE)  
*Ecole Pratique des Hautes Etudes*  
Paris

\* : Auteur correspondant

Puxa-puxa is the elongation of the labia minora of the genital organs in a definitive fashion. It is one of the most widespread genital practices among women in Mozambique, and this practice seems to be specific to this country. The motives underlying this practice and the motives underlying its abandonment were examined in a theory-driven way. A total of 616 women currently living in the provinces of Maputo, Zambezia and Nampula, aged 18-62, were presented with one of two questionnaires that contained items about possible motives for practicing puxa-puxa or possible motives for not practicing it. Seven separable motives for practicing puxa-puxa were found, and the most highly rated were Having a satisfying sexual life, Satisfying my sexual partner, and Gaining self-control. Five separable motives for not practicing puxa-puxa were found, and the most highly rated were: Disliking a painful practice, Affirming one's value as a person, and Avoiding contamination. The main findings of the study are (a) that the practice of puxa-puxa is associated with deep psychological motives that are common to most women in most cultures, namely having a satisfying sexual life with a reliable partner, creating the conditions for having children, and being able to care for them, and (b) the abandonment of this practice is largely the result of a personal decision, which is not taken under constraint, and which is not exclusively taken by fear of illness. These motives are easily interpretable in the framework of Reversal Theory.

# Rebelliousness and attachment difficulties as legacies of parental neglect in childhood.

Mcdermott Mark<sup>1</sup>, Barik Nilupa

1 : Mark McDermott (UEL)

School of Psychology University of East London Stratford Campus London E15 4LZ

<http://www.uel.ac.uk/>

What we did: we gave questionnaire measures of proactive and reactive rebelliousness dominance ('negativism' in Reversal Theory), attachment style in adulthood, and recalled parenting style to eighty adults, 45 men & 35 women, aged 18 to 50 (mean age=25; sd=7.45). We also collected demographic information from each respondent.

We found that: (i) an attachment style characterised by a feeling of being uncomfortable with closeness and intimacy independently of other variables predicted self-reported levels of proactive and reactive rebelliousness; (ii) a neglectful parenting style, whether maternal or paternal, was independently predictive of both proactive and reactive rebelliousness; (iii) a maternal parenting style of indifference was also found to be predictive of reactive rebelliousness; (iv) paternal indifference predicted proactive rebelliousness; (v) over-controlling and abusive parenting styles however, were not found to be predictive of either forms of rebelliousness (with the exception of an abusive paternal style for proactive rebelliousness); and (vi) self-reported parental neglect was found to be associated with feelings of discomfort with closeness & intimacy

We concluded: parental neglect emerges as an important childhood antecedent of both the sensation seeking form of rebelliousness (proactive) and the disaffected form of rebelliousness (reactive) in adulthood. Parents not taking an active interest in their children's concerns, worries, episodes of being upset, in their friendships, whereabouts, and other needs has long-term adverse consequences. Such neglect, by association, also appears to have implications for readiness to enter and feel comfortable in relationships in adulthood, which in turn feeds into nonconformity as an adult. A tripartite model of these variables is proposed and the role of other potentially contributory Reversal Theory constructs are discussed.

# A reversal theory perspective of why flow doesn't happen.

Wright Jonathan <sup>1,2,3,4</sup>

- 1 : University of Brighton  
School Of Health Professions University of Brighton Robert Dodd Building 49 Darley Road Eastbourne East Sussex  
BN20 7UR  
<http://www.brighton.ac.uk/>
- 2 : Sharon Wright (East Sussex Healthcare NHS Trust)  
Eastbourne District General Hospital, Eastbourne, East Sussex, UK
- 3 : Gaynor Sadlo (University of Brighton)  
School of Health Professions, University of Brighton, Eastbourne, East Sussex, UK
- 4 : Graham Stew (University of Brighton)  
School of Health Professions, University of Brighton, Eastbourne, East Sussex, UK

It has been suggested that people who experience flow attain the highest level of wellbeing through engaging in occupations (Csikszentmihalyi & Mei-Ha Wong, 1991). Csikszentmihalyi (2002) has described flow, or optimal experience, as a subjective psychological state that occurs when a person gets so immersed in what they are doing that they forget everything except what they are doing. He found that people who had experienced flow reported finding it so enjoyable that they repeated the experience just because they wanted to. Although Csikszentmihalyi (2002) conceptualised flow as one type of experience, three studies examining the flow process have been conducted that have described different phenomena in the participants' accounts of their flow experiences (Wright, Sadlo & Stew, 2006; Wright, Sadlo & Stew, 2007; Wright, Wright, Sadlo & Stew, 2012). Wright et al. (2012) have argued that reversal theory provides a framework from which to understand different types of flow or optimal experience.

Previous research has focused on the flow experiences reported by the participants (Wright et al., 2006; Wright et al., 2007; Wright et al., 2012). The aim of this presentation however, is to explore phenomenological accounts of participants when describing difficulties they have had in experiencing flow from a reversal theory perspective. It will be argued that the reasons why people might not be able to experience optimal experiences may be more complex than previously believed and that reversal theory could help to explain these complexities.

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# Metamotivational Dominance Involving Substance Use during Academic Tasks

Craig Joan <sup>1</sup>, O'neil Ashlyne, Lafreniere Kathryn

1 : University of Windsor Canada  
401 Sunset Avenue Windsor, ON N9B 3P4  
[www.uwindsor.ca](http://www.uwindsor.ca)

There are many substances that are commonly used and generally considered acceptable in mainstream society, such as caffeinated and alcoholic beverages. There are also substances that are illicit, yet, still used by many in today's society, such as marijuana and amphetamines (Rehm, 2007; Spence, & Gauvin, 1996). Substance use can result in a variety of negative consequences (Caldeira, O'Grady, Vincent, & Arria, 2012), and the use of these substances in conjunction with academic activities offers a situation that could increase the possibility of these negative consequences. A study by Johnson, Hicks, McGue, and Iacono (2009) found that higher IQ scores and greater education were related to the use of some substances. The purpose of this study is to investigate students' substance use as it relates to Reversal Theory. For example, since many academic tasks require a goal-orientation, do students who are generally enjoyment-oriented consume more caffeine or amphetamines than those who are already goal-oriented?

Metamotivations, as described in Reversal Theory (Apter, 1989), have been studied in relation to smoking cessation (e.g., Burris & O'Connell, 2003) and other addictive behaviours (e.g., Miller, 1985). Sartori (2005) applied the constructs from Reversal Theory to students' use of marijuana. She found that the majority of students sampled were using marijuana, or had used marijuana in the past. She also found that habitual marijuana users were typically paratelic and negativistic dominant. However, there is a deficit in literature regarding the relationship of metamotivational dominance with students' use of other common substances. The current study investigates the relationship of students' dominant metamotivational states with their substance use and academic behaviours.

## Hypotheses

- 1) A person's metamotivational dominance is related to their motives for substance use
- 2) A person's metamotivational dominance is related to their actual substance use
- 3) A person's metamotivational dominance will influence academic risk taking
- 4) Stress will interact with metamotivational dominance to influence academic risk taking
- 5) A person's year of study will interact with metamotivational dominance to influence their substance use

## Method

A sample of participants (N= 202) took part in an online study at the University of Windsor. The ages of the participants ranged from 18 to 69 years (M= 21.91), and were ethnically diverse. Participation in this study was completed online. Students completed the Motivational Style Profile (Apter, et al., 1998), followed by the Cognitive Appraisal of Risky Events Scale (Fromme, Katz, & Rivet, 1997), the Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983) and a questionnaire of participants' past substance use. Participants then completed the Drinking Motives Scale (Cooper, 1994), followed by three scales that were adapted from the Drinking Motives Scale to reflect motives for other substance use. These three scales were a marijuana motives scale, a caffeine motives scale, and an amphetamine motives scale. The final measure completed by the students was a demographic questionnaire that assessed their gender, age, year of study, grade point average, and other personal information.

## Results and Discussion

In support of hypotheses, results show statistically significant relationships between metamotivational dominance and the motives for substance use (Hypothesis 1) and between metamotivational dominance and actual substance use (Hypothesis 2). It was predicted that several metamotivational dimensions would influence academic risk taking, but only telic dominance was found to negatively influence academic risk-taking, which partially supported the third hypothesis. There was no support for Hypotheses 4 or Hypothesis 5, since there were no significant interactions that involved the students' perceived stress or their year of study. Implications of these findings and future directions will be discussed.

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# PSYCHOPHYSIOLOGICAL AND STRESS RESPONSES TO COMPETITION IN TEAM SPORT COACHES: AN EXPLORATORY STUDY

Hudson Joanne<sup>1</sup>, Robinson Paul, Davison Glen

1 : Aberystwyth University (AU)

Department of Sport & Exercise Science, Institute of Human Sciences

Sports coaching can be rewarding but stressful with potential health implications for coaches (Fletcher & Scott, 2010). Research into stress in coaches is mainly qualitative, mono-disciplinary and examines chronic stressors (e.g., Olusoga et al., 2012). Thus this study examined coaches' in-competition psychological states and physiological indices of stress, using Reversal Theory (Apter, 2001) as an underpinning. Ten male team sport coaches (mean age  $39.8 \pm 13.12$  years) reported subjective stress, emotions, arousal, metamotivational state and provided saliva samples, on a competition day: 15 mins prior to the pre-match team talk; start and end of the match, and, end of the first and start of the second halves, then at equivalent times on a non-competition day. Saliva samples were assayed for alpha-amylase activity; this was higher on competition than non-competition days:  $F(1,9) = 5.25, P = .048$ , as were all psychological variables except pleasant emotions (PP

# REVERSAL THEORY STATES IN CHOOSING A FRIEND AMONG EARLY ADOLESCENTS IN FRANCE

Kerzil Jennifer<sup>1</sup>

1 : Institut de Psychologie et Sociologie Appliquées - Université Catholique de l'Ouest (UCO - IPSA - L'UNAM)  
L'UNAM  
3 place André Leroy BP 10808 49008 Angers cédex 01  
[www.uco.fr](http://www.uco.fr)

Having friends is one of the most important things for children as it may help them in all the aspects of their life, for instance, well-being or academic achievement. Therefore, the study of friendships among children is one of the most interesting areas of study for anyone who wants to understand child behavior. Preteen years are a key stage regarding the relationship of the child with peers especially as social relationships become more profound, both quantitatively and qualitatively. Preteens begin to identify themselves with peers instead of parents and start to acquire moral codes and develop moral judgments. From the age of ten, children start to worry about what might happen to someone else (Sullivan, 1953). Furthermore, sociometric tests have shown the idea of segregation almost completely disappearing among children older than eight or nine years old.

A child may have a favorable opinion of another child belonging to a different group even if he dislikes the whole group (Allport, 1946, 1954). Clark and Ayers (1991) demonstrated that, under certain conditions, the criteria of gender and racial characteristics are considered irrelevant in choosing friends. "Race" and ethnicity are not fixed components of a child's identity but are related to the context and more or less activated according to it (Connolly, 2001).

Aims and hypothesis

Therefore, the aim of this research was to find out the reasons why a preteen chooses someone to be his friend. Does he chose someone who is different from himself and if so, is it because of or despite his differences?

We set the following hypothesis:

According to Apter's Reversal Theory (1982, 1989, 1997), we expected to identify 8 states among children when choosing a friend that they consider different from themselves. We expected to find motivations corresponding with Serious or Playful, Conforming or Rebellious, Mastery or Sympathy, Self or Other states.

We expected high scores for Playful, Sympathy and Other states and low scores for Serious, Mastery and Self states.

We set the hypothesis that depending on the differences the child sees in his friend, his motivation in the choice of this particular friend will change. If one considers his friend is different from him because of his skin color or his personality, this will have consequences on the choice of his friend.

We also expected to find some trace of preteen stage in the scores for Rebellious items.

Finally, we expected to find differences among the answers given by children depending on their gender, social background or origins.

Method: Participants and procedure

459 children aged 9 to 12 in their last year of primary school participated in the study. They were asked if they had a friend who they considered different from themselves. The results of those who answered «no» to this first question were excluded from statistical analysis. As a result only 319 questionnaires could be used in the statistical analysis.

We built a questionnaire based on the Reversal Theory including all 8 motivational states. It aims to explore all of the reasons that may lead to the choice of one particular friend.

The questionnaire consists of:

16 items for Serious state. For example: "He helps me with my homework", "When he is on my team I always win".

14 items for Playful state. For example: "We enjoy playing the same games", "I like having him by my side", "He always knows fun things to do".

12 items for Conforming state. For example: "He never gets into trouble", "He doesn't get noticed by teachers which I think is a good thing", "If I weren't his friend, he would be lonely and it's bad to leave someone alone".

15 items for Rebellious state. For example: "The teacher doesn't like him so he's cool", "I don't

like to act like others", "It makes my parents angry so that's cool".

13 items for *Mastery* state. For example: "He always does exactly what I tell him to", "I defend him against others", "He doesn't boss me around".

16 items for *Sympathy* state. For example: "He is kind and I like him a lot", "It makes my school day brighter", "My other friends like him too".

13 items for *Self* state. For example: "He helps me to solve my problems", "He listens to me", "He is interested in stuff that interests me".

12 items for *Other* state. For example: "Becoming friends with someone different from you changes your life in a good way", "Having friends who are different from you will help to build a better world", "It takes all kinds of people and all kinds of friends to make the world a better place»

## Results

Principal component analysis highlights six factors explaining 44% of the total variance. It shows no evidence for the existence of *Mastery* or *Serious* state in the choice of a friend.

Two states, *Sympathy* and *Other*, seem to have a greater role to play when it comes to choosing a friend. When they choose their friends, children appear to favor harmony, affection and kindness, characteristics of the *Sympathy* state. Furthermore, this choice seems to be made for *Other* motivations: the child cares about others, he values the friendly understanding and mutual respect between people.

According to the Reversal Theory, *Conforming* and *Rebellious* states should oppose each other. In this study they both appear to be of average importance in the choice of a different friend among preteens. However, the standard deviation is higher for items corresponding to the *Conforming* state than for those corresponding to the *Rebellious* state. This shows that the respondents are in a transitional phase between childhood (compliance with ideas imposed by the adult world) and adolescence (desire to stand out from what is imposed by adults).

Preteens seem to favor the *Other* type of motivation when choosing a friend who is different from themselves. Their *Self* motivations have also been highlighted, but to a lesser extent. Given that the statistics prove the existence of a strong correlation between those two states, we question the relevance of an opposition between these two factors as presented in the theory. Indeed, it is possible for a human being to think simultaneously of himself and of others, given the fact that we all are social animals and that for our own benefit we need to live in a peaceful environment. Analysis of variance shows the predictive value of two independent variables: gender of the subject and the religion of his family. Differences in motivation between boys and girls are especially notable for *Playful* and *Self* motivations. We observe that the *Playful* state is favored by girls. They seem to pay more attention to the present moment and to seek fun and pleasure in friendships. On the other hand, boys have a significantly higher mean than girls for *Self*'s items. It seems that boys are more conscious about all the benefits they get from their friendship, which can be translated in terms of "choosing a friend for themselves".

One interesting fact is that the reason why preteens choose a different friend is not influenced by their family's socio-economic level or geographic origin. The analysis of variance shows very little inter-individual differences at work based on sociological characteristics in the motivations of a preteen choosing a different friend. Moreover, no meaningful distinction exists between those who chose a friend who is different by his ethnicity and those who chose a friend who is different by his personality.

Cluster analysis reveals five groups of children with distinct behavioral patterns. Low score for *Playful* motivation characterizes a first group, composed mostly of boys. Children in the second group, who declare having religious practice, respond more favorably than others to items correlated with *Other*, *Conforming* and *Playful* states. Children in the third group, the majority of whose parents were born in France, respond less favorably to *Conforming* and *Self* state. A fourth group, composed primarily of girls, is distinguished by its tendency to respond less favorably to *Rebellious* and *Self* items. Finally, the last group, mostly made up of boys, shows tendency to prefer *Self* state. It is important to note that all children respond very favorably to *Sympathy* items in explaining their choice for a friend.

These results highlight the need for further investigations on motivational resulting in a child's choice of friends. Consequently, a new questionnaire based on the Reversal Theory has been developed to study friendships among children.

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# The use of reversal theory in mathematics education research

Lewis Gareth <sup>1</sup>

1 : University of Leicester  
Leicester

The use of reversal theory in mathematics education research

Gareth Lewis

School of Education, University of Leicester

G178@le.ac.uk

Keywords: disaffection; Reversal Theory; mathematics education; affect

This paper/presentation reports on a doctoral research study into students' experience of disaffection with school mathematics in the UK. The study was conducted from a constructivist and interpretive perspective, and used Reversal Theory as the guiding framework. The paper reports on a number of aspects of the study, although further details have been reported at the Reversal Theory conference (2011), in Lewis (2013) and elsewhere. In addition to this reporting, the paper discusses issues related to the use of the Reversal Theory in educational research and the efficacy and utility of the theory in doing so.

A review of the relevant literature in relation to disaffection with school mathematics (and the domain of affect in mathematics education research), had identified that the little available research is dominated by the quantitative study of attitude. Since the present study sought to characterise students experience 'beyond attitude', in essence, as a motivational and emotional phenomenon, it was vital to identify a relevant and appropriate theoretical framework for the study. Reversal Theory provides just such a framework, and has a number of distinct advantages. First and foremost, since it is structural and phenomenological it provides the subjective perspective, and is further consistent with an interpretative, as opposed to the nomothetic or positivist bias of so many quantitative studies of attitude. In addition, not only does it centre motivation as the leading affective construct, but it also (and in contradistinction to most theories of motivation) provides a full account of emotions, and their relationship to motivational variables.

Since the primary focus of the study is disaffection, issues concerning the theory were subordinated to the study of the topic itself. Thus, it did not seek explicitly to test or advance knowledge of the theory itself, so in that sense the study falls into the category 'topic-centred research' (Apter, 2013). In that paper Michael Apter suggested that:

The pragmatic success of a theory in helping to answer specific questions provides indirect support for the efficacy of the theory itself.(p.1)

It is proposed that in topic-centred research, the relationship between the theory and the substantive issue at hand can offer more than validation, and this will be explored in this paper. This will be achieved by looking at three aspects of the use of the theory in the current study.

## 1 Reversal theory as a design framework

The evaluation of an initial exploratory study identified a need for more forensic techniques to provide richer data. Consequently, the TESI (Svebak, 1993) was adapted for the context (TESI-ME) in order to examine the occurrence of negative emotion in students' experience of mathematics. Two sets of coloured cards were also devised, representing positive emotions and the other representing feelings and values. All of these were informed by the theory. The TESI was administered to 140 students in two further education colleges (post 16 vocational colleges) in the UK. 25 of these students were subsequently interviewed. The relevant TESI-ME data was available at interview, and the cards were used in a structured way within the interview. In this way, data structured using Reversal Theory constructs and relating to motivational states and emotions was captured during the interviews, although a range of other questions were also explored during the interviews.

## 2 Reversal Theory as an interpretative framework

Analysis of the data was not constrained by the theory. It is possible to analyse the data in a grounded way using the criterion 'motivationally or emotionally significant' to identify statements and passages of interest. However, since for instance, states and emotions derived from the theory were designed in to the cards and the TESI-ME, it is inevitable that these constructs

appear in the analysis. For the analysis of the more general narrative in the interviews, constructs related to the theory also appear quite naturally, thus confirming the existence and importance of these in students' mathematical/educational lifeworld. But it is also the case that other categories of relevant data needed to be coded that did not fall neatly into the RT framework. Thus codes had to be created to accommodate these passages.

The use of the theory to understand an individual's lifeworld through a motivational and emotional perspective is demonstrated in case studies such as that reported in Lewis (2013). A cross-case analysis provided evidence of the operation of motivational states within the mathematical education context, but also evidence of reversals, and more detailed evidence of the existence and provenance of emotions. In this way, the analysis does indeed provide confirmatory evidence in support of the theory, but adds to current evidence, for instance in terms of the operation of transactional states and emotions in this educational context.

Analysis of TESI-ME data also revealed an interesting phenomenon ? a certain apparent ? blindness' of a significant minority of students in relation to the transactional states. Although such findings may not impact or advance the fundamental principles of the theory, it may suggest something interesting about the development of young peoples' self-understanding of transactional states and emotions.

Using the theory as an interpretative framework, then, enables not just the ordering and interpreting of the data, but new insights to be uncovered, articulated and evidenced within the field.

### 3 Use of the theory in theorising the field

The first two categories of use, as outlined above, are to be expected, and draw on the theory, but perhaps do little to advance it. A more synergistic and productive relationship between the theory (or perhaps paradigm, as outlined in Apter 2013)) and the field is possible when it is used to develop theory in the field. The focus here will be on the use of the theory within the context of the study, and the ways that the theory can be used to develop the theoretical characterisation of the central topic ? in this case, disaffection with school mathematics.

In this presentation, this will be illustrated with a number of examples from the current study. They include:

- Developing a model for the affect space which shows inter-relationship and interaction of motivation, emotion, cognition and metacognition
- The use of Reversal Theory ideas to suggest a process for the development of cognitively-mediated structures such as attitudes and beliefs
- the emergent understanding of motivational pathways ? semi-stable aspects of individual style
- providing a theoretical underpinning, explanation and further theorisation for other data-rich but theory-poor structures such as engagement structures (Goldin, Epstein, Schorr, & Warner, 2011) proposed by researchers in the field

The presentation will outline these three modes of deployment of the theory in more detail, and will propose that the relation between the theory and the field in topic-centred research can in fact be quite complex, yet also contribute to aspects of the development of the theory.

In summary, this paper provides a review of the ways that the theory was deployed in the study, and in doing so offers some illustrations and suggestions as to how topic-centred research can also widen the scope and reach of the theory itself, in addition to providing insight into the topic in question.

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# Reversal Theory Constructs, Learning and Grade Orientation, and Academic Risk-Taking

Lafreniere Kathryn <sup>1\*</sup>, Menna Rosanne <sup>1</sup>, Cramer Kenneth <sup>1</sup>, Tippin Gregory <sup>2</sup>, Ianni Phillip <sup>1</sup>

1 : University of Windsor  
Windsor, Ontario

2 : Lakehead University  
Thunder Bay, Ontario

\* : Auteur correspondant

Students often act against their own best interests in the academic setting, engaging in risky behaviours such as procrastination, skipping classes, and not studying enough for tests. The present study examined personality, temperamental, and reversal theory predictors of academically risky behaviour. Previous research by our team examined reversal theory predictors of risk-taking in late adolescent university students (Lafreniere, Menna, & Cramer, 2013). Our previous research identified proactive rebelliousness and low effortful control (i.e., difficulty in suppressing tendencies to avoid a task) as predictors of the likelihood of engaging in academically risky behaviour. Other research by members of our team (Tippin, Lafreniere, & Page, 2012) examined predictors and consequences of having a learning orientation (i.e., being primarily oriented towards acquiring new knowledge and mastering material) versus a grade orientation (i.e., where attainment of high grades is the primary goal). Learning orientation (LO) and grade orientation (GO) (Eison, Pollio, & Milton, 1986) represent two contrasting approaches that students may adopt toward their university education. Eison et al. proposed a typology of student learning approaches, based on combinations of these dimensions. Students who are high in LO and low in GO are typically seen as the desirable students whom professors most like to teach. These students are purported to be more intrinsically motivated to learn, capable of abstract thinking, and able to employ effective study methods. Students who are low in LO but high in GO are thought to be motivated to get high grades, but to approach their academic tasks in a concrete and inefficient manner and to express high amounts of test anxiety. The current study combined these perspectives, by examining temperamental, personality, and metamotivational constructs in relation to learning orientation and grade orientation, to assess their relative contributions to the prediction of engaging in academically risky behaviours.

A sample of 242 undergraduate student volunteers completed an online survey comprised of the following measures: the Motivational Style Profile (Apter, Mallows, & Williams, 1998); the Effortful Control subscale of the Adult Temperament Questionnaire (Rothbart, Ahadi, & Evans, 2000); the LOGO II Scale (Eison et al., 1986); the BFI-10 (Rammstedt & John, 2007); the Composite Scale of Morningness (Smith, Reilly, & Midkiff, 1989); the Cognitive Appraisal of Risky Events (Fromme, Katz, & Rivet, 1997), and the Procrastination Assessment Scale for Students (Solomon & Rothblum, 1984). A brief demographic questionnaire was also included to collect information regarding student age, gender, ethnicity, academic major, and year in program. Correlational findings from this investigation indicated that negativism dominance and paratelic dominance were both positively related to students' overall procrastination and academic risk-taking, while mastery dominance was negatively associated with procrastination. Mastery and telic dominance were positively related to learning orientation, while negativism dominance and paratelic dominance were both associated with grade orientation. Regression findings indicated that low effortful control and high grade orientation were the most influential predictors of academically risky behaviour, with negativism dominance predicting some additional unique variance in academic risk outcomes. A causal model of the influence of personality, temperamental, and reversal theory constructs in relation to learning and grade orientation and academic risk-taking will be presented. Findings from this investigation will contribute to knowledge on academic risk-taking and recommendations for enhancing the success of programs aimed at addressing academically risky behaviours and increasing student engagement.

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# The Enjoyment of Negative Emotion

Rabalais Ann-Marie,\*, Desselles Mitzi<sup>1</sup>, Castille Chris, Apter Michael

1 : Louisiana Tech University  
PO Box 10048 Ruston LA 71272  
[latech.edu](http://latech.edu)

\* : Auteur correspondant

According to the affective circumplex model (Russell, 1980) as well as other research (Tuccitto, Giacobbi, & Leite, 2010), negative emotions such as fear, anger, grief, anxiety, and disgust are only experienced unpleasantly and never enjoyed. However, there seems to be circumstances in which psychologically healthy individuals can actually gain enjoyment out of these alleged negative emotions (Apter, 2007). Parathic emotion is a concept proposed by Apter, which can be defined as the enjoyment of negative emotion. Parathic emotion may be experienced when one is in the parathic state, highly aroused, and within a protective frame. The first objective of this work is to differentiate between unpleasant negative emotion and parathic emotion. A second objective is to explore whether the experience of parathic emotion is a key driver of movie satisfaction. It was hypothesized that (1) negative emotion can be experienced in one of two ways: unpleasantly and enjoyably, (2) parathic emotion will be positively related to movie satisfaction, and (3) unpleasant negative emotion will be negatively related to movie satisfaction. Participants consisted of 246 individuals who self-selected into a movie of their choice at a cinema. A factor analysis was conducted and indicated that all items loaded onto corresponding factors, consistent with our conceptualization of negative emotion and movie satisfaction. A simple linear regression was performed to test the hypotheses. The results confirmed the hypotheses. Parathic emotion uniquely related to movie satisfaction ( $r = .34, p = .002$ ) of the variance in movie satisfaction ( $p$

# Predicting Tolerance for Deceit: Integration of Reversal Theory and the Social Normative Model

Desselles Mitzi <sup>1\*</sup>, Theys Evan, Walczyk Jeffrey

1 : Louisiana Tech University  
PO Box 10048 Ruston LA 71272  
[latech.edu](http://latech.edu)

\* : Auteur correspondant

When is a lie acceptable? Walczyk's Social Normative Model of Tolerance for Deceit (SNM) (2013) is concerned with attitudes in response to a lie. The model does not aim to explain why someone lies (i.e., motivation to lie); rather, the focus of the model is on tolerance of a lie by a third-party observer, based on the assessment of the liar's motivation and the potential impact of the lie. According to SMN, tolerance of deceit is influenced by norms for reciprocity and social responsibility. SNM predicts that individuals will be less tolerant of lies when: a) there is a close relationship between the liar («agent») and the person being lied to (the «target»), and b) the lie is perceived as significant or severe. Reversal theory (RT) (Apter, 1982, 1989, 2001) provides an alternative perspective on tolerance for deceit, by focusing on the characteristics of the observer, as opposed to the lie, the agent, or the target. In the present work, we predicted that motivational state will explain a different, incremental portion of the variance in tolerance for deceit, such that the combination of SNM and RT factors is stronger than each separately. Observers in the telic state were hypothesized to be less tolerant than those in the paratelic state, and observers in the conforming state will be less tolerant than those in the rebellious state. No predictions for the transactional states were posited, because tolerance is likely to be influenced by the extent to which the observer identifies with the liar or the target. In Study 1, participants were shown a vignette depicting a job interview in which the applicant was asked about past drug use. Four versions of the vignette were created to manipulate the two factors in the SNM, each of which had two levels. The closeness of the relationship between agent and target was either (strangers vs. nephew and uncle). The severity of the lie was either low (applicant had tried marijuana once in his early teens) or high (applicant regularly smokes crack cocaine and plans to continue). Manipulation checks revealed the vignettes effectively represented the intended levels of the SNM factors. Participants' motivational states when reading the vignette were gathered via the to the Reversal Theory State Measure (RTSM). A hierarchical multiple regression was conducted to predict tolerance for the lie, with severity of the lie, closeness of the relationship, and two RT states (telic-paratelic and conforming-negativistic) as predictors. In the first stage of the analysis, the SNM variables were entered simultaneously and significantly predicted tolerance for deceit in the hypothesized direction,  $F(2, 202) = 26.13, pF(2, 202) = 5.37, p$

# Reversal Theory and Design: A First Step to Disclose the Theory to Designers

Scarpellini Ilaria<sup>1</sup>, Van Midwoud Fleur<sup>1</sup>, Huijgen Roderick<sup>1\*</sup>, Fokkinga Steven<sup>1</sup>, Desmet Pieter<sup>1</sup>

1 : Industrial Design Engineering Technische Universiteit Delft (IDE TU Delft)  
Landbergstraat 15 2628 CE Delft  
<http://www.io.tudelft.nl/en/>

\* : Auteur correspondant

## 1. Introduction

Reversal theory has been applied to numerous practical fields in the past decades (Apter, 2013). More recently, the theory has also seen some application in product design; i.e. the practice of developing the functionality, use and aesthetics of products and systems that people use in everyday life. Specifically, the theory has been applied in projects focusing on designing better user experiences of products. User experience (UX) can be defined as the perceptions, emotions, and associations that result from the (anticipated) use of a product, system or service.

For example, Gielen (2011) has shown how design students dealt with certain aspects of reversal theory in an assignment to design for children's play and learning. Fokkinga and Desmet (2012a & 2012b) demonstrated how negative (paraphatic) user emotions can enrich the user experience with the use of protective frames. Both these applications show that theories like reversal theory can add a deeper understanding of user experience and lead to more satisfying products.

Although these initial explorations into the use of reversal theory in the design process are interesting, they are also limited, because they have been focused on fragmented insights. We propose that the theory will be more useful for design when disclosed in its holistic character. Our challenge is therefore to develop a 'tool' that discloses the theory to designers. This tool should take into account the key insights of the theory, and be presented in a format that considers the unique mindset of designers and the challenges they face in the creative process. This paper discusses the insights from the development of this tool and presents an initial version.

## 2. Presenting reversal theory holistically

Deviating from the practice of using fragmented insights from reversal theory in design, we argue that there are several reasons why designers would benefit from understanding reversal theory holistically.

First of all, because the different insights of the theory are all interrelated, applying just fragments of it can lead to design proposals that do not reflect the fundamentals of the theory. For instance, a designer could create a product for long use that specifically caters to the paratelic state, while neglecting the more principle insight that the user is dynamic and will thus not always be in this state.

Furthermore, more advanced topics of reversal theory, like the concepts of psychodiversity or dynamic personalities, are arguably also some of the most interesting aspects of the theory to apply in the design process, but can only be understood with a comprehensive overview of the theory.

Lastly, and perhaps most importantly, as the scope of design intent vastly expanded in the last decades, from physical ergonomics (1940s) and cognitive usability (1970s) to addressing the whole of human experience and wellbeing (2000s), the need has arisen for theories that holistically explain human experience and behavior. Reversal theory shows how design can influence UX directly by changing the context, but also indirectly by influencing motivational states through context (see figure 1).

Figure 1 Design influence on UX in reversal theory

## 3. Design oriented theory

Roozenburg and Eekels (1995) discuss the fundamental differences between the scientific/empirical process, which translates the observable world to a mental model, and the creative process, which does the opposite. Research is reality-driven, focuses on aspects and aspires to understand; Design on the other hand is possibility-driven, focuses on totality, and aspires to create (Desmet & Schifferstein, 2012).

Translating psychological theory into design tools is part of a tradition in design research, and a way for dealing with this mismatch. In general, this translation takes place on two levels. On a practical level, it relates to how information is represented; visual diagrams, schemes and examples usually work better in the design process than long texts. On a more fundamental level, it relates to how designers interact with the tool. Although there are many characteristics that determine this interaction, three are specifically important to discuss. Firstly, active learning, which entails that the designer masters a set of insights by applying them in (design) exercises, rather than only reading about them. Secondly, by making the tool engaging to use (one could say, paratelic) it becomes intrinsically motivating, which increases the time and attention that the designer spends on the tool. Finally, there should be flexibility in the way the tool can be used to accommodate for the dynamic and erratic creative process.

#### 4. The Tool

A tool is proposed that discloses reversal theory holistically to designers in a way that aligns with the characteristics of the creative process. The initial tool consists of a set of cards categorized according to their relation to interesting aspects of reversal theory (e.g. the reversal, dynamic personalities, cognitive synergies). The cards represent three different layers of information, from abstract to concrete, that gradually help to put the theory to practice.

Definition cards express the most abstract level, necessary for a deeper understanding of the theory beyond the relation with design. These cards mainly serve as a glossary that explains the terms mentioned in the insights. Insight cards explain how the theory is relevant for designers. These clarify the connections between cards within the same category, and represent the connection that allows understanding the theory in relation to its application. Tip cards provide inspiration triggering the designers to think in terms of uncommon perspectives, and support the designer in the application. Secondly, rule cards explain boundaries that should be accounted while applying the theory.

The interaction with the card set is structured as a game in multiple rounds, which embodies the three qualities of active learning, intrinsic motivation, and flexibility.

#### Figure 2 Example first iteration cards

##### User test: method

The initial card set was tested with several industrial-design students. None of the participants had prior knowledge of reversal theory. In these first tests the cards were used without a game structure. The test aimed to find out whether the insights and definitions were clear enough, whether the different layers support a better understanding of a topic, and whether designers find the tool and theory engaging. The participants were introduced to the tool by exposing them the topics of the theory and discussing their understanding of the information given, asking them to come up with examples. Their feedback on the tool and the results will be implemented into redesigns that will be retested with other participants.

##### User test: results

One important insight was that designers found it difficult to relate to the terms used in the theory, despite the definition cards. Secondly, the participants had difficulties coming up with examples without input from the researchers. It might help if the tool features practical examples to provide more context. Lastly, the large amount and variety of information was sometimes more overwhelming than inspiring.

#### 5. Discussion

Several improvements to the tool are being planned. The language used may need to be more concrete and contextualized. The cards within a category should be more clearly connected to each other. Nevertheless, they should be presented in a semi-random way to facilitate the designers to find their own path. Subsequent tools and tests will focus on the effectiveness of different game strategies in helping designers understand and apply reversal theory. Furthermore, a decision will be made about which form factor is most suitable; tangible (e.g., a card set) or digital (e.g. an application). A tangible tool has more flexibility in use, whereas a digital tool has obvious advantages in terms of distribution.

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# Development of an Implicit Measure of Meta-Motivational State

Thomas Laura<sup>1</sup>, Oliver Emily<sup>1</sup>, Hudson Joanne<sup>2</sup>

1 : Aberystwyth University (AU)

Department of Sport and Exercise Science, Carwyn James Building, Aberystwyth University, Penglais Campus, Aberystwyth, Ceredigion, SY23 3FD

2 : Aberystwyth University (AU)

Department of Sport & Exercise Science, Institute of Human Sciences

The process of reversing has received limited investigation, partially attributable to difficulties in assessing meta-motivational states. Two laboratory-based studies were completed to develop an implicit measure of meta-motivational state using an adapted Stroop protocol. It was posited that stimuli associated with current state would capture attention, increasing response latency. Five experts rated an initial word pool for theoretical fit; acceptable items were matched across state pair for complexity, resulting eight items per state. Data screening confirmed nonsignificant differences in stimuli response latencies between and within meta-motivational states. The resultant Meta-motivational Stroop (MMS) presents 160 randomised stimuli (20 per state) taking approximately two minutes to complete. Frequency analysis using the MMS, the Telic/Paratelic State Inventory (O'Connell & Calhoun, 2001) and State Of Mind Indicator For Athletes (Kerr & Apter, 1999) revealed consistent assessment of state on 46% and 51% of participants (n= 66), respectively. Contrary to expectations, T:P latency and the TPSI were positively correlated ( $r = .239; p = .053$ ); indicating increased telic response latency when in a paratelic state. To assess the ability of the MMS to detect state changes, study two used Hudson and Day's (2012) expressive writing procedure and Apter's (1999) imagery technique to induce state (n= 30). Manipulation checks indicated that this priming task was not successful for 10 participants. Existing measures identified differences in state for both those that did and did not adhere to the manipulation. No significant difference in response latency ratio between adherers in the serious and playful writing conditions was evident. Measuring state may act as a contingent event inducing a reversal; tasks used to prime meta-motivational state appear to require refinement. The challenge of preventing measurement-induced reversals remains. Despite these inconsistent results an implicit measure of meta-motivational state may be a fruitful line of research, to overcome limitations of time-consuming or explicit measures (e.g., Fazio, 1986).

# Using the RT in coaching sessions for management and everyday life issues

Lunacek Christophe <sup>1\*</sup>

1 : Apter France  
Apter France  
9 boulevard Rochechouart 75009 Paris  
[www.apterfrance.com](http://www.apterfrance.com)  
\* : Auteur correspondant

The questions we try to answer are:

- How concrete and applicable are the concepts as «Protective Frame» and «Mental State» when working with people who are dealing with management and or everyday life issues?
- How do we translate these concepts during change coaching experiences?

Our study is based on our 6 years' experience as management consultants and coaches. This has led us to build a «6 steps Methodology» and to emphasize two key points of the RT that make this methodology particularly valuable or leveraging. It is applied on specific area of coaching that we call Change Coaching and is dedicated to people who are suffering (undergoing) an unsatisfactory situation they cannot change or think so. This is to be distinguished from «Life Coaching» or other sort of practices, where changes are not obviously at stake.

Our presentation includes:

## THE 6 STEPS' METHODOLOGY

### 1.1. A generic case study

The case is about a women of 42, director of a Caring Institution who feels depressed and unable to deal with family patients' inquiries and complaints. In parallel, a close parent of hers is currently dying of cancer and she feels in fact incapable to sincerely listen to her clients.

### 1.2. The 6 steps' methodology

Step 1: Reject the negative alternative «Act or Suffer ( Undergo), take some distance and allow oneself to consider having the choice between acting and changing the situation or changing one's mindset

Step 2: Identify the active mental states while experiencing the problem

Step 3: Explore other ways of directing one's desire

Step 4: Change one's mental statues and adapt one's motivation

Step 5: implement the changes imin the new mental states

Step 6: Consider being able to eventually change the initial situation in this renewed perspective

### 1.3. Two more case studies to illustrate how the methodology applies

One is telling the story of a man who is asked to improve his management skills by his harassing boss. She is up to retired but cannot really give up with putting more and more pressure on him. The new coming boss think that an external coach might help but the coachee takes it as a supplementary stress... this case introduces the concept of protective framework as a preliminary to change.

The other case study is about a worker loving his job until a new team leader takes the department in charge. For then, he not only feels oppressed but also resent the new boss and starts to get less and less motivated. Exploring the options alternative as well as the eight ways of being will progressively help her to regain wellness and motivation. The insights given to her on the different components of a mental state (emotions / sensation...) are highlighted in this case study.

## THE SPECIFIC ROLE OF THE «PROTECTIVE FRAME»

### 2.1. Establish a paratelic state allows cognitive synergies and helps people to change

According to our experiences we noticed that at step 2 of our methodology we develop various skills to establish a paratelic state. We shall give examples of them and logically demonstrate that it leads people to allow themselves to accept the possibility of coexisting antagonist options and therefore the possibility of change

### 2.2. The coaching process and the coach both represent a real protective frame

Through various examples, we shall illustrate that a coaching process as well as the rules leading this process (clear coaching contract) consist in a real (tangible) protective frame.

### 2.3. How to implement a protective frame in between each coaching sessions?

In this part of our presentation we shall present our experiences and skills related to that matter.

## HOW TO USE THE «MENTAL STATE» CONCEPT IN CHANGE COACHING?

### 3.1. How to make people understand that they can orient their desires

As the RT is a phenomenological approach, we can testify that most of our coachees and trainees easily catch up with the concept of changeable mental states. And that is just by asking them to recall their own experiences of inconsistency.

Then they are keen on getting able to do it at will and eager to learn how to do so. We shall show how helpful and valuable it is for a coach to be able to lean on the RT and its detailed structure of mental states as well as its description of the mental states components (Core Values, desired feelings, desired outcomes and emotions)

### 3.2. The Compass image as a pedagogical tool

Finally, we shall show a very simple tool we use. It is an image of a compass showing the 8 mental states

#### Addendum

The study has been conducted by Jean Rambaud and Christophe Lunacek, who are not scientists but consultants using the AMSP tool since 2006 within French organizations. Creators of Apter France SARL (with two other French RT tools' users, Stéphane Baetche and Frédéric Lincker) they have taught more than a hundred trainers and coaches to RT Fundamentals and train them on how to use the AMSP and the ALPS instruments. Further on, they have closely worked with Professor Michael Apter on many different topics in order to find concrete applications within the business world (how to deal with stress? How to improve team working?). Christophe Lunacek and Stéphane Baetche attended the 15th RT conference (Washington ? 2011) and gave a presentation on «Using the ALP as a teambuilding tool»

The methodology is currently being formalized in the perspective of publishing a book to make the RT popularized in France. The title will be: «Réjouissez-vous : Manuel Anti - Prise de Tête» («Rejoice : Small Anti-Hassle Manual»). ? Inter Editions ? November 2013).

# The Reversal Theory State Measure (RTSM): The Development of a ?Gold Standard? State Measure

Desselles Mitzi<sup>1</sup>, Murphy Stephanie, Theys Evan, Apter Michael

1 : Louisiana Tech University  
PO Box 10048 Ruston LA 71272  
[latech.edu](http://latech.edu)

Metamotivational states of mind are the cornerstones of reversal theory, yet previous research on the theory has focused predominantly on dominance. Perhaps one reason for the scarcity of research at the state level has been the lack of a comprehensive measure. Ideally, such a measure would cover all eight states and be suitable for use across a range of research scenarios. While previous measures have been developed, most have been limited to a subset of states (typically the telic-paratelic pair) or applicable to specific populations or situations (e.g., athletes, dieters). Recent technological advances such as smartphones have made assessing individuals' moment-to-moment state of mind throughout the day more feasible. In addition, advances in quantitative analysis techniques have made the analysis of multilevel data more accessible. Advances in multilevel modeling (MLM) are making it possible to assess the impact of moment-to-moment changes within individuals on dependent variables operating at the between-persons level. The present research reports on the development of a comprehensive motivational state measure, building upon previous instruments and following a rigorous psychometric protocol. The objective was to develop a condensed state measure suitable for multiple administrations per day via smartphone or similar technologies with minimal interruption. The early version of the measure consisted of 56 items identified in previous research or created by a team of subject matter experts. This version was administered to over 600 college students and adults from diverse backgrounds. Factor analysis and other psychometric techniques revealed a highly interpretable solution, although difficulties were observed in the structure of the transactional pairs. Specifically, factors representing the crossed transactional pairs (autic-mastery, alloic-mastery, autic-sympathy, alloic sympathy) were more interpretable than the uncrossed transactional pairs (autic, alloic, mastery, sympathy). Three versions of the Reversal Theory State Measure (RTSM) emerged: a short, 3-item «bundled» version, a 12-item «branched» logic version, and a longer 18-item version. All versions measure all four domains in reversal theory. The three RTSM versions and their respective scoring logics will be shared with the RT community to encourage its development as an open-source instrument. Examples of multilevel research designs currently underway using the RTSM will be discussed, as well as future research directions.

# Waiting Experience And Reversal Theory

Van Hagen Mark <sup>1\*</sup>, Galetzka Mirjam <sup>2</sup>, Pruyn Ad <sup>2</sup>

1 : Netherlands Railways (NS)

Hoofdkantoor NS 17K33 PO Box 2025 3500 HA UTRECHT the Netherlands

2 : University of Twente (UT)

NL 7500 AE Enschede The Netherlands

<http://www.utwente.nl/en>

\* : Auteur correspondent

Waiting time is an important part of the journey for train passengers but little is known about the waiting experience and how this is related to the waiting environment and time perception.

A few studies have been published over the years on how the process of estimating time actually works. The most important of these studies were the storage size model (Ornstein, 1969) and the attentional model (Zakay, 1989).

## Storage size model

Ornstein (1969) presupposed that the sense of time in retrospect is a positive linear function of the complexity of the number of stimuli. He employed the metaphor of neurological storage capacity and alleged that time takes longer the more units of information (discrete events) are stored per event, the more events take place, the more events differ from one another and the more complex events are. Hence a period in which nothing seems to happen seems (in retrospect) to have passed more quickly than one in which many different and complex activities took place. The more attention we pay to external stimuli, the more impressions we gather that we can remember and even more subjective time can be ascribed to all those memories whereby the period seems to have lasted longer.

## Attentional model

Zakay (1989) hypothesized that time estimation in prospect is a cognitive process whereby each stimulus is perceived by two processors:

a timer that processes time information, and a processor that processes timeless (i.e. not time-bound) information.

Apparently, during an interval, attention can be processed in both ways. Temporal processing implies that people are consciously aware of the passing of time (for example, by guessing how long one has already been waiting). Non-temporal processing is the pondering on issues that are not time-related. The more temporal information is processed, the longer the interval seems. Pleasant surroundings, information, activities and other forms of distraction result in less information being temporally processed, which in turn reduces the perceived waiting time.

## Overall design of studies

According to the Stimulus Organism Response (SOR) model (Mehrabian & Russell, 1974) environmental stimuli influence cognitive and affective processes which in turn determine approach or avoidance behaviour. The environment influences through its degree of arousal the hedonic tone, the sense of control and the waiting experience. Together these three factors determine approach or avoidance behaviour. Depending on the context, two levels of optimal stimulation can be distinguished that influence the hedonic tone (Apter, 2007). The combination of the number of environmental stimuli (few or many) with density (quiet or busy) or motivational orientation (must = hasty or lust = not hasty) determines how passengers experience the platform and the wait.

Nine (field and VR) studies were completed that distinguish between two different environments: a stimulating versus a calming one. A calm environment was created with environmental stimuli, such as cool colours, dimmed lighting, soft music, little distraction and few people on the platform. A stimulating environment, on the other hand, was created with warm colours, a high light intensity, stimulating (up-tempo) music, distraction and many people on the platform. We expected a stimulating environment to result in a lower hedonic tone for must passengers than for lust passengers.

Various authors have ascertained that the degree of congruence of the number of stimuli in relation to the goal-directedness of the consumer or the experienced crowding determines the experienced pleasure. According to Massara, Liu and Melara (2010), a high level of pleasure is attained with an optimal level of activation. Goal-directed consumers experience more pleasure with little

arousal and much dominance (hypo-activation) and non-goal-directed consumers experience more pleasure with much arousal and little dominance (hyper-activation). Many environmental stimuli, such as a busy platform, demand a great deal of mental attention and can be experienced as too stimulating, whereas lack of stimuli (i.e., on a very quiet platform), can be felt to be tedious. By combining the arrangement of Massara et al., (2010) with the states of Apter's reversal theory (2007), the following four groups can be distinguished:

Many stimuli + crowded environment + must orientation = non-congruent hyper-activation: Anxiety  
Many stimuli + crowded environment + lust orientation = congruent hyper-activation: Excitement  
Few stimuli + quiet environment + must orientation = congruent hypo-activation: Relaxation  
Few stimuli + quiet environment + lust orientation = non-congruent hypo-activation: Boredom

## Results

Overall, the nine studies revealed that when platforms are busy, the number of stimuli should be minimized, but when it is quiet, stimuli should be added. For instance, at quiet moments passengers experienced greater pleasure when stimulating music was played, whereas at busy moments it was the other way round (i.e., greater pleasure when calming music was played). Warm stimulating colours (i.e., red and yellow) were associated with pleasure, but only for lust (non hasty) passengers. In contrast, must (hasty) passengers leaned more towards the calming colour blue. These findings concur with those of Massara, Liu and Melara (2010), and can be successfully explained with reversal theory where by mildly incongruent stimuli afford the most positive station evaluation and waiting experience. It became evident that stimulating music, warm colours and advertising at quiet moments result in greater pleasure than calming music, cool colours and no advertising.

## Environmental stimuli and time perception

The studies also demonstrated that waiting time sometimes seems to pass more quickly in an environment with few stimuli as well as in an environment with many. Time seemed to pass more quickly with the barely stimulating colour blue and dimmed lighting, whereas in the music and infotainment studies time appeared to pass more quickly with stimulating music and fast screen changes on a busy platform. Several explanations may be given for these (apparently) opposite results. For example, we know that conscious attention plays a role when estimating time. Zakay and Block (2004) concluded that the various (pro- or retrospective) research methods determine what holds people's attention, namely the time or other activities. Conscious attention to the time also played a role in our studies, albeit that any contrast was determined by the kind of environmental stimuli. Although every stimulus in the environment is perceived and influences behaviour, selective attention allows only few to reach our consciousness. When environmental stimuli are barely consciously perceived (such as cool colours and a low level of lighting) one's attention is not consciously distracted from the time. However, a more stimulating environment (warm colours, high level of lighting) does afford more information processing. Ornstein's storage size model (1969) might offer an explanation here, comparable as it is to the retrospective approach in which more information processing results in a longer estimation of the duration.

When attention is consciously distracted from the time, such as with music, advertising and infotainment, passengers notice their environment more and can even experience a moment of 'flow'. As less processing capacity remains to follow the time, it seems to pass more quickly. Here, in accordance with the attentional model, and as with the prospective approach, distraction from the time affords a shorter estimation of the duration.

Although Apter's reversal theory (2007) paid no attention to the experience of time, it might still explain our findings. Both few and many stimuli can afford a higher hedonic tone in the shape of relaxation (few stimuli) or pleasure (many stimuli) and make time seemingly pass more quickly. Our studies have shown that the test subjects indeed experienced greater pleasure not only with dimmed lighting but also with stimulating music, advertising and infotainment.

Combining aforementioned explanations implies that as satisfied passengers do not pay attention to the time, it seems to pass more quickly (attentional model). Relaxed passengers neither (consciously) heed the time nor their surroundings and are probably so deep in thought that they also estimate the time as shorter (storage size model). Passengers with a low hedonic tone overestimate the time because they are bored due to a long wait (ironic monitor/assimilation theory) or because the wait itself induces stress (stress management theory).

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# The Adventure of a hospitalization; Bringing the reversal theory to the world of design

Ruijs Freya, Desmet Pieter <sup>1</sup>, Sonneveld Marieke

1 : Industrial Design Engineering Technische Universiteit Delft (IDE TU Delft)  
Landbergstraat 15 2628 CE Delft  
<http://www.io.tudelft.nl/en/>

Emotion-driven design generally aims to design products and technology with the intention to evoke pleasant or avoid or reduce unpleasant experiences (Demir et al., 2009). Although relatively young, the design & emotion research domain has produced a rich palette of theoretical and methodological approaches (for an overview, see Desmet & Hekkert, 2009) that support designers in their attempts to 'design for emotion'. Jordan (1999) published his famous pleasure framework, distinguishing sources of pleasure in human-product interaction, followed by influential work by Desmet (2002), Norman (2004), and Hassenzahl (2010). They investigated how products and technology can be developed that evoke enjoyment, pleasure, satisfaction, inspiration, and other kinds of positive experiences.

In this paper, we focus on situations that involve negative emotions that cannot easily be 'solved' through design. Some examples are the sadness caused by the loss of a loved one, the anger caused by being fired for no good reason, the fear caused by awaiting the results of a blood test, or the frustration caused by being stuck in a traffic jam. These are emotion-laden situations in which personal concerns are at stake. Can (and should) design influence these emotions? Can we design a product or technology that reduces the sadness of a person mourning over the death of his spouse? Probably not. It seems inappropriate to assume that design can take away this negative emotion. And yet, at the same time, it is interesting to explore whether design can somehow contribute to the experience in a way that respects the negative emotion, without necessarily aiming to reduce it.

Recently, Fokkinga & Desmet (2012) have shown that the distinction between positive and negative experiences reduces the complexity of emotions experienced in human-product interactions; negative emotions are not always unwanted. They propose that negative emotions can actually enrich user experiences, and explain under what conditions negative emotions can be a rich experience as opposed to plainly unpleasant. The theoretical basis for their framework is 'reversal theory' developed by Apter (2007).

The main question addressed in the current paper is: is it possible to use reversal theory to design products that transform given strong negative emotions into positive experiences? This question is particularly relevant for situations in which the cause of the negative emotion cannot be taken away or solved through design. This paper describes a design case in which this question was explored by designing products that support children who are hospitalized for a surgical procedure. When children are hospitalized, strong negative emotions are not unusual. The challenge of the design case was to use these emotions and transform them into an experience that is not plainly unpleasant, on the one hand. Also, on the other hand respect the negative emotional response and support the children in coping with the hospitalization in a constructive manner.

# THE MARKETING OF RUNNING SHOES THROUGH METAMOTIVATIONAL STATES: A COMPARATIVE CONTENT ANALYSIS OF ASICS AND MIZUNO RUNNING SHOE ADVERTISEMENTS

Watkins Leo<sup>1</sup>

1 : University of East London (UEL)

School of Health, Sport and Bioscience, University of East London, Water Lane, Stratford, London E15 4LZ  
[www.uel.ac.uk](http://www.uel.ac.uk)

## Introduction

The popularity and commercial profitability of running suggests it is a significant site of both popular culture and consumer behaviour. However, with the culturally angled exceptions of Bale (2004) and Gotaas (2012) academic literature has not yet reflected this. Research studies and literature analysing advertisements have typically been rooted in a socio-cultural perspective (e.g. Goldman 1992, Jhally 1990, McCracken 1986, 1988, Stern 1996). Yet work adopting a psychological or psychosocial viewpoint has been less evidenced, often limited to concepts of actual and ideal self (e.g. Banister & Hogg 2003, Escalas & Bettman 2003, Malar, Krohmer, Hoyer, Nyffenegger 2011, Park & John 2012).

This study argues that deeper insights into the psychological relationship between advertising messages and consumer identity and experience are needed, and that Reversal Theory provides a way to achieve this. Studies of online consumer behaviour (Crete 2008), mobile commerce services (Davis 2009), shopping experience (Gillham, Crous, Schepers, 2003), and interactive advertising (Jung, Hang, Kyeong, Martin, 2012, 2013) have all been made using Reversal Theory. More significantly though, Tucker (2012) has evidenced Reversal Theory's ability to analyze advertising, supporting Apter's (2013) call for more research into sites of metamotivational state manipulation.

## Aim

The aim of this study was to use Reversal Theory as an analytical tool for identifying the consumer satisfactions that are presented in the advertisements of two competing running brands. To aid comparison, two brands and advertisements were chosen that are homogenous in their brand positioning, running specific content and duration. The objective of this analysis was to better understand the mechanisms of advertising and their potential impact on consumer behaviour, leading to the identification of new strategies for successful marketing.

## Method

Use of Reversal Theory as an analytical device can be further understood as an extension of the method of content or discourse analysis. This approach seeks to scrutinize the images, language and sounds of a text (which an advert can be understood as) in order to draw out the predominant meaning, themes and narratives. Use of Reversal Theory to identify the metamotivational states being presented, can be understood as an extension of this method.

## Results

Using Reversal Theory to analyze ASICS' 'Better Your Best' and Mizuno's 'The Moment' advertisements reveals that each brand presents their running shoes through different metamotivational experiences. Both advertisement titles explicitly present the type of experience that consuming each brand's running shoes will deliver. The ASICS advert title is rooted in a telic state in which the satisfaction offered to the consumer is attainment of the goal of bettering previous performance. In contrast, the title of the Mizuno advert is located in the paratelic state, conveying the message that wearing Mizuno running shoes will allow the consumer to better enjoy the running experience.

The dominance of these opposing states in each advert is further communicated to the viewer through both the visual and dialogued narrative of each advert. The overall effect of the differing narrative approaches being the manufacturing of two very different experiences. On the one hand the consumer is presented with the ends related experience of the ASICS advert, in which the experience only has meaning through the identification and attainment of a goal. Whilst on the other, the means related experience of the Mizuno advert offers the consumer meaning and value in the experience through the immediate pleasure, rather than the end result, of running.

The contrasts in the metamotivational narrative of each advert are further demonstrated through the use of secondary states of mastery and rebelliousness. Each of these states can be understood

as deriving from the primary state presented in each advert. In the ASICS advert the mastery state is presented through the accomplishments of the female runner in 'bettering her best'. In the Mizuno advert, the negativistic state is presented through the freedom and sense of adventure attached to the experience of running.

However, in their contrasting narratives of running, similarities can also be found. Both advertisements present running as a highly individualized experience, in which the runner is identified as being both an isolated silhouette and embroiled in a personal battle with one's self. Thus the experience of running is clearly communicated through the self-orientated autic state, whether telic or paratelic.

#### Discussion

The analysis in this study has supported the work of Tucker (2012) in showing that Reversal Theory presents a valuable tool for identifying the predominant satisfactions offered to consumers through advertisements. The analysis has revealed that the satisfactions offered in the adverts studied operate through the narrative domination of one particular metamotivational state. However, this analysis has also served to support the position of Reversal Theory by identifying the operation of other, secondary states within the manufactured experience of adverts.

Furthermore, this study has demonstrated that opposing metamotivational states can be used with equal effectiveness to frame and present the same class of product, in this case the running shoe. This finding supports Reversal Theory's assertion that we experience things in inconsistent ways, meaning that there can never be a single over-arching account of a given experience. From a marketing point of view, the temptation is to suggest that advertisements should present the experience of a product through as full a range of metamotivational states as possible. However, the drawback to this strategy may be that it dilutes the identity of the brand and product. Further research is required to answer this and other questions emanating from the study.

#### Future Research

To date, this study and the work of Tucker (2012) are the only examples of work applying Reversal Theory to advertising analysis. Future research should extend this application into other economically and culturally significant fields of consumption. Future studies could attempt to discover if particular metamotivational states are used to sell particular classes of product or if different states are equally employed in advertising the same product. Future research should also attempt to uncover metamotivational states in advertising through the eyes of the consumer. Research should seek to discover if consumers experience an advert through the same metamotivational states or if differing consumer interpretations occur.

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Author Correspondence

Watkins, L.

School of Health, Sport and Bioscience,  
University of East London,  
Water Lane, Stratford, London  
E15 4LZ, United Kingdom

Telephone: 07957 321 081

E-mail: [u1243888@uel.ac.uk](mailto:u1243888@uel.ac.uk)

# Motivational Profile of Female Cancer Survivors in Behavioral Clinical Research Trials

Desselles Mitzi <sup>1</sup>, Hughes Daniel, Perkins Heidi, Cuevas Brandi, Darby Nydia, Boggess Terri, Basen-Engquist Karen, Ghosh Sagar, Morris Ruth, Ogden Susan, Garcia Sonio, Ramirez Amelie

1 : Louisiana Tech University  
PO Box 10048 Ruston LA 71272  
[latech.edu](http://latech.edu)

Understanding what motivates cancer survivors can be of great importance in promoting healthy behaviors such as choosing to engage in exercise. Current estimates suggest only 28% of United States adults meet the current public health recommendations for physical activity (Rhodes, Warburton, & Murray, 2009), and this number is lower for women than men (Sternfeld, Ainsworth, & Quesenberry, 1999). This number has not changed despite many public health initiatives and the ever-increasing body of evidence that level of exercise is associated with outcomes on positive end of the cancer experience continuum. Adopting and maintaining a physically active lifestyle improves cancer survivors' well-being and reduces their risk cardiovascular disease, noninsulin-dependent diabetes mellitus, osteoporosis, and second primary cancers. Unfortunately, there is a tendency for many female cancer survivors to reduce their level of physical activity (Brownson, Eyler, King, Brown, Shyu, & Sallis, 2000; Irwin, Crumley, McTiernan, Bernstein, Baumgartner, Gilliland, & Ballard-Barbash, 2003; Courneya 2003). Those who had been active before their diagnosis seldom return to their previous level of activity, and those who were not active tend to stay inactive. Clearly, the experience of cancer is a major life event that may cause a seismic shift in survivors' behavior as well as their core beliefs and motivations. Thus, understanding the motivational preferences of cancer survivors is a necessary component in the design and implementation of behavioral clinical research trials to increase exercise behaviors. We hypothesized that female cancer survivors who volunteer for behavioral clinical research trials may have a unique motivational profile shaped by the experience of cancer. To address this question, we adopted reversal theory (RT) (Apter, 2001; 2007) as the theoretical orientation from which to examine the motivational profile of this specific population. RT is a phenomenological approach to understanding human behavior that posits a structure for the experience of motivation, emotion, and personality. The theory has been used broadly in a variety of applications (e.g., coaching athletes; motivating blood donors; understanding addictions). In the area of exercise behavior, there has been relatively very little research involving RT and exercise. Ekkekakis and Petruzzello (1999) reviewed models from psychology used in exercise research and drew attention to RT as a valid theory, applicable to exercise research. However, these authors also pointed out that RT-based research in this particular area has yet to be fully established.<sup>8</sup> Based on a comprehensive search of the literature, we are aware of no research to date investigating exercise and cancer survivorship from an RT perspective. As part of our clinical research trials aimed at promoting exercise behaviors among cancer survivors, we sought to understand the motivational make up of this population. Understanding what energizes them and the relative importance of various competing motives is a necessary initial step in designing and implementing more effective behavioral interventions. In the study reported herein, we compared the motivational profile of female cancer survivors against a more general population sample of women. Method In four research studies investigating the determinants and adoption of exercise behaviors, female cancer survivors were asked to complete the Apter Motivational Style Profile (AMSP) (Apter, 2010; Apter, Mallows, & Williams, 1998) as part of the study protocol. The four research studies accrued survivors for two female cancers: breast cancer, (n=268) and endometrial cancer (n=100). Both sets of survivor populations were post-treatment (surgery, chemotherapy, or combination) for at least two months. The larger dataset from which the referent sample was drawn consisted of 1,404 American women who had taken the AMSP during the course of managerial training or self-development courses between 2001 and 2012. Others completed the AMSP for extra credit on a undergraduate psychology course. The majority were employed outside the home (91%), although the database also included full-time students (8%) and homemakers (1%). Of those employed, 29% reported holding «executive / managerial» positions, and 25% described their occupation as «professional» (e.g., doctor, lawyer, teacher). The managerial roles were predominantly at the level of middle-management. An additional 11% described themselves as working in an «administrative» capacity (e.g., secretary, clerk). There

was no independent check on the veracity of the occupation reported. The companies in which they worked varied widely in size and focus. Over 500 companies were represented and included large multinational firms, small to medium-sized businesses, educational institutions, national and local governments, and non-profit organizations. Comparison of the age and ethnicity figures for the cancer survivor and normative group revealed significant differences between groups on age and ethnicity. Tests of homogeneity of variance were significant (p

# Reflections on using reversal theory in theory-driven design

Fokkinga Steven<sup>1</sup>, Desmet Pieter<sup>1</sup>

1 : Industrial Design Engineering Technische Universiteit Delft (IDE TU Delft)  
Landbergstraat 15 2628 CE Delft  
<http://www.io.tudelft.nl/en/>

In the last few decades, product design, which concerns itself with designing products and services that regular people use everyday, has increasingly used psychological theories to understand how users experience products, ultimately to improve these experiences through design. This development has partly demystified the process of designing pleasant and engaging product experiences, and allowed designers and researchers to systematically study, discuss and evaluate product experiences and design approaches. Within the field of experience design, the sub-discipline of emotional design has used models from emotion psychology to understand and predict how products can evoke different emotions. The rationale for using a particular model is, apart from apparent reasons such as validity and precision, that it does not only help designers understand psychological phenomena, but also that the content and format of a theory is such that it inspires and empowers them to apply it creatively.

One such psychological theory, appraisal theory (e.g., Frijda, 1986; Scherer, Schorr & Johnstone, 2001), which has been developed since the 1960s and is now the prevailing theory of emotion elicitation, has seen much application in emotional design. Appraisal theory proposes that an internal appraisal mechanism constantly checks whether an external event (stimulus) touches upon an individual's internal concern (e.g. a goal, standard or disposition). When the appraisal mechanism judges that this event matches the concern, it produces a positive emotion; when it judges that the event hinders the concern; it produces a negative emotion; and when it judges the event to be irrelevant for the concern, it produces no emotion (ref). With an innumerable amount of events happening in any given environment, and people having similarly limitless amount of concerns in life, this mechanism is understood to help people to selectively attend to and prepare for the events in our environment that matter, either positively or negatively. Several concepts in emotional design, such as design for positive emotion (Desmet, 2012), design for conflicting concerns (Ozkaramanli & Desmet, 2012) and rich experience design (Fokkinga & Desmet, 2012a) have taken the model of appraisal theory as its starting point. Appraisal theory has been used in these approaches for its relative simplicity in outline and principles, and versatility in the ways it can explain emotional phenomena and be applied in the design process. However, the application of appraisal theory in design also has certain limitations. Firstly, it offers little insight as to which concerns are prevalent in a given situation. Secondly, as it only describes the elicitation of singular emotion, it does not offer much insight in dynamic experiences that involve multiple events and emotions over time. Thirdly, it has a limited ability to explain more complicated emotional phenomena, such as why people sometimes enjoy seemingly aversive stimuli like rollercoasters and horror films. This paper proposes that design approaches that were developed with appraisal theory can benefit from the insights that reversal theory offers in these areas. Furthermore, it proposes that this exercise illuminates some elements of reversal theory that could be further explored to make it even more applicable in the design process.

The comparison between appraisal theory and reversal theory shows an obvious initial difference: appraisal theory is primarily an emotion theory, and as such limits itself to explain how are evoked, whereas reversal theory is much wider in scope, aiming to explain the whole of human motivation, emotion, and personality (Apter, 2007). However, the theories have a clear similarity in their basic premise: the proposition that the elicitation of emotions depends on an internal concern or motivation. The largest difference following this premise is that reversal theory goes much further in proposing a certain structure underlying the motivation, with the introduction of meta-motivational states and reversals. Nevertheless, this additional structure is not incompatible with appraisal theory as such, and reversal theory concepts such as satiation and contingency can also be given a place in the appraisal model.

This basic comparison between the two theories allows design approaches that have previously sprung from appraisal theory to be re-examined through the perspective of reversal theory, in an attempt to use its added structure and explanatory power to improve these approaches, or even come up with new ones. One such example is design for emotionally rich experiences, which are defined as experiences involving mixed emotions that are connected in a meaningful way,

such as the experience of seeing one's child grow up and move out of the house (happiness and sadness). In a previous phenomenological study that used the model of appraisal theory to unravel which mixed emotional experiences are considered rich, five strategies were proposed that designers could use to create such rich emotional experiences (Fokkinga & Desmet, 2012b). A re-examination of these results shows that all five can also be understood through reversal theory concepts. This affords a new perspective on these strategies and suggests new, more structured ways to apply them. To illustrate, one strategy involved the elicitation of a negative emotion of which the outcome of that emotion would be beneficial to the person and appropriate for the situation (for instance, eliciting anger to make someone more assertive). From the perspective of reversal theory, this same strategy can be interpreted as making someone switch to a more beneficial state (in the previous example: making them switch to the negativistic state). The structure of reversal theory adds insight as to which states (or emotions) are possible to elicit in a situation, and which switch would be most appropriate for that situation. For the other four strategies proposed in the study, similar examples can be made.

The juxtaposition of reversal theory with existing emotional design methods also raises some questions that design researchers and reversal theorists could explore together. Firstly, design does not focus on the existing world but on worlds that do not yet exist, but are hopefully realizable. A general question to be explored in the application of reversal theory in design processes is how to make use of the relevant variables in a way that is appropriate for this future world of possibilities. Secondly, as reversal theory emphasizes the dynamic nature of human beings, it could be fruitful to get more insight into the development of experiences over time. For example, is it possible to predict or influence the frequency and duration of different states and reversals over time? And, are certain sequences of motivational states especially enjoyable or engaging? Such insights could allow designers to structurally design rich product experiences over time, like a filmmaker directing the emotions and thoughts of a film audience. Thirdly, there are some emotions that are often considered in emotional design approaches and that are considered as part of the emotional canon, but which are missing from the list of emotions that reversal theory proposes? the most obvious one being sadness. It would be interesting to explore how this emotion can have a place within the theory or its application. Lastly, design research has developed many approaches and tools in the past decades to measure the experience people have with an existing or new product or environment, such as cultural probes and experience sampling, which are meant to provide data that do not only inform but will also inspire the designers that work with it. It would be interesting to see if a similar measurement tool could be developed that is true to the principles of reversal theory. This tool should be as dynamic and engaging as the theory it is derived from.

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# Exploring Reversal Theory in Relation to Consideration of Future Consequences: Differential Prediction of Risky Behaviour in University Students

O'neil Ashlyne <sup>1\*</sup>, Lafreniere Kathryn <sup>1</sup>

<sup>1</sup> : University of Windsor  
Windsor, Ontario

\* : Auteur correspondant

Risky behaviours such as substance use and academic risk taking often involve both immediate and distant consequences. Past research has focused on the consideration of future consequences (CFC) as an important predictor of such risky behaviours as drinking alcohol (Beenstock, Adams, & White, 2010), taking drugs, smoking, not wearing a seat belt (Daugherty & Brase, 2010), and procrastinating (Strand, 2011). CFC is used to examine the extent to which an individual considers more distant consequences rather than immediate outcomes (Strathman, Gleicher, Boninger, & Edwards, 1994). This is traditionally measured as a single factor; however, in 2008, Joireman, Balliet, Sprout, Spangenberg, & Shultz provided evidence for the usefulness of separating the scales and suggested that the immediate and future subscales may be used to differentially predict certain behaviours and individual differences. For example, it has been suggested that smokers are more concerned with immediate consequences of their behaviour (Adams, 2012), and that those concerned with future consequences are less likely to procrastinate on academic tasks (Strand, 2011). Future research examining the usefulness of separating the CFC into two subscales is important. Likewise, more research is needed to test the predictive ability of these scales to provide explanations for risky behaviours.

Reversal theory (RT) can also be studied in relation to risky behaviours. This theory deals with motivation, emotion, and personality, proposing general principles that allow for insight into paradoxical and inconsistent qualities of human nature (Apter, 2007). However, despite the dynamic nature of RT and its suggested usefulness in predicting and explaining risky behaviour, most of the research on the topic surrounds smoking and smoking cessation. For example, Burris and O'Connell (2003) found that adolescent smokers are more likely to be in a paratelic state when tempted to relapse, but that they will work harder to satisfy that temptation when in a telic state. Published articles on other risky behaviours are minimal.

While there seems to be a conceptual relationship between CFC and certain aspects of RT, only one study directly examines these two variables in relation to each other (Lafreniere & Cramer, 2006). The current author was unsuccessful in locating published research exploring the similarities and differences in the ability of CFC and RT to predict risky behaviours. Obtaining a better understanding of how these theories relate to one another, as well as how they can be used to predict and explain risk behaviour has both theoretical and practical implications.

A sample of 202 undergraduate students participated in this study and completed an online survey which included the following measures: the Motivational Style Profile (Apter, Mallows, & Williams, 1998); the Consideration of Future Consequences Scale (Strathman et al., 1994); the Cognitive Appraisal of Risky Events (Fromme, Katz, & Rivet, 1997); a demographic profile, and a substance-use questionnaire designed to assess how frequently and how heavily students use specific substances such as alcohol and marijuana.

The RT constructs of telic dominance and negativistic dominance were significantly correlated with both subscales ? immediate (CFC-I) and future (CFC-F). Furthermore, while the CFC-I and the composite CFC scores were significant predictors of overall risky behaviour, telic and negativistic dominance better predicted specific risk taking such as drug and alcohol use, as well as risky behaviour in general. The relationship between reversal theory and CFC is discussed, along with their differential utility in predicting risky behaviour.

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# Reversal theory and compassion focused therapy for human flourishing.

Wright Jonathan <sup>1</sup>

1 : University of Brighton  
School Of Health Professions University of Brighton Robert Dodd Building 49 Darley Road Eastbourne East Sussex  
BN20 7UR  
<http://www.brighton.ac.uk/>

This paper introduces compassionate focused therapy (CFT) and explores commonalities with reversal theory. It will be suggested that a reversal theory/CFT perspective could help people who experience reversal inhibition, or become 'stuck' in metamotivational states and possibility facilitate the experience of optimal states.

Reversal theory suggests that happiness and health require an instability and psychodiversity to approach the various situations that can arise in life in different ways (Apter, 2007). From Apter's perspective, being able to experience metamotivational states at the right place and appropriate time is important for health and human flourishing. By enabling people to experience the eight metamotivational states, each of which has a core «feeling» that a person will try to optimize (Apter, 2007), it would seem plausible that people could be helped to have different optimal experiences.

CFT emphasises the importance of early attachments and our affect regularity systems to our wellbeing, and has been described as being a multimodal therapy that has been built on a variety of therapies and interventions (Gilbert, 2010). CFT is rooted in an evolutionary, neuro- and psychological science model that borrows heavily from Buddhism (Gilbert, 2010, p9). Although Gilbert does not mention reversal theory specifically in his writing, there are striking similarities between CFT and reversal theory. For example, according to Gilbert (2010, p24) our minds are motivated for different goal pursuits and to create different mentalities according to the bio-social goal(s) being pursued. Clearly, mentalities overlap... and people switch between them. Not only does CFT recognise, as is the case in reversal theory, that people switch between 'mentalities' (or what in reversal theory terms would be metamotivational states) but it also considers the ability to switch between them as a mark of a person's health (Gilbert, 1989). Moreover, CFT, like reversal theory, subscribes to there being different positive emotions that are associated with feelings of calm and wellbeing (Gilbert, 2010). Gilbert asserts that people's capacities for experiencing wellbeing can be stimulated in therapy.

Within this presentation, the possible relationship between threats in our affect regularity system and metamotivational states will be highlighted and the possible mechanisms for facilitating reversals will be discussed. The combination of reversal theory and CFT will be considered as a means of enhancing our understanding and treatment of people in emotional distress and facilitating optimal experiences.

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# Good moments in family therapy and reversals of motivational state

Duriez Nathalie <sup>1</sup>

1 : Université Paris 8 (LPN, EA 2027)

*Université Paris VIII Vincennes-Saint Denis : EA2027CSAPA Monceau*

2 rue de la Liberté 93526 Saint-Denis cedex

<http://lpn.paris8.free.fr>

Change process research (CPR) is the study of the processes by which change occurs within a psychotherapy. Our studies in family therapy (Duriez, 2007, 2009, 2011, 2013) revealed that change processes are unpredictable and non linear. Two paradigms led us to refer to the reversal theory (Apter, 1989) in order to better understand change : the chaos and the events paradigms. Chaos, complexity, and self-organizing theories provide alternative meanings for disorder and therapeutic change. In family therapy, therapeutic change occurs when the system is far from equilibrium (Prigogine et Stengers, 1984 ; Elkaim, 1990). Equilibrium represents safety and stability but also entrenched defenses. During therapy sessions, sometimes a threshold for radical change is reached as a bifurcation point. At the bifurcation point the system goes back into a familiar cycle (a regression), or it shifts to a new level of organisation, a quantum leap (a progression). A bifurcation point is « a branch, where there are two distinct choices available to a system » (Coveney and Highfield, 1995, p. 424).

Bifurcations occur during moments of instability and emotional intensity provoked by significant events. The events paradigm (Elliott, 1985) focuses on helpful events during the therapy sessions in order to better understand the underlying change mechanisms in psychotherapy. The « now moment » described by Stern (2004) refers to a moment which is affectively charged. All participants are fully absorbed in the present and system stability is threatened. The «now moment » has disequibrated the initial intersubjective context and therapeutic intervention may bring clients toward change. A new intersubjective context is enacted in a « moment of meeting ». These moments are seen as « very good moments » by Mahrer et al. (1992) who identified 19 very good moments.

By identifying the « good moments » in a session and a serie of sessions, it is possible to take a look at the therapeutic operations that give rise the valuable event. How does the therapist bring the family far from equilibrium and bring about some very good moments in psychotherapy sessions ? We know that emotions play a large part during bifurcations, critical incidents and good moments.

We have hypothesized that these « good moments » occurring during psychotherapeutic sessions, are moments of reversal of motivational state for the clients.

Method :

We used qualitative methods to examine processes in three completed family therapies. In our methodological approach, we analysed videotaped and transcribed sessions on the model of process-oriented and theory-generating research in Marital and Family Therapy discipline. After, semi-structured and open-ended qualitative interviews were conducted separately with the therapist, with the parents and each of the children, regarding specific events or aspects of therapy that they found to be particularly helpful. . Then we undertook a sequential analysis of therapeutic discussions regarding reversals and metamotivational states. Research interview transcripts were coded using grounded theory methodology (Glaser and Strauss, 1967).

Results :

For the three therapies, «good moments» have been identified by family members and therapists. We have analysed what happened during the sessions and we have identified reversals of motivational state. Here, in brief, is the analysis of one of these good moments.

The family C. is formed by the 58 years old father, the mother who is 60 years old, and their only daughter Benedicte (33) who is heroin and alcohol addict and who has made several suicide attempts. Every week her parents bring her to the emergency department in hospital due to a heroin overdose, ethyl coma or suicide attempt. They get upset with her and have unappropriate strategies to protect themselves from the fear of losing her. The interaction modalities are those typically frequent in such families: disqualification, invasive behaviours, poor emotional autonomy in relationship with parents, unclear boundaries between individuals and generational subsystems.

Following another suicide attempt the therapist make the parents work on their maladaptative

emotional reaction: desertion because they can't prevent her from dying, anger, lack of empathy. They are in an autocratic mastery state combination, they can't control her but they try to control their own emotions to remain strong. Then no empathy seems possible.

The therapist uses a metaphor to define family relationships and the parents' communication with their daughter. He requalifies the place of Benedicte in the family as that of a droid; the parents do not speak to her as if to a human being. The sequence analysis shows that the therapist creates a reversal with this metaphor. The droid metaphor induces the allocentric-sympathy state combination, the parents came to understand they have forgotten that their daughter is suffering and they have already begun mourning for her even though she is still alive.

We can also observe a reversal with Benedicte. When her parents are in the Other state, she can allow herself to be in the Self State. She feels less guilt. The therapist triggers the Self state, asking her « if you're not a droid, you have to answer to important questions ». After the session, she is more centred on her own needs than those of her parents.

Conclusion :

This research helps us to better identify how the metaphor works in psychotherapy and what occurs during the good moments on both emotional and motivational levels. Researchs must be pursued to provide implications for practice and answer these questions : In which contexts, are psychological states and coping strategies working well or are they a part of the problem ? Which state is more helpful for the client and his/her family ? Does the client need to reverse between opposing psychological states ? Which therapeutic strategies trigger a different state ? Studying these reversals occurring during sessions and the identification of good moments by clients seems to be a promising research avenue since therapists could better target their interventions.

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# Paratelic/Telic State, Sexual Arousal, and Sexual Risk-Taking Intentions in University Students

Cramer Ken <sup>1\*</sup>, Skakoon Shayna <sup>1</sup>

1 : University of Windsor

401 Sunset Avenue, Department of Psychology, Windsor, ON

\* : Auteur correspondant

To date, much of the research investigating the manipulation of metamotivational states, like telic/paratelic balance, have utilized methods that vastly changed the situational context of the participants (see Desselles & Apter, 2013 for a review), this methodology is problematic because there may be a host of confounding factors accompanying the variety of situations employed (e. g. a football game versus a doctor's waiting room). Ideally, smaller situational manipulations would create a more parsimonious (clean?) understanding of shifts between metamotivational states and the meaning that may be derived from such shifts. The current experiment undertook to manipulate telic (goal oriented) versus paratelic (immediate enjoyment oriented) states; specifically, by attempting to induce a paratelic state via sexual arousal. Despite the variety sexual education strategies made available to youth, condom use among this population remains inconsistent (Rottermann & McKay, 2009); leaving youth vulnerable to sexually transmitted infections (STIs), like Human Immunodeficiency Virus (HIV). Canadians largely come into contact with HIV through sexual contact; thus, understanding more about the social, physiological, and cognitive factors that lead to these unprotected encounters is very important to the prevention of new HIV infections. One factor of significant importance is sexual arousal, which has been shown to significantly impact risk-taking and safer sex decision making. However, little is yet understood about the mechanisms underlying these behavioural/cognitive shifts. If sexual arousal shifts motivation from the goal oriented telic state into the immediate gratification orientation of the paratelic state, this could help explain how sexual arousal can have such a strong impact on safer sex behaviour and behavioural intentions. For example, while in the telic state, an individual may set the goal of using a condom with any new sex partner; however, while under the effects of sexual arousal, they may shift to a paratelic state, where they are more concerned with enjoying the moment, and may be less concerned with «breaking the mood» to apply a condom or to engage in condom negotiation. A greater understanding of factors that can affect condom use decisions «in the heat of the moment,» will be instrumental for informing programs to promote healthy sexual behaviour and reduce the number of new STI/HIV infections. Methodology: The current study investigated the effects of sexual arousal on telic/paratelic state in 95 female and 40 male heterosexual, sexually experienced participants. Participants were instructed to complete an online «pre-test,» which included the Telic/Paratelic State Inventory ? Modified (T/PSI-M), where participants indicated their subjective mood between two states (on a scale of 1 to 10) using 12 pairs of phrases (e.g. «feeling playful» vs. «feeling serious-minded »). This pre-test was completed no less than 24 hours before their assigned laboratory session. During their laboratory session, participants used a computer to view 5 randomly ordered video clips. Immediately after viewing each video clip, participants completed a mini mood assessment (which included a measure of sexual arousal); they were then asked to complete sections of a questionnaire (which included the T/PSI-M) all items were presented via computer. Participants completed either the sexual arousal or neutral control condition. In the control condition, participants viewed non-sexual, non-violent interactions between male and female characters from popular television shows and movies (e.g. a clip from Disney's WALL-E). In the sexual arousal condition, participants viewed sexually explicit video clips depicting non-violent, consensual sex acts between male and female partners. Results: The data were analyzed using a series of independent and paired-samples t-tests. The first analysis compared the sexual arousal level of the control versus the experimental group; it was found that participants in the experimental condition ( $M= 5.50, SD= 1.41$ ) were reported significantly higher levels of sexual arousal than participants in the control condition ( $M=1.44, SD=.54$ ):  $t(133)=22.58, p=.000$ . The second analysis compared the pre and post-test data of participants in the control condition; it was found that control participants' scores on the T/PSI-M did differ from pre-test ( $M=5.92, SD=1.45$ ) to post-test ( $M=5.22, SD=1.26$ ):  $t(67)=3.12, p=.003$ ; however, the effect size was relatively small ( $d=.51$ ) compared to the experimental group. The third analysis compared the pre and post-test data of participants in the experimental (sexual arousal) condition; it was found that experimental participants' scores on the T/PSI-M were significantly higher (more telic) at

pre-test (M=5.53, SD=.64) than at post-test (M=4.35, SD=1.43):  $t(58)=4.423$ ,  $p$

# Differences in Metamotivational States for Exercise among Smokers, Nonsmokers, and Quitters

Colwell Brian <sup>1</sup>, Lee Jay <sup>2</sup>, Smith Dennis <sup>3</sup>

1 : Texas A&M School of Rural Public Health (TAMHSC SRPH)

1266 TAMU College Station, TX 77843-1266

[www.srph.tamhsc.edu](http://www.srph.tamhsc.edu)

2 : University of Houston

Department of Educational Psychology, 214 Farish Hall University of Houston Houston, TX 77204-5023

<http://www.coe.uh.edu/academic-departments/epsy/index.php>

3 : University of Houston

Dept. of Educational Psychology 214 Farish Hall University of Houston Houston, TX 77204-5023

<http://www.coe.uh.edu/academic-departments/epsy/index.php>

Authors: Brian Colwell, (Department of Health Promotion & Community Health Science, Texas A&M School of Rural Public Health, USA), Jay Lee, Dennis Smith (Department of Educational Psychology, University of Houston, USA)

Introduction:

The purpose of this study was to examine differences between smokers, nonsmokers and quitters on a set of 10 exercise-related state sets.

Methods:

Data were collected from 2463 undergraduates at a large, urban university. The mean age was 23.2 (5.2) years. 2070 (84%) were single. Twelve percent were freshmen, 22% sophomores, 28% juniors and 55% were seniors. Participants included 336 smokers, 1943 non/never smokers, and 178 who had quit. The sample consisted of 336 smokers, 1943 nonsmokers, and 178 people who had quit. Overall, the sample was more characteristic of a commuter university than a typical residential university.

We measured 10 Reversal Theory based motives to exercise based on a previously developed scale (Lee, 2003): telic, paratelic, arousal-avoiding, arousal-seeking, conformist, negativistic, autic mastery, alloic mastery, autic sympathy, and alloic sympathy. Each subscale consisted of 3 items, each on a 1 ? 5 range («extremely uncharacteristic of me" to «extremely characteristic of me". Differences were examined using Tukey-Kramer's HSD to be conservative. Alpha levels were set at .01a priori.

Results:

Smokers differed significantly from nonsmokers on all subscales except Paratelic, Arousal-Seeking and Negativistic. Nonsmokers did not differ significantly from quitters except on the Conformist and Alloic Mastery subscales.

Discussion:

Generally, nonsmokers may be more effective when seeking reasons to exercise than smokers in the telic, arousal-avoiding, conformist and across all the transactional states. Differences in metamotivational status, with higher scores in nonsmokers seems to be a reflection of a higher value on exercise as well as a higher perceived value of the outcomes of exercise, and may reflect a higher value on health (although this was not measured). Nonsmokers seem to gain a greater sense of mastery over challenges in exercising and express greater feelings of attractiveness and desirability as an outcome of exercise than nonsmokers. The higher score on Alloic Sympathy, as well as the overall interpretation of the scores above, seem to demonstrate an overall value on health for NS exercisers that is greater than for smokers.

We will examine implications for interventions that help smokers to increase their physical activity by addressing metamotivational state characteristics. With ample evidence that demonstrates that physical activity increases the likelihood of successful smoking cessation, such interventions may stimulate successful quit attempts.

Corresponding Author: Dr. Brian Colwell, Texas A&M School of Rural Public Health, 1266 TAMU, College Station, TX 77843-1266; [Colwell@srph.tamhsc.edu](mailto:Colwell@srph.tamhsc.edu))

# How to use the AMSP instrument complementary to other Trait Personality Theory's instruments and how does it help to provide the RT with new research perspectives?

Baetche Stephane <sup>1</sup>

1 : Lincker

*Apter France*

9 boulevard de rochechouart, 75009 Paris

How to use the AMSP instrument complementary to other Trait Personality Theory's instruments and how does it help to provide the RT with new research perspectives?

Study purposes

Professional coaches often use different sets of tools to work with their coachees. Many of which are based on trait personality theories and happened to be quite useless when coachees come to face changing issues in their jobs or career and when adaptation is at stake.

This is why several coaches in France are now using both their usual instruments and the Apter Motivational Style Profile (AMSP). The authors of this study propose therefore to give an insight on:

1/ how the AMSP instrument helps the coachees to understand that they are able to change and they are not stuck in one or another fixed stereotypes (or patterns) and how it provides them with new abilities and resources by developing their mental flexibility?

2/ why the AMSP instrument provides then a valuable complementary tool to traditional instruments' users?

4/ how to link both the AMSP and a particular instrument called the Process Communication Model Personality Pattern Inventory (PCM - PPI) in order to allow the coachees to benefit from both instruments and succeed in their changes challenges?

5/ how it comes that this comparison enrich the RT understanding as it leads the coaches to apprehend their coachees' issues in terms of state combinations rather than isolated activated state? Why to compare the AMSP Instrument with the PCM-PPI ?

The Process Communication Model (PCM) and Personality Pattern Inventory (PPI) has been developed by a psychologist, doctor Taibi Kahler and is based on Dr Eric Berne's theory of personality called Transactional Analysis (TA). The model is quite popular in France (300 certified coaches and more than 150.000 inventories used in the past 20 years).

As an integrative approach to the theory of psychology and psychotherapy (including elements of psychoanalysis, humanism and cognitivism), the TA has some similarities with the RT: «3 Ego States» versus «8 Mental States», Changeability from a state to another, Consistency within each states while experiencing it... But there is also a main difference as the AT is a trait personality theory. So is the PCM, which proposes a set of 6 personality patterns and states that individuals experience some of them preferably, though it is admitted, that they are able to progressively experience other patterns over time.

These similarities led the author to push forward their analysis and try to link the two models in order to be able to use the two models complementarily.

Methodology

1/ Primarily, a theoretical «Translation Model» has been designed, based on several hundreds of practical experiences with trainees and coachees who have taken both instrument.

2/ Secondly the theory was systematically verified on an extensive analysis of ten individuals taken at random within a base of more than a hundred cases.

3/ Third, the experience has led to establish a «translation grid» that allows to interpret each of the 6 PCM personality patterns in terms of Favored Activated Mental States and furthermore help the AMSP users to work efficiently on their coachees' changes issues.

4/ Fourth, the study led to practical outcomes useful to the AMSP Practitioners. In addition, the study as well as the preliminary practical experiences enlightened some new RT understanding perspective.

Outcomes

1/ Each six PCM Personality Patterns are translatable in terms of Dominant Active Mental States activated overtime. A Translation Grid has been formalized:

2/ When an individual is under stress, according to the PCM, it gets locked into a set of behaviors specific to its preferred pattern of personality. This can be translated into a set of dominant Mental States (Mental States Combinations) which are then activated but not satisfied and can be changed according to the RT.

3/ It also provides an insight on specific stress types attached to each PCM personality patterns (and therefore enlarge the options possibilities).

New perspectives

4/ Further on, emphasizing on these Mental States combinations led the author to suggest some new research topics:

4/i/ As individual experiences the reality through Mental States Combinations (rather than a unique one), might it be possible and would it be interesting to identify a set of «main States combinations»?

4/ii/ As change issues involve Mental States changes over time, would it be possible to formalize personal strategies in terms of Mental States combinations?

The authors provide several examples based on the 10 case studies.

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