
4

The Speed of Goal Pursuit

Peter M. Gollwitzer
Uwe B. Rohloff
University of Konstanz

In the early 1990s, Heckhausen and Gollwitzer (1987; Gollwitzer, 1990; Heckhausen, 1991) suggested a model of action phases that describes people's attempts to realize their wishes and desires. The model assumes that on the long way from wishes to goal attainment, various different tasks have to be solved, and it associates a different action phase with each of these tasks. The first task to be solved in the so-called *predecisional phase* is selecting between one's various wishes and desires by turning some of them into binding goals. This transition to goal commitment is described as a decision that commits the person to actually performing goal-directed actions. The next task to be solved is the promotion of action initiation, which is done in the *preactional phase*. This is commonly achieved by planning when, where, and how one wants to get started with goal implementation. In the subsequent third phase (called *actional phase*), the task is to bring the started goal pursuit to a successful ending, even if barriers, hindrances, difficulties, slow downs, and so forth are encountered. Finally, after relevant outcomes have been achieved, the individual's task is to evaluate whether the actually achieved outcomes match the originally desired outcomes. On the basis of this evaluation, it will be decided whether further goal pursuit is necessary and worthwhile. This *postactional phase* comprises the last of the four action phases.

In the past, we have focused on the question of whether these different action phases are associated with a typical kind of information processing

PERSPECTIVES ON BEHAVIORAL SELF-REGULATION

Advances in Social Cognition Volume XII

Edited by

Robert S. Wyer, Jr.
University of Illinois, Urbana-Champaign

Lead Article by
Charles S. Carver
and
Michael F. Scheier

(e.g., Gollwitzer, Heckhausen, & Steller, 1990; Gollwitzer & Kinney, 1989; Taylor & Gollwitzer, 1996). More specifically, we postulated that deliberating one's wishes and desires leads to a deliberative mind-set, whereas planning the implementation of a chosen goal leads to an implemental mind-set. As it turned out, people's information processing in a deliberative mind-set differs drastically from their information processing in an implemental mind-set (Gollwitzer, 1991). In general, people process information in ways that are functional to solving the task at hand, which is making the best choice between desires and getting started with goal-directed actions, respectively.

We also analyzed what kind of planning is most conducive to solving the task of the preactional phase (i.e., initiating goal-directed actions without delay). We observed that very simple plans that link suitable anticipated situations (good opportunities) to appropriate goal-directed actions are powerful self-regulatory tools when it comes to getting started (Gollwitzer, 1993, 1996). Such plans, called *implementation intentions*, automatize action initiation and thus guarantee that goal-directed actions will be elicited even when the individual is distracted by performing other tasks, is caught up in ruminative thoughts, or is simply tired.

Only very recently we have been concerned also with the task of the actional phase: bringing started goal pursuit to a successful ending. It is assumed (Gollwitzer & Rohloff, 1997) that any falling back on this task leads to a spontaneous effort increase and potentially to performance improvement. The commitment resting on one's decision to achieve the set goal pushes the individual toward goal attainment. A threat to this goal commitment should stimulate a reactive effort increase in an attempt to stick to one's commitment. Accordingly, it is not just explicit failure experiences that should trigger this spontaneous response. Any threat to this goal commitment, even if it is only caused by a temporal slowdown in the speed of goal pursuit, should suffice. In order to test this assumption, we developed a new experimental paradigm in which participants can be given false feedback on their changes in speed (velocity) with which they approach the goal. Before we report the collected data, we would like to discuss Carver and Scheier's view of the speed of goal pursuit.

SPEED OF GOAL PURSUIT AS PERCEPTUAL INPUT TO THE METAMONITORING FEEDBACK LOOP

The speed of reducing a discrepancy to a set standard is, according to Carver and Scheier, regulated by a system that serves a metamonitoring function. This process operates simultaneously and in parallel with

the behavior-guiding function served by the action loop feedback system. The metamonitoring system is thus checking on how well the action loop is doing at reducing its discrepancies. In more technical terms, "the perceptual input for the metamonitoring loop is a representation of the rate of discrepancy reduction in the action system over time." To make this easier to grasp, Carver and Scheier state that the action loop deals with distance, whereas the metamonitoring loop deals with velocity (speed).

The reference value for the perceptual input of the metamonitoring loop is an acceptable or desirable rate of discrepancy reduction. The primary output of the metamonitoring loop is, according to Carver and Scheier, affect in the sense of feeling positively or negatively. If the metamonitoring system detects a high speed of discrepancy reduction, there should be positive affect; if it senses a low speed, there should be negative affect. In support of these ideas, Carver and Scheier refer to the work by Hsee and Abelson (1991) who observed that people link velocity to satisfaction. For instance, students report that they would feel more satisfied if an improvement in class standing from the 30th percentile to the 70th percentile occurs during a short period of time (3 weeks) as compared to a long period of time (6 weeks). And when asked which change in value of a stock would be more satisfying (different charts are presented), subjects prefer fast velocities when the outcome was improving and slow velocities when the outcome was declining. Lawrence, Carver, and Scheier (1997) conducted an experiment where participants personally experienced different velocities of change. Manipulated performance feedback was given over time on an ambiguous task. Various speed patterns were established, whereby all participants finally ended up with a medium performance on the task. However, some subjects experienced a positive change of performance over time (starting poor and gradually improving), whereas others experienced a negative change (starting well and gradually worsening). With improving performances, high speeds led to better moods than low speeds, and with declining performances, low speeds led to less bad moods than high speeds.

Carver and Scheier also speculate about people's affective responses to accelerations and decelerations. Moving from a low-speed level to a high-speed level with a high velocity (fast acceleration) is not assumed to produce positive affect, but surprise. And the same is assumed for fast reductions from a high-speed level to a low-speed level (fast deceleration). Carver and Scheier admit that there is no direct evidence for this assumption, but they point to suggestive support for this position in the literature on emotion.

Most important, Carver and Scheier argue that the affect produced by the metamonitoring loop influences action. Based on a line of thought

It becomes apparent that our theorizing on changes in speed in goal pursuit does not assign a functional role to positive and negative affect. Still, we assume that changes in affect can be associated with changes in speed of goal pursuit. In our view, this depends on the quality of the standard to which a person compares his or her speed of progress. In the case of social standards (i.e., the speed of progress is compared to another person), negative or positive affect should be experienced as one feels like a loser or winner. This negative affect, however, should not further the person's effort increase, but instead hamper it. In the case of an ipsative standard (i.e., the person compares the present speed of progress with the speed of progress he or she had achieved before), we do not expect intensive affective responses to an increase or decrease in speed and no effect of affect on effort increase or decrease, respectively.

A NEW EXPERIMENTAL PARADIGM FOR STUDYING THE EFFECTS OF SPEED DISCREPANCIES

To give participants false feedback on their changes in the speed with which they approach a task goal, we asked two participants at a time to take part in the following experiment. Participants are told that they would take part in an experiment in which they have to perform arithmetic tasks that are commonly used in social cognition experiments on cognitive load. The problem, however, is that these tasks probably create not only cognitive load but also changes in mood. To test for this, participants would have to report on their mood repeatedly while performing the tasks. Moreover, to create a realistic dual-task situation, participants were also asked to attend carefully to the information provided on their speed of progress toward goal attainment. Participants would have to report on their speed later on.

The arithmetic tasks are then presented at the computer screen, and the participants solve one task after the other in a self-paced manner. The tasks consist of one to three numbers presented in an upper line, and one to three numbers presented in a lower line. Participants are asked to compute the sum of each line and then subtract the smaller sum from the larger sum. The participants' goal is to make 350 points, and participants are told that each correct task is awarded with 1 to 10 points depending on its difficulty. Proximity to the goal is indicated on the screen by a column that rises in steps of 50 points. Irrespective of their performance, participants receive the same false feedback about their proximity to the goal (i.e., whenever 15 tasks are completed the column rises one step).

called the cruise control model, it is suggested that people respond to the negative affect produced by low velocities of discrepancy reduction with an effort increase, as things are not moving forward fast enough. Positive feelings associated with a high speed of moving toward the goal lead to coasting (an effort decrease) as things are going better than they need to. As "a discrepancy is still a discrepancy, and discrepancies are to be reduced," either quality of affect or deviation from the standard speed represents an error and should lead to changes in output focused at discrepancy reduction. Carver and Scheier argue that it makes sense to assume that people reduce positive discrepancies in speed because, as they are typically working on several goals simultaneously, continuing to serve one goal effectively has the cost of ignoring other pressing goals. In addition, it is pointed out that the effort increase postulated for negative speed discrepancies does not have to be understood solely in terms of invigorating a given course of goal-directed action. Rather, switching to other, more effective behaviors to meet the goal is also implied.

REDUCTION IN SPEED OF GOAL PURSUIT AS A THREAT TO GOAL COMMITMENT

According to our theorizing (Gollwitzer & Rohloff, 1997), slowdowns in the speed of moving toward a goal (in comparison to a desired speed) contradict a person's commitment to goal attainment. As a consequence, reactive efforts to hold on to the goal should be triggered. We do not assume that a person needs to experience negative affect for such reactive effort increases to occur. In line with theorizing by Bargh and Gollwitzer (1994; Bargh, Gollwitzer, Chai, & Barndollar, 1997), we assume that much of people's goal pursuit should run off implicitly and does not need explicit thoughts or feelings as a triggering condition. Therefore, people should respond to slowdowns in speed of progress toward the goal by a spontaneous effort increase that is not based on negative affect.

Moreover, our theorizing implies that positive speed discrepancies do not contradict a person's commitment to goal attainment. Accordingly, such positive discrepancies should not lead to a reduction in effort; rather, people should continue to strive with a high velocity. Only when other important goals have to be served at the same time might one observe a decrease in effort, as solely promoting the goal at hand could imply a threat to these competing goal commitments. But when these competing goals can be served one by one, a high-speed approach to the goal at hand seems highly functional, as this would allow the person to readily complete the goal at hand and move on to competing goals in time.

What is varied, however, is the perception of the velocity in moving toward the goal.

RESULTS OF AN EXPERIMENT

In a study by Gollwitzer and Rohloff (1997) using this paradigm, two different groups of participants were created. In the social comparison group, participants received false feedback about their changes in speed with respect to the partner participant. In the ipsative comparison group, participants received false feedback on changes in speed with respect to their own prior baseline speed. In both comparison groups, participants' false feedback on their velocity changed after each fifth task. In the social comparison group, this feedback was said to be related to the momentary speed of their partner participant. In the ipsative comparison group, this feedback was said to be related to the 10 tasks performed at the beginning of the experiment (i.e., the so-called baseline phase).

Within each of the two comparison groups, four different velocity patterns of moving toward the goal were implemented. The patterns differed from each other in the following way: At the beginning and the end of task performance, the velocities of all different patterns were the same and described a zero discrepancy. In between, the patterns differed drastically. Pattern B showed a zero discrepancy throughout the full course of goal pursuit. In Pattern A, participants learned that they slowed down after the beginning but recovered toward the end. In Patterns C and D, participants found that they increased in speed after the beginning, but slowed down towards the end—this was more pronounced in Pattern D than in Pattern C.

At eight different points in time, separated by about 5 minutes each (depending on the participants' performance), participants were asked to fill out a questionnaire that assessed various aspects of mood, such as hedonic tonus (bad mood—good mood), tension arousal (calm—nervous, relaxed—anxious), energetic arousal (not energized—energized, passive—active) and anger (not angered—angered, well-balanced—irritated). Moreover, participants reported on their being surprised and on being satisfied/dissatisfied with the momentary situation. For the seven time periods cut out by these eight assessments, we later computed participants' effort expenditure by determining the amount of time they needed for completing one arithmetic task. We actually took the mean of the last 15 tasks. In addition, we computed quality of performance by dividing the achieved number of correct tasks through the time participants took to solve these tasks.

4. GOAL PURSUIT

Based on our theorizing, we postulated that the negative discrepancy in speed of goal pursuit indicated in Pattern A implies a threat to participants' goal commitment. It is therefore responded to with effort and performance increases. People should spontaneously try to hold on to the desired velocity and thus increase effort and performance. This should be true no matter whether goal pursuit is solitary or social. We established two different positive speed discrepancy groups, because our theorizing differs from Carver and Scheier's metamonitoring loop notion with respect to the effect of positive discrepancies on effort expenditure. Contrary to Carver and Scheier, we do not assume that an above-standard speed leads to reduction in effort and performance; moving faster than standard neither threatens a person's goal commitment nor renders it obsolete. To Carver and Scheier, however, an above-standard speed is as much a deviation from the standard as a below-standard speed, and both types of discrepancies are responded to by adjustments toward the standard speed.

Speed Discrepancy Effects on Effort and Performance

Negative speed discrepancies led to an increase in effort and performance as compared to zero discrepancies, and this was true for both the social comparison group and the ipsative comparison group. This observation is in line with Carver and Scheier's theorizing as well as our own perspective. Positive speed discrepancies, on the other hand, no matter whether these were minor or major, did not induce any reduction in effort and performance for both the social comparison group and the ipsative comparison group. This contradicts Carver and Scheier's metamonitoring loop notion and supports our commitment notion of goal pursuit.

Speed Discrepancy Effects on Affect and Satisfaction

Negative speed discrepancies produced a lower hedonic tonus (bad mood—good mood) than positive discrepancies, but only in the social comparison condition and not in the ipsative comparison condition. This questions Carver and Scheier's postulate that affect is the error signal of the metamonitoring loop that triggers the output function of that loop (i.e., an adjustment in the rate of progress). As negative speed discrepancies had produced an effort and performance increase in the ipsative comparison group, it appears that this adjustment runs off without assigning a functional role to affect. The observation that positive/negative affect is triggered by positive and negative speed discrepancies only in the social comparison group is interesting in its own right. One might