

## The Effect of Goals and Metamotivational States on Mood Shift Following Acute Exercise

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### **Background**

Despite the widely recognised benefits of regular exercise in terms of promoting health and wellbeing, 30.1% of the world's population are classified as physically inactive. Thus, an understanding of the factors that increase enjoyment of exercise or otherwise detract from the exercise experience, may be valuable in promoting regular exercise, and therefore community health. This study explored mood effects of exercise, looking particularly at the possible influence of goal proximity perceptions, and that of metamotivational state, on changes in mood during moderate aerobic exercise.

Self-determination theory suggests that people actively undertake behaviours that move them toward a sense of growth, psychological integrity and wellbeing (Deci & Ryan, 2000). Goal approach / goal avoidance theory (Carver & Scheier, 1998) suggests that a person's mood is tied to the individual's sense of this movement toward or away from goals. These theories share a common theme, that individuals feel better when undertaking behaviours that help them achieve their (goals and thus) 'ideal' or preferred self, e.g. "I have stamina"; or "I am healthy".

### **Project Aims**

This study aimed firstly, to establish whether increases in positive affect (PA) and decreases in negative affect (NA) would follow an session of moderate exercise. Beyond this first test, the specific aims of Part 1 were to explore whether exercise was associated with perceptions of goal achievement, and how those goal proximity perceptions may be linked to affect. In line with the principles of goal approach / goal avoidance theory, this study hypothesised that perceptions of increased positive goal proximity would be related to increases in PA; while increased distancing from negative goals or 'anti-goals', would correlate with decreases in NA.

Part 2 of the study aimed to investigate the differences in affective response between individuals exercising in a telic metamotivational state and those exercising in a paratelic metamotivational state. Reversal theory (Apter, 1997) suggests that telic-minded individuals prefer low-arousal, future-focused, purposeful activity; while paratelic-minded individuals prefer dynamic, high-arousal, present-moment oriented activity. Given the steady-paced, moderate intensity nature of the cycling task in this experiment, it was hypothesised that telic condition exercisers would demonstrate a greater increase in PA following exercise, than would paratelic condition exercisers.

### **Methodology**

Participants first completed a prescreen, online survey, enabling the researchers to determine suitability of candidates to be invited to take part in the exercise component of the study. Forty five participants took part in the exercise study component, first providing written consent, and undertook the experiment individually in the exercise laboratory on Murdoch University campus. Each was fitted with a heart rate monitor and watch, to ensure that participants exercised within moderate range exertion – defined as 55 to 70% of an individual's maximum heart rate.

Exercise was performed on a stationary bicycle for a 5-minute warm up, 20 minutes of moderate cycling, and a 2-minute cool down. Participants completed pre- and post-exercise surveys in order to determine the change in PA, NA, and perceived proximity to positive and negative exercise goals.

In addition, prior to exercising, participants were randomly allocated to either the telic (goal-focused) or paratelic (present-moment oriented) metamotivational condition. Telic participants were instructed to think about their most important exercise goals while cycling, and viewed computer screen images designed to promote a telic-mindset. Paratelic participants were instructed to maintain a present-moment orientation while cycling, and were shown images of people engaged in leisure-oriented activities. At the experiment's conclusion, participants were debriefed and the nature of the grouping conditions was revealed.

## **Findings**

A significant increase in PA and decrease in NA, was found after exercise, across the total participant sample. Part 1 of the study measured perceived proximity to positive and negative exercise goals in participants before and after a 20-minute session of moderate, cycling exercise. Results showed that after exercising, participants felt significantly closer to positive exercise goals, and further from negative goals, than before exercise. Increases in PA also correlated with feeling closer to positive goals, and with feeling further from negative goals. Part 2 examined the effect of metamotivational states on mood shift following exercise. Results indicated no difference between groups in self-reported degree of 'telic-ness'. No significant difference was found between telic and paratelic groups for affect change following exercise. Exertion levels were however, greater for participants in the telic condition.

This study demonstrates the relevance of approach and avoidance goals to affect outcomes, following exercise. Findings indicate that exercise may serve as a vehicle to closing the gap between the *ideal* self and *actual* self. Improvements in affect appear to be linked to perceived movement toward one's own ideals, and away from anti-goals. This notion was also supported in the finding that taking action toward achieving these ideals – performing exercise – was also linked to a reduction of NA following exercise. Results also indicate that people may not necessarily be readily instructed to exercise in one particular metamotivational state. Exercise participation may therefore be encouraged by first identifying the exerciser's natural motivational approach, then tailoring personal fitness programs to match motivational style, with the program design including a number of minor benchmarks, drawing attention to goals achieved with exercise.

## **References**

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