VOLUNTARY ACTION FROM THE PERSPECTIVE OF SOCIAL-PERSONALITY PSYCHOLOGY

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1 Introduction

Social-personality psychologists have traditionally devoted little attention to the theoretical and empirical analysis of the issue of voluntary action. We see two different reasons for this:

1 According to the behaviourist perspective (e.g. Tolman, 1925), purposeful or goal-directed behaviour was solely used as a descriptive category to refer to behaviour that was performed in a certain way (e.g. with great persistence).

2 Motivational theories prevalent in traditional social and personality psychology (e.g. Murray, 1938) conceptualized humans as being mechanically driven by basic needs and instincts, thus preventing an analysis of human action in terms of volition.

The issue of volition only began to receive more attention in the seventies, when humans were perceived as agentic according to social-cognitive theories of personality (Mischel, 1973; Bandura, 1977). In recent years, the issue of volition has been kindled in research on self-regulation, wherein a host of theories on goal setting and goal striving have emerged (reviewed by Oettingen & Gollwitzer, 2001). Voluntary action also became an important issue in research on person perception, as it matters whether an action is perceived as voluntary or not when inferences are made on a person's dispositions (Heider, 1958). Only very recently, however, has research begun to systematically examine the determinants of intentionality judgments with respect to others' and one's own behaviour (Malle et al., 2001). Finally, social psychologists have now addressed the issue of the causal impact of the phenomenal will by asking the question of whether it might simply be an illusion (Wegner & Wheatley, 1999).

In the present chapter, we present and discuss these different lines of research. We begin with delineating different types of goal theories by pointing to the kind of self-regulatory problems they attempt to account for. We then turn to analysing the importance of the concept of intention for interpreting and understanding the behaviour of others. Finally, we address the question of what kind of psychological variables determine the experience of voluntary action (i.e. the phenomenal will).

2   Voluntary action as the pursuit of goals

The cognitive revolution in social and personality psychology (Mischel, 1973; Bandura, 1977) has suggested a number of important cognitive variables: expectancies, control beliefs, competence judgments, self-regulatory plans, and goals. It is the latter concept that is the most relevant to the analysis of voluntary action. A person who has set herself a goal has decided to reach a desired outcome or to perform a respective instrumental behaviour. Social-personality psychologists explicate the issue of goal pursuit in terms of Kurt Lewin's (Lewin et al., 1944) distinction between goal setting and goal striving. 'Goal setting' addresses the question of what goals a person will choose (i.e. what kind of end states a person finds attractive and feasible, and commits herself or himself to attain). 'Goal striving', on the other hand, is behaviour directed toward existing goals and thus addresses questions of moving toward the chosen goal. In recent personality and social-psychology research, many different lines of research exploring issues of goal setting and goal striving have developed.

2.1   Goal setting

The analysis of goal setting can focus either on the determinants of what kind of goals a person sets (e.g. beliefs about the malleability versus stability of intelligence lead to different types of set goals) or on the psychological processes (e.g. contrasting one's noncommittal wishes with reality) that facilitate the setting of binding goals.

2.1.1   Determinants of goal setting

With respect to the determinants of goal setting it has been recognized that goals are often *assigned* by others (e.g. teachers, parents, employers, editors). It matters who assigns goals to whom and how the persuasive message is framed. Relevant variables may include attributes of the source, the recipient, and the message (McGuire, 1969). Locke & Latham (1990) report that source variables, such as legitimacy and trustworthiness, play an important role in the transformation of an assigned goal into a personal goal. For recipients of such assignments, perception of the goal as desirable and feasible, personal redefinition of the goal, and integration with other existing goals are important (Cantor & Fleeson, 1994). Finally, relevant message variables may be the discrepancy between the suggested goal and the recipient's respective current goal (e.g. when a very low-calorie diet is suggested to a person with a moderate dieting goal) and whether fear appeals are used (e.g. information on the dramatic medical consequences of health damaging behaviour is provided). Effective sellers of goals must also consider the processing ability and motivation of the recipient as a moderator of the effects of source, recipient, and message variables on accepting assigned goals as personal goals (Petty & Cacioppo, 1986; Chaiken, 1987).

   Goals do not need to be assigned as people also set goals on their own. People prefer to choose goals that are desirable and feasible (Ajzen, 1985; Gollwitzer, 1990; Locke & Latham, 1990; Heckhausen, 1991). Desirability is determined by the estimated attractiveness of likely short- and long-term consequences of goal attainment. Such consequences may pertain to anticipated self-evaluations, evaluations by significant others, progress toward some higher order goal, external rewards of having attained the goal, and the joy/pain

associated with moving towards the goal (Heckhausen, 1977). Feasibility depends upon people's judgments of their capabilities to perform relevant goal-directed behaviour (i.e. self-efficacy expectations; Bandura, 1997), their belief that this goal-directed behaviour will lead to the desired outcome (i.e. outcome expectations; Bandura, 1997), or the judged likelihood of attaining the desired outcome (i.e. generalized expectations; Oettingen, 1996) or desired events in general (general optimism; Scheier & Carver, 1985). The information source for efficacy expectations, outcome expectations, generalized expectations, and optimism is past experiences: one's own past performances, the observed performances of others, received relevant persuasive messages, and one's previous physiological responses to challenge (Bandura, 1997). Proper assessment of the feasibility and desirability of a potential goal also requires seeing the goal in relation to other potential goals. A goal associated with many attractive consequences may suddenly appear less desirable in light of a superordinate goal or it might seem more feasible in connection with other compatible goals (Cantor & Fleeson, 1994; Gollwitzer, 1990).

Set goals may differ in structural features (e.g. abstract versus concrete) and in content (e.g. materialistic versus social integrative). People generally prefer to set themselves abstract goals, and adopt concrete goals only when they run into problems attaining an abstract goal. According to action identification theory (Vallacher & Wegner, 1987), people conceive of their actions in rather abstract terms (e.g. cleaning the apartment) and only drop down to lower, concrete levels (e.g. vacuuming the carpet) when difficulties in carrying out the activity as construed at the higher level arise. Some people typically think of their actions in low-level terms, whereas others prefer high-level identifications (Vallacher & Wegner, 1989). This general preference for either an abstract or a concrete level of identifying actions should be reflected in the choice of abstract versus concrete goals.

Goals can be framed with a positive or negative outcome focus (i.e. goals that focus on establishing and keeping positive outcomes as compared with avoiding and ameliorating negative outcomes). Higgins (1997) argues that people may construe their self either as an ideal self that they intrinsically desire to be, or as an ought self that they feel compelled to be. The former orientation focuses on promotion, whereas the latter focuses on prevention. Part of the promotion orientation is a predilection for setting goals geared at accomplishing positive outcomes and terminating negative ones, whereas part of the prevention orientation is a predilection for setting goals geared at avoiding negative outcomes and keeping positive ones.

Goals can also be framed as performance versus learning goals (Dweck, 1996), also referred to as performance versus mastery goals (Ames & Archer, 1988) or ego involvement versus task involvement goals (Nicholls, 1979). Goals in the achievement domain can either focus on finding out how capable one is (performance goals) or on learning how to carry out the task (learning goals). Dweck (1996) reports that implicit theories on the nature of ability determine the preference for performance versus learning goals. If people believe that ability is fixed and cannot be easily changed (i.e. hold an entity theory of ability), they prefer performance goals. However, if people believe that ability can be improved by learning (i.e. hold an incremental theory of ability), they prefer learning goals. Similar implicit theories concerning the malleability of moral character affect the selection of punitive versus educational correctional goals.

Whenever goals are formed on a high level of abstraction (e.g. to become a physician), they determine the content of lower order goals. The content of such 'Be' goals determine the content of respective 'Do' goals, which in turn determine the content of respective 'motor-control' goals (Carver & Scheier, 1998, p. 72). 'Be' goals have been described by terms such as current concerns (Klinger, 1977), self-defining goals (Wicklund & Gollwitzer, 1982), personal projects (Little, 1983), personal strivings (Emmons, 1996), and (individualized) life tasks (Cantor & Fleeson, 1994). Whereas choosing higher order 'Be' goals should be determined by their perceived desirability and feasibility (Klinger, 1977), choosing the respective lower order 'Do' goals also depends on the commitment to the respective 'Be' goals (Gollwitzer, 1986). The issue of higher order goals affecting lower order goal-directed activity is also raised by Joëlle Proust's (this volume) discussion (based on Bach, 1978; Frankfurt, 1988; Jeannerod, 1997) of the voluntary control of minimal actions.

2.1.2 Processes of goal setting

Social-personality researchers have not only analysed the determinants of goal setting, but also the psychological processes that facilitate goal setting. Bandura (1997) suggests that having successfully achieved a set goal stimulates the setting of ever more challenging goals, due to a person's heightened sense of efficacy that is based on having successfully attained the prior goal. Others have pointed out that the core processes of goal setting involve committing oneself to achieving a certain incentive (Klinger, 1977). Heckhausen & Kuhl (1985) argued that the lowest degree of commitment to an incentive is a mere wish to attain it. A wish that is tested for feasibility becomes a want that carries a higher degree of commitment. To develop a full goal commitment (i.e. to form the intention or goal to achieve the incentive), a further relevance check must be carried out relating to necessary means, opportunities, time, relative importance, and urgency.

In their *Rubicon model of action phases*, Heckhausen & Gollwitzer (1987; Gollwitzer, 1990; Heckhausen, 1991) assume that people entertain more wishes than they have time or opportunities to realize. Therefore, they must select between wishes in order to accomplish at least some of them. The criteria for selection are feasibility and desirability. Wishes with high feasibility and desirability have the best chance to become goals. The transformation of wishes into goals is a resolution, resulting in a feeling of determination to act. Through this resolution the desired end state specified by the wish becomes an end-state that the individual feels committed to achieve. To catch the flavour of this transition from wishing to willing, the metaphor of crossing the Rubicon is used.

What are the preliminaries of crossing the Rubicon? The model of action phases (Gollwitzer, 1990; Heckhausen, 1991) states that the realization of a wish demands the completion of four successive tasks:

- deliberating between wishes to select appropriate ones (pre-decision phase);
- planning the implementation of chosen wishes (i.e. goals or intentions) to get started with goal-directed behaviour (pre-action phase);
- monitoring goal-directed behaviour to bring it to a successful ending (action phase);
- evaluating what has been achieved as compared with what was desired to terminate goal pursuit or to restart it (evaluation phase).

People decide to 'cross the Rubicon' (i.e. move from the pre-decision phase to the pre-action phase) when they sense that the feasibility and desirability of a wish is not only acceptably high, but has been exhaustively deliberated and correctly assessed. Gollwitzer, Heckhausen, and Ratajczak (1990) observed that undecided people more readily formed goals when they had been asked to judge the likelihood of wish fulfilment, and to list likely positive and negative, short- and long-term consequences. In addition, when undecided people were lured into planning the implementation of the wish by simply connecting anticipated opportunities with intended goal-directed behaviour, they also showed a greater readiness to cross the Rubicon. Apparently, when undecided people feel that the task of assessing the feasibility and desirability of a given wish is completed, they show a greater readiness to move on and set themselves the respective goal.

A recent *theory of fantasy realization* (Oettingen, 1996) analyses goal setting by delineating different routes to goal formation. The theory distinguishes between two forms of thinking about the future, expectations and free fantasies. Expectations are judgements of the likelihood that a certain future behaviour or outcome will occur. Free fantasies about the future, on the contrary, are thoughts and images of future behaviour or outcomes in the mind's eye, independent of the likelihood that these events will actually occur. For example, despite perceiving low chances of successfully resolving a conflict with a partner, people can indulge in positive fantasies of harmony.

Fantasy realization theory specifies three routes to goal setting that result from how people deal with their fantasies about the future. One route is expectancy-based, while the other two are independent of expectations. The expectancy-based route rests on mentally contrasting positive fantasies about the future with aspects of impeding reality. This mental contrast ties free fantasies about the future to the here and now. Consequently, the desired future appears as something that must be achieved and the impeding reality as something that must be changed. A necessity to act is experienced and, as a consequence, expectations of success become activated and used. If expectations of success are high, a person will commit to the goal of fantasy attainment.

The second route to goal setting stems from merely indulging in positive fantasies about the desired future, thereby disregarding impeding reality. This indulgence seduces one to consummate and consume the desired future envisioned in the mind's eye. Accordingly, no necessity to act is experienced, and relevant expectations of success are not activated and used. Commitment to act towards fantasy fulfilment reflects solely the implicit pull of the desired events imagined in one's fantasies. It is moderate and independent of a person's perceived chances of success (i.e. expectations). As a consequence, the level of goal commitment is either too high (when expectations are low) or too low (when expectations are high). The third route is based on merely dwelling on the negative aspects of impeding reality, thereby disregarding positive fantasies about the future. Again, no necessity to act is experienced, this time because nothing points to a direction in which to act. Commitment to act therefore does not reflect expectations, but merely the implicit push of the negative aspects of impeding reality. Similar to indulgence in positive fantasies about the future, dwelling on the negative reality leads to a moderate, expectancy independent level of commitment, which is either too high (when expectations are low) or too low (when expectations are high). Fantasy realization theory is supported by various experimental studies in the inter-personal and achievement domain (Oettingen, 1999, 2000; Oettingen *et al.*, 2001).

Goal setting does not have to be a product of reflective processes, but can also be a result of reflexive processes. Bargh's (1990) *automotive theory* suggests that strong mental links develop between the cognitive representation of situations and the goals the individual chronically pursues within them. As a consequence of repeated and consistent pairing, these goals are activated automatically when the person enters the critical situation. The automatically activated goal then guides behaviour within the situation without choice or intention. Reflective choice, originally crucial, is now by-passed. Bargh *et al.* (2001) tested the assumption of direct goal activation in several experiments by assessing whether directly activated goals lead to the same behavioural consequences as reflectively set goals. Indeed, non-conscious priming of an achievement goal caused participants to perform better on an intellectual task than a non-primed control group. Moreover, non-consciously primed achievement goals led to increased persistence and a higher frequency of task resumption. By applying a dissociation paradigm, it could be ruled out that these effects were based on the mere priming of the semantic concept of achievement.

The processes described by Bargh and colleagues are based on reflective goal setting at an earlier point in time. Automation relates only to the activation of an already existing goal in a given situation (for related perspectives see Hommel and Prinz, both this volume). It seems possible, however, that behaviour that carries features of goal-directedness can also emerge in the absence of previously or *ad hoc* set goals. Kelso's (1995) theory on dynamic systems suggests that complex goal-directed behaviour can emerge without mental representations of goals. Moreover, robotics research (Brooks, 1991; Maes, 1994) finds that robots can be programmed to perform rather complex, goal-directed behaviour without having to install goal concepts. Connectionist theories are also wary of the goal concept. Some connectionist theories completely abolish the goal concept, while others try to replace the reflective processes of goal choice by suggesting parallel constraint satisfaction models (Read *et al.*, 1997).

Finally, Carver & Scheier (1999) point out that there might be two kinds of goal-related automation. The first is described by Bargh (1990) in his automotive model, and relates to automation through repeated and consistent pairing of a goal with a situational context. The second relates to primitive built-in behavioural tendencies that are present also in non-human species. Carver and Scheier describe this type of automation as an intuitive, crudely differentiated 'quick and dirty' way of responding to reality that provides a default response. One does not wait to form an intention, but responds immediately. This mode of behaving is reminiscent of what McClelland and his colleagues (McClelland *et al.*, 1989) describe as behaviour based on implicit motives. Implicit motives are believed to be biologically based, directly guiding behaviour through natural incentives.

It appears then that (as behaviourists have long asserted) behaviour-carrying features of goal-directedness do not necessarily require subjective goal setting based on reflective thought or the activation of a mental representation of an existing goal. Although some theorists may question the existence and relevance of reflective goal setting or of mental representations of goals, the more challenging research question for the future seems to us, How do the reflective and reflexive systems interact?

2.2 Goal striving

The rate of goal attainment is strongly affected by what kinds of goals people have set for themselves (e.g. learning goals lead to higher rates than performance goals) and how

skilfully they cope with implemental problems that arise on the way to goal attainment (e.g. planning in advance).

2.2.1   Determinants of goal striving

Goal contents vary in structural features. They may be challenging or modest, specific or vague, abstract or concrete, proximal or distal, framed with a negative or positive outcome focus, and so forth. As well, goals differ thematically. All of these differences affect the success of goal striving. Locke & Latham (1990) demonstrated that challenging goals spelled out in specific terms are superior to modest specific goals, as well as to challenging, but vague (i.e. do your best) goals in facilitating goal attainment. Bandura & Schunk (1981) observed that proximal goals are more easily attained then distal goals. However, Cochran & Tesser (1996) demurred that the goal proximity effect is reversed for goals framed in terms of preventing failures. Also, learning goals and performance goals have different effects on performance (Dweck, 1996). Learning goals lead to better achievements than performance goals because the former allow for a more effective coping with failure than the latter. For people with performance goals, failure signals a lack of ability and thus causes the reaction of giving up. People with learning goals, on the other hand, view setbacks as cues to focus on new strategies. Accordingly, their behaviour is orientated toward mastering the causes of the setback, ultimately furthering goal attainment. However, Elliot & Church (1997) objected that performance goals are less detrimental when they are framed as approach goals (e.g. I want to get good grades), rather than avoidance goals (e.g. I do not want to get bad grades).

With respect to the thematic content of goals, Ryan et al. (1996) suggest that goals of autonomy, competence, and social integration lead to greater creativity, higher cognitive flexibility, greater depth of information processing, and more effective coping with failure. Goals based on autonomy, competence, and social integration needs are also associated with higher well-being and life satisfaction. Recently, Brunstein et al. (1999) pointed out that the effects of goals on emotional well-being are also influenced by how well people's goals match their needs or implicit motives (McClelland, 1985). People with strong achievement and power needs, and goals of the same theme—as well as people with strong affiliation and intimacy needs, and goals of the same theme—report higher emotional well-being than those whose needs and goals do not match.

2.2.2   Processes of goal striving

Experience tells us that it is often a long way from goal setting to goal attainment. Having set a goal is just a first step, usually followed by a host of implemental problems that must be successfully solved. In the section above, we described research that predicts successful goal attainment on the basis of structural and thematic properties of the set goals. Process-related research focuses on how the problems of goal pursuit are solved by the individual. To effectively solve problems of initiating goal-directed actions and bringing them to a successful ending, one needs to seize good opportunities to act, ward off distractions, flexibly step up efforts in the face of difficulties, by-pass barriers, compensate for failures and shortcomings, and negotiate conflicts between goals. Various theories address how the individual effectively solves these problems of goal implementation.

The *model of action phases* (Gollwitzer, 1990; Heckhausen, 1991; Heckhausen & Gollwitzer, 1987) understands successful goal pursuit in terms of solving a series of successive tasks: deliberating wishes (potential goals) and choosing between them, planning goal-directed actions and getting started, bringing goal pursuit to a successful end, and evaluating its outcome. The task notion implies that people can promote goal pursuit by developing respective mindsets, which in turn facilitate task completion (Gollwitzer, 1990). Studies conducted on the mindsets associated with either deliberating between wishes (i.e. deliberative mindset) or with planning goal-directed actions (i.e. implemental mindset) support this idea.

When participants are asked to plan the implementation of a set goal, an *implemental mindset* with the following attributes originates (Gollwitzer, 1990; Gollwitzer & Bayer, 1999): participants' minds become closed in that they are no longer distracted by irrelevant information. However, information related to goal implementation is processed very effectively (e.g. information on the sequencing of actions), desirability-related information is processed in a partial manner favouring pro's over con's, and feasibility-related information is analysed in a manner that favours illusory optimism. This optimism extends to an illusion of control over uncontrollable outcomes, and even holds for depressed individuals. Self-perception of important personal attributes (e.g. cheerfulness, smartness, social sensitivity) is strengthened, while perceived vulnerability to both controllable and uncontrollable risks is lowered (e.g. developing an addiction to prescription drugs or losing a partner to an early death, respectively). The implemental mindset favours goal attainment by helping the individual to effectively cope with classic problems of goal striving, such as becoming distracted, doubting the attractiveness of the pursued goal, or being pessimistic about its feasibility.

Set goals commit an individual to attaining the specified desired future, but they do not commit the individual to when, where, and how she intends to act. Such additional commitments can be added by planning goal pursuit via *implementation intentions* with the format of 'If situation *x* is encountered, then I will perform the goal-directed behaviour *y*!'. Gollwitzer (1993) argued that implementation intentions are a powerful self-regulatory strategy for overcoming problems of getting started with goal-directed actions (e.g. when people are tired, absorbed with some other activity, or lost in thoughts, and thus miss good opportunities to act). In support of this hypothesis, it was observed in numerous studies (for summary, see Gollwitzer, 1999) that difficult to reach goals benefit greatly from being furnished with implementation intentions. This effect extends to projects such as resolving important inter-personal conflicts, performing a medical self-examination, regular intake of a vitamin supplement, eating healthy foods, and doing vigorous exercise. It also holds true for people who have problems turning goals into action, such as opiate addicts under withdrawal or schizophrenic patients.

Because implementation intentions spell out links between situational cues and goal-directed behaviour, it is assumed (Gollwitzer, 1993) that by forming such intentions people delegate the control of behaviour to situational cues, thus facilitating the initiation of goal-directed actions. The mental representations of the specified situational cues become highly activated, making these cues more accessible. Various experiments demonstrate that situational cues specified in implementation intentions are more easily detected and remembered, as well as more readily attended to than comparable unintended

situations. Moreover, implementation intentions create strong associative links between mental representations of situations and actions, which otherwise are achieved only through consistent and repeated pairing. As a consequence, action initiation becomes automatized. Various experiments demonstrate that the goal-directed behaviour specified in implementation intentions is initiated swiftly and effortlessly (Brandstätter et al., 2001) in the presence of the critical situation. Moreover, the subliminal presentation of the critical situation suffices to activate cognitive concepts and knowledge relevant to the efficient initiation of the intended behaviour. Finally, patients with a frontal lobe injury, who have severe deficits in the conscious and effortful control of behaviour, while remaining unaffected in performing automatized behaviour, benefit greatly from forming implementation intentions (Lengfelder & Gollwitzer, 2001).

Implementation intentions ameliorate not only problems of the initiation of goal-directed behaviour, but also other problems of goal striving (Gollwitzer & Schaal, 1998). In a series of studies, implementation intentions created resistance to tempting distractions, while solving tedious arithmetic problems. Moreover, goals set to escape unwanted habitual responses (i.e. stereotypical beliefs and prejudicial feelings) are more successfully attained when furnished with implementation intentions.

In summary, implementation intentions create a type of behavioural automation that does not originate from laborious practice requiring much effort. Rather, people strategically delegate their control over goal-directed behaviour to anticipated critical situational cues. This easily accessible self-regulatory strategy of forming implementation intentions can be used to increase tenacity in initiating goal-directed action. At the same time, it helps to increase flexibility in escaping unwanted habits of thinking, feeling, and behaving.

There are other effective types of planning besides forming implementation intentions. Planning can be approached in a more reflective way as in *mental simulations* exploring possible ways to achieving a goal. Taylor et al. (1998) term such mental simulations 'process simulations'. If applied repeatedly, they further goal attainment, such as achieving good grades in academic exams. Apparently, repeated mental simulations of how to achieve a goal also result in firm plans.

Competing goal pursuits are paid particular attention in Kuhl's *action control theory* (for summary, see Kuhl & Beckmann, 1994). For an ordered action sequence to occur, a current guiding goal must be shielded from competing goal intentions (e.g. the goal of making a phone call from the competing intention to tidy one's desk). Kuhl calls this shielding mechanism action control and differentiates a number of control strategies, such as attention control, emotion control, and environment control. Through environment control, for example, the individual prevents the derailing of an ongoing goal pursuit by removing competing temptations from the situation.

Whether and how effectively these strategies are used depends on the current control mode of the individual. An action-orientated person concentrates on planning and initiating goal-directed action, responds flexibly to situational demands, and uses control strategies effectively. A state-orientated person, in contrast, cannot disengage from incomplete goals and is caught up in uncontrollable perseverance of thoughts related to aversive experiences or in dysfunctional thoughts about future successes. Action and state orientation may be induced by situational variables (e.g. a surprising event, persistent failure), but is founded in a personal disposition.

Recent experimental research on state orientation has discovered a further volitional handicap. State-orientated individuals readily misperceive assigned goals as self-generated. These findings have stimulated a new theoretical perspective (Kuhl, 2000), which sees the volitional control of action as a result of the cooperation of various mental subsystems (i.e. intention memory, extension memory, intuitive behaviour control, and object recognition). Action versus state orientation is understood as a parameter that modulates co-operation between these systems thus leading to a different kind of volitional control of action with different outcomes.

Higher order goals (e.g. to become popular) offer multiple routes to approach them. If one pathway is blocked, an individual can approach the goal another way. *Self-completion theory* (Wicklund & Gollwitzer, 1982) addresses this issue of compensation by analysing self-defining goals. Such goals specify as the desired end state an identity, such as scientist, mother, or a political liberal. As many different things indicate the possession of such identities, the striving for an identity is a process of collecting these indicators (or self-defining symbols). These indicators extend from relevant material symbols (e.g. books and awards for a scientist) to relevant self-descriptions (e.g. using titles) and performances (e.g. accomplishing important research). Whenever shortcomings in one type of symbol are encountered, an individual will experience self-definitional incompleteness, which in turn leads to compensatory self-symbolising efforts. These may take the form of pointing to the possession of alternative symbols or acquiring new symbols.

Research on self-completion has discovered that effective self-symbolising requires a social reality. Compensatory efforts are particularly effective when other people notice them. This, however, has costs. Compensating individuals see others only in terms of their capability to notice compensatory efforts and thus lack social sensitivity. Also, when people make public their intention to acquire a certain self-definitional indicator (e.g. studying hard), actual effort will be reduced, as the proclamation alone produces self-definitional completeness (Gollwitzer *et al.*, 1999).

People may promote goal achievement by compensating for failures, but they also try to avoid committing errors in the first place. Warding off failure becomes a pressing issue whenever difficulties mount. Brehm and Wright's (Brehm & Self, 1989; Wright, 1996) *energization theory* of motivation assumes that the readiness to exert effort is directly determined by the perceived difficulty of a task. As perceived difficulty increases, so does effort expenditure, unless the task is recognized to be irresolvable. There is, however, a second limit to the increase of effort in response to heightened task difficulty: potential motivation. Potential motivation is fed by desirability-related variables (i.e. strength of the related need or higher order goal, the incentive value of the task, and the instrumentality of task completion for satisfaction or attainment of super-ordinate goals). If potential motivation is low, people do not find it worthwhile to expend more effort when an easy task becomes more difficult. The upper limit of effort expenditure is low and quickly reached. If potential motivation is high, however, an increase in difficulty is matched by investment of effort up to high levels of difficulty. In this case, the upper limit of effort expenditure is high and is reached only after much effort expenditure has occurred.

The goal striving theories discussed so far implicitly or explicitly view goals as something attractive that the individual wants to attain. Goals are not simply 'cold' mental representations that specify standards or reference points, but cognitively explicated and elaborated

incentives. Such motivational goal theories are rivalled by a more cognitive view that sees goals as solely specifying performance standards. For instance, according to Bandura (1997), goals have no motivational consequences *per se*. They only specify the conditions that allow a positive or negative self-evaluation. If the set goal is attained, positive self-evaluation prevails, whereas staying below one's goal leads to negative self-evaluation. The individual is pushed by the negative self-evaluation associated with the discrepancy, and pulled by the anticipated positive self-evaluation linked to closing the gap between the status quo and the goal. Accordingly, goals stimulate effortful action in particular when people notice a discrepancy between the status quo and the set goal. However, they will try to reduce this discrepancy only when they feel self-efficacious with respect to performing the necessary goal-directed actions.

Carver & Scheier (1998) propose a different *discrepancy reduction theory of goal pursuit*. Based on cybernetic control theory, the central concept of their analysis is the negative feedback loop. They highlight the hierarchical structure of goal pursuits and assume a cascading loop structure. Goal-directed behaviour is regulated at the middle level ('Do-goals') with actions at higher levels ('Be-goals') suspended until the individual becomes self-aware. Discovery of discrepancies on the 'Be-level' or the 'Do-level' triggers lower level goals or behaviour aimed at discrepancy reduction, respectively. An individual tries to close discrepancies only when outcome expectations are high. However, a positive affective response as a consequence of goal attainment is not assumed, nor is the detection of a discrepancy associated with negative affect. Rather, the source of positive or negative feelings in goal pursuit is the speed of discrepancy reduction. The intensity of these feelings is regulated again in a negative feedback loop. If the speed meets a set criterion, positive feelings result, whereas negative feelings are experienced with a speed that stays below this criterion.

The discrepancy notions discussed above construe goals as 'cold' mental representations of performance standards with no links to needs or incentives. This conceptualization of goals makes it difficult to explain why motivation (see Brehm and Wright's notion of potential motivation) moderates the relationship between task difficulty and effort. Moreover, according to discrepancy theory, an increase in task difficulty should reduce efforts at task completion, because an experienced increase in task difficulty should lead to reduced self-efficacy and less positive outcome expectations. As Brehm and Wright have repeatedly demonstrated, however, high potential motivation makes it worthwhile for people to mobilise additional effort whenever heightened task difficulty threatens task completion. Finally, Carver & Scheier's construal of the regulation of the speed of discrepancy reduction assumes that positive discrepancies (i.e. moving towards the goal too fast) are reduced as readily as negative discrepancies (i.e. moving towards the goal too slowly). However, from the perspective that goals represent a desired outcome, a person should be less motivated to reduce positive discrepancies than negative discrepancies (Gollwitzer & Rohloff, 1999).

3 Folk explanations of voluntary action

Beyond the various theories that address how goals are set and attained, social-personality psychologists have traditionally been concerned with questions of how people infer

whether someone is *consciously* or *purposefully* engaging in goal-relevant behaviour. That is, researchers have long explored how and when people infer the intention behind others' behaviour or the extent to which a person's behaviour is voluntary (James, 1890; Heider, 1958).

Early theorists such as James (1890) and Heider (1958), and many theorists since (e.g. Jones & Davis, 1965; Kelley, 1967, 1973; Kunda, 1999; Weiner, 1986), recognized that by knowing whether an actor's behaviour was purposefully performed, one can anticipate the actor's future actions, and can thus plan one's own future actions toward the actor accordingly. Purposeful behaviour in a given situation points to the actor's general behavioural tendencies or dispositional characteristics. Dispositional information enables one to make predictions about an actor's behaviour *across* situations. As Heider (1958) states in his seminal treatise concerning the psychology of understanding others, knowing the reasons for someone's behaviour indicates something about the essence of that person: '... dispositional properties are the invariances that make possible a more or less stable, predictable, and controllable world' (p. 80).

3.1 Early theoretical and empirical work

Given that there are potentially numerous and sometimes invisible possible causes of complex and even simple behaviour, how and when do people decide that an actor behaved voluntarily? Heider (1958) was one of the first in psychology to systematically unpack the possible components underlying such judgements. He proposed that there are two necessary and sufficient conditions that need to be met in order to conclude that an actor purposefully behaved. The first component is referred to by Heider as *can*. The concept of *can* refers to both the actor's capability with regard to the action, as well as the difficulty introduced by the contingent environmental conditions. The question of capability refers to whether the actor is able to perform the action, which is then integrated with a consideration of the difficulty of performing the action due to the physical surroundings.

In addition to having to analyse the component of *can* when attempting to understand whether an action was voluntary, Heider posited a second component called *try*. The concept of *try* entails both the aspect of intention, as well as exertion. When an act is intentional, the actor is purposively trying to accomplish some goal. The degree to which someone intended to perform an action is combined with how much they exerted themselves while performing. According to Heider, the greater the exertion, the greater the extent to which the actor was trying to perform the action.

After a perceiver figures out the degree to which an actor *could* have performed the action and *tried* to perform it, an assessment of voluntary action, or the extent to which the action was purposive, can theoretically be reached. These two conditions are informative because they yield predictions about the actor's future possible behaviour. If an athlete attempts to finish a marathon, but fails, we gain a lot of information by knowing whether he was able to finish it, as well as whether he tried to win it. If he was clearly able to win it, we can assume that he did not try hard enough. If he tried to win it, but did not, we can assume that he was not capable of doing so.

Although Heider's (1958) discussion of the constructs of *can* and *try* was mostly geared toward understanding whether an action was caused by the person versus other forces (such as environmental factors), it included the intentionality of the behaviour as a central

component in the analysis. His theoretical work served as a useful foundation for later empirical work on the attribution of causes of a behaviour (e.g. Beike & Sherman, 1994; Gilbert, 1998; Jones & Davis, 1965; Weiner, 1985), which also addressed notions of intention. For instance, in their correspondent inference theory, Jones & Davis (1965) postulated that the behaviour of others' is more likely to be interpreted as intentional if it is freely chosen and the effects or consequences are uncommon (i.e. are unexpected). Moreover, acts that produce many desirable outcomes do not reveal a person's specific intention as clearly as acts that produce only a single desirable outcome (Newton, 1974).

Although there is a vast body of literature about attributions of dispositional versus situational causes of behaviour, there is a subtle difference between attributing a particular behaviour pattern to a dispositional cause and deciding that the behaviour was intentional. Deciding that an actor's behaviour was dispositionally caused does not necessarily mean that the actor (consciously) intended to perform the behaviour. Much research, some of which has already been described, demonstrates that people can behave in an automatic fashion, without intention, effort, awareness, or control (Bargh, 1994, 1997; Bargh & Ferguson, 2000). Because of this possibility, it is not necessarily the case that a dispositionally caused behaviour is also an intended one. In line with this distinction, recent work has directly examined the degree to which people infer intentionality for another's behaviour.

3.2   Recent experimental work on inferring intentionality

Malle & Knobe (1997) provided a differentiated model of the concept of intentionality and they conducted a series of studies demonstrating how people typically use the concept of intentionality. In a preliminary study, they investigated whether people ascribe to a common idea of intentionality. They asked research participants to rate the intentionality of 20 different verbally-described kinds of behaviour. The average intercorrelation between any two people in the study turned out to be $r = 0.64$. Participants rated sweating and yawning as unintentional, but inviting a friend to lunch and watering the plants as intentional. These findings suggest that people seem to ascribe to one general understanding of intentionality when judging behaviour.

The authors also explored the determinants of the concept of intentionality by asking participants to define intentionality. In terms of the necessary ingredients for a judgment of intentionality, 51% of participants mentioned answered that the intention (i.e. the decision to perform the action) is a necessary condition, 39% referred to beliefs (i.e. thoughts about the action and its effects), 27% reported desires (i.e. hopes of attaining desired results), and 23% pointed to awareness (i.e. the knowing of doing). In subsequent studies it was demonstrated that skills were also mentioned, thus people seem to base their intentionality judgments on the presence of desire, belief, intention, awareness, and skill.

In our research concerning the perception of intentionality (Bayer, 2000), we extended Malle & Knobe's model by adding aspects described in the Rubicon model of action phases (see above). The five components of Malle & Knobe's (1997) folk concept of intentionality (i.e. desire, beliefs, intention, skills, and awareness) can be incorporated into the deliberation phase (i.e. desire and beliefs) and the action phase (i.e. awareness and skills) of the Rubicon model, and the decision to realise a given wish (i.e. the intention). Still, the Rubicon model points to a further important component that pertains to the planning phase. Planning the implementation of goal-directed behaviour should further enhance

judgments of intentionality, as a planned action should be more readily perceived as an intended action.

To test this hypothesis, we ran two experiments using the same procedure. First, the participants read various stories about different persons who performed an unlawful act (i.e. stole a watch) by exploiting an unexpected good opportunity (i.e. low risk to be detected). For each described person, we asked the participants to indicate the degree to which the behaviour was performed intentionally. In the first study, the participants read seven scenarios. Each scenario described a different theft whereby the value of the stolen object was always around $500. The characters in the various scenarios differed in respect to whether they had deliberated the crime, had decided to perform a crime, and had planned how to perform the crime. The number of components (deliberating, deciding, planning) varied between one and three, with all possible combinations of two of the three components, making up seven different stories altogether.

Results indicate that judged intentionality increased as a function of the number of components present in the descriptions. In other words, less intentionality was inferred when only one component was present compared with (all combinations of) two components and, again, more intentionality was inferred when three components were present compared with (any combination of) only two components. This result is in line with the findings of Malle & Knobe (1997) insofar as wishes and beliefs (deliberating), as well as the component of intention (making a decision) enhanced intentionality judgments. Our findings go beyond Malle & Knobe's work by demonstrating that planning also increases intentionality judgments. Apparently, planning represents a further distinct component in the perception of intentionality.

In a second study, we tried to replicate these findings by presenting participants with descriptions of a more severe crime. In these descriptions, the criminal character wanted to rob another person and to shoot him afterwards to ensure that the victim would not contact the police. Four versions of this story were constructed in which the criminal character either (a) deliberated, (b) planned, (c) deliberated and planned, or (d) deliberated, decided, and planned the crime. When we asked the participants to rate the degree of intentionality with which the described character performed the criminal action, characters who planned were perceived as performing the crime with higher intentionality than characters who only deliberated. Moreover, characters who deliberated and planned received higher intentionality ratings than characters who only deliberated. Finally, characters who deliberated, decided, and planned did not receive higher intentionality ratings than characters who only deliberated and planned. This overall pattern of data suggests that learning that another person planned the performance of an action has a particularly strong influence on intentionality judgments, more so than finding out that the other person deliberated or decided on the action.

4 Causal impact of volition on behaviour

Recent work on inferring intentionality (Malle & Knobe, 1997; Malle, 1999; Malle, Moses, & Baldwin, 2001) focuses on the circumstances under which people decide that an actor behaved intentionally. The underlying assumption in that research is that people have implicit theories that intended behaviour in a given situation causally impacts on how the

actor thinks and feels. Although much research suggests that people rely on the notion of volition as an influential factor in understanding themselves and others, philosophers and psychologists have questioned whether it is possible for mental events, such as intentions, to cause physical events, such as behaviour (e.g. Christensen & Turner, 1993). There is a long history of discussion in philosophy about the possibility of interaction between the mental and the physical, starting with Descartes and his notion of the duality of mind/body (e.g. Block *et al.*, 1997). Several social psychologists have recently joined this debate and have reiterated the possibility that the apparent causal importance of volition is merely an illusion.

4.1   Empirical versus phenomenal will

For example, Wegner and colleagues (e.g. Wegner & Wheatley, 1999) have developed a line of research in which they assume that volition (what they refer to as conscious will) can be broken down into the *empirical will* and the *phenomenal will*. Wegner and Wheatley argue that the *empirical will* has a veritable causal impact on a persons' conscious thought processes and subsequent behaviour. Researchers in psychology proper have traditionally explored such causal connections and the authors assert that this relation must be assessed within the usual scientific paradigm of observing the degree to which a behaviour can be performed with versus without the precursor of conscious intention or will (see the first section on goal setting and goal striving of the present chapter).

The *phenomenal will*, on the other hand, entails the subjective experience of personally and independently (i.e. with no help from other causal factors) causing a particular action. This self-attribution of causality is so ubiquitous that we also insist on inferring the degree to which other people intend their assorted actions. We believe that we can intentionally perform certain behaviour and so we assume that others can as well. However, despite such popularity and apparent utility of the folk concept of volition, or the phenomenal will, Wegner & Wheatley (1999) argue that there is no basis upon which to use such subjective experience of will as evidence for the actual causal impact of wilfulness on subsequent behaviour. As others in social psychology have demonstrated (Nisbett & Wilson, 1977), people's introspective testament concerning the proceedings of their own mental lives can be misguided. Just as someone may be unable to tell the experimenter why she chose the pair of stockings on the right, rather than one of the other three identical pairs, someone may mistakenly believe that her conscious intention to water the plants actually caused her to do so.

Wegner and Wheatley provide an explanation of how the experience of phenomenal will can arise. They postulate that people tend to attribute causal status to an intention when the intention is temporally *prior* to the behaviour, when it is *consistent* with the behaviour, and when the behaviour could not have been obviously caused by other factors, but is seen as *exclusively* determined by the intention. As long as the intention occurs according to these conditions, one is likely to experience the intention as causal for the subsequent, respective behaviour.

The argument that conscious will arises from identifiable sources that are themselves accounted for in various causal chains is not a trivial one. It challenges the long cherished view of free will that wilfulness somehow springs forth from some special uncaused place and constitutes the essence of human capacity for freely chosen actions (Prinz, this volume;

Sappington, 1990). If one's conscious will itself is caused, then it is impossible to say that one made the decision *oneself*, without any causal impact from other sources. In other words, people are not freely able to intend if those intentions are caused by factors other than some special personal invocation of agency. Wegner and Wheatley argue that this perspective is appropriate given the emphasis that scientists place on causal mechanisms and the idea that the mental lives of people must follow the same laws and mechanistic processes as physical stimuli.

4.2   Will as caused versus will as causal

Accordingly, Wegner & Wheatley (1999) assert that the experience of will can be a mere perception, resulting from an attribution based on factors of priority, consistency, and exclusivity. They then argue that, because of this, experiential will may not actually be a psychological force that causes action. As evidence for this claim, the authors cite research by Libet (1985) showing that the intention to move one's finger (a simple exercise of 'free choice') is preceded by non-conscious brain activity associated with pre-motor preparation (measured by readiness potentials). Wegner & Wheatley conclude that these '... findings are compatible with the idea that brain events cause intention and action, while conscious intention itself may not cause action' (p. 3).

The authors suggest, on the basis of their analysis of priority, consistency, and exclusivity, as well as empirical research, that intention is itself caused, and that therefore it may be that intention and action may both be caused by some 'third variable,' (e.g. non-conscious processes), and that intention is not causally impacting upon action. However, the assertion that it is possible to delineate the causal chain that leads to conscious will needs to be distinguished from the claim that such conscious thoughts are therefore causally irrelevant for subsequent behaviour. It is not clear why one would have to assume that a conscious intention that is itself caused by nameable factors can have no causal bearing for the subsequent, relevant behaviour. That is, if one argues that conscious will is itself caused (based on a mechanistic perspective), then it seems inconsistent to, in turn, argue that conscious will should only sometimes have a causal impact on the following behaviour. This would be tantamount to only sometimes endorsing such a mechanistic perspective.

4.3   Causal will versus unwilled behaviour

One might argue that a wide array of findings suggests that conscious, intentional thought is actually *not* necessary for a particular behaviour to occur. Indeed, numerous studies demonstrate how people can negotiate the environment nonconsciously (Bargh, 1997; Bargh & Ferguson, 2000). For example, people can form inferences about social behaviour both intentionally and unintentionally (Uleman, 1999). One might suppose then, on the basis of this research, that the intention to generate an inference is not what is actually causing the subsequent inferential thinking; instead it might be various, underlying non-conscious processes.

However, although many studies demonstrate that an action can occur with *and* without prior intentional thought, this does not mean that the intentional thought had no causal bearing on that action, even if such impact was not crucial for the observation of the action, or central to the definition of the action. For instance, the inferential thinking (Uleman, 1999) that occurs after the intention to do so might be qualitatively different

from that which occurs when the perceiver does not intend to do so. Although the 'act of inferential thinking' takes place regardless of a preceding intention, the *unintended* inferential process might depend upon different patterns of activation in the brain, deliver different emotional and cognitive consequences, and bear different implications for the person in a host of ways compared with intentional inferential thinking. The two processes both qualify as inferential thinking and may even bear some similarities, but this loose similarity does not preclude deeper, perhaps unobserved or even unobservable differences from existing.

Although we understandably identify behaviour in a loose sense in order to be able to categorise it (at a very detailed level, no two acts of inferential thinking are the same, just as it is impossible to step into the same river twice), such looseness should not mislead us into thinking that an action that can occur with and without conscious intent serves as evidence that the intent was causally irrelevant for the subsequent action. Maybe conscious intent does not influence the behaviour *that is measured*, but to suggest that it sometimes does not causally impact the person in some (perhaps unobserved) way requires one to assume dualist notions concerning the separability of mental and physical phenomena.

In summary, the belief that conscious will is the *first* and *only* causal impetus behind an action is clearly an illusion, and Wegner & Wheatley (1999) provide a clear and valuable exposition of the development of this illusion. Furthermore, although volition might sometimes not be necessary for the occurrence (i.e. measurement) of a related, subsequent behaviour, we presume, in line with non-dualist, scientific perspectives of causality, that such volition always has causal implications for subsequent thought and behaviour, albeit possibly unobserved or subtle.

5 Conclusion

Social and personality psychologists generally adopt a perspective on voluntary action that allows for the possibility that conscious intending has discernable effects on a person's thoughts, feelings, and actions. In line with this perspective, research on goal setting and goal striving has demonstrated that the kind of intentions people form, and also how they regulate the implementation of those intentions, impacts subsequent experience and behaviour. Furthermore, the degree of intentionality that people ascribed to others impacts how people think, feel, and act toward others. In other words, different kinds of intending as well as ascriptions of intentionality lead to different kinds of effects on people's thoughts, feelings, and actions. This is a discovery that represents an important cornerstone to the theoretical and empirical analysis of volition. Furthermore, this discovery has important applied implications when it comes to answering questions whether people should try to influence their own thoughts, feelings, and actions via forming intentions.

Importantly, social and personality psychologists' perspective on voluntary action also allows for the possibility that voluntary action can proceed without accompanying conscious intending. As recent research demonstrates, thoughts, feelings, and behaviour that carry features of goal-directedness can emerge directly without a person's conscious intent. The same is true for making inferences about the intentionality of others' thoughts, feelings, and behaviour.

Recognizing that voluntary thoughts, feelings, and behaviour can be guided by conscious intentions, but may also occur without such guidance allows one to move ahead and raise intriguing questions that place the two forms of volition in relation to each other (e.g. How does consciously guided voluntary action differ from automatic voluntary action? How can consciously guided voluntary action moderate automatic voluntary action or vice versa?). It is these types of questions social-personality psychologists have just started to address and will be concerned with in the years to come.

References

Ajzen, I. (1985) From intentions to actions: a theory of planned behaviour. In Kuhl, J. & Beckmann, J. (eds), *Action control: from cognition to behaviour.* Heidelberg: Springer-Verlag, pp. 11–39.

Ames, C. & Archer, J. (1988) Achievement goals in the classroom: students' learning strategies and motivation processes. *J Educat Psychol* 80, 260–7.

Bach, K. (1978) A representation theory of action. *Philosoph Stud* 34, 361–79.

Bandura, A. (1977) Self-efficacy: toward a unifying theory of behavioural change. *Psycholog Rev* 84, 344–58.

Bandura, A. (1997) *Self-efficacy: the exercise of control.* New York: Freeman.

Bandura, A. & Schunk, D.H. (1981) Cultivating competence, self-efficacy and intrinsic interest through proximal self-motivation. *J Personality Soc Psychol* 41, 586–98.

Bargh, J.A. (1990) Auto-motives: pre-conscious determinants of social interaction. In Higgins, E.T. & Sorrentino, R.M. (eds), *Handbook of Motivation and Cognition,* Vol. 2. New York: Guilford, pp. 93–130.

Bargh, J.A. (1994) The four horsemen of automaticity: Awareness, intention, efficiency, and control in social cognition. In R.S. Wyer Jr. & T.K. Srull (eds.), *Handbook of social cognition.* Vol. 1: Basic processes; Vol. 2: Applications (2nd ed., pp. 1–40). Hillsdale, NJ: Lawrence Erlbaum Associates.

Bargh, J.A. (1997) The automation of everyday life. In Wyer, R.S., Jr (ed.), *Advances in Social Cognition,* Vol. 10. Mahwah: Erlbaum, pp. 1–62.

Bargh, J.A. & Ferguson M.J. (2000) Beyond behaviourism: on the automation of higher mental processes. *Psycholog Bull* 126, 925–45.

Bargh, J.A., Gollwitzer, P.M., Lee Chai, A, Barndollar, K. & Trötschel, R. (2001) Automating the will: nonconscious activation and pursuit of behavioural goals. *J Personality Soc Psychol* 81, 1014–27.

Bayer, U.C. (2000) *Intentionalitätsurteile und seine Determinanten.* Talk held at the workshop "Voluntary action" at Delmenhorst, March 2000.

Beike, D.R. & Sherman, S.J. (1994) Social inference: Inductions, deductions, and analogies. In R.S. Wyer Jr. & T.K. Srull (eds.), *Handbook of social cognition.* Vol. 1: Basic processes; Vol. 2: Applications (2nd ed., pp. 209–85). Hillsdale, NJ: Lawrence Erlbaum Associates.

Block, N., Flanagan, O. & Güzeldere, G. (Eds) (1997) *The Nature of Consciousness: philosophical debates.* Cambridge: MIT Press.

Brandstätter, V., Lengfelder, A. & Gollwitzer, P. M. (2001) Implementation intentions and efficient action initiation. *J Personality Soc Psychol* 81, 946–60.

Brehm, J.W. & Self, E.A. (1989) The intensity of motivation. *Ann Rev Psychol* 45, 560–70.

Brooks, R.A. (1991) New approaches to robotics. *Science* 253, 1227–32.

Brunstein, J.C., Schultheiss, O.C. & Maier, G.W. (1999) The pursuit of personal goals: a motivational approach to well-being and life adjustment. In Brandtstädter, J. & Lerner, R.M. (eds), *Action and Self-development: theory and research through the life span.* Thousand Oaks: Sage, pp. 169–96.

Cantor, N. & Fleeson, W. (1994) Social intelligence and intelligent goal pursuit: a cognitive slice of motivation. In Spaulding, W. (ed.), *Nebraska Symposium on Motivation*, Vol. 41. Lincoln: University of Nebraska Press, pp. 125–80.

Carver, C.S. & Scheier, M.F. (1998) *On the Self-regulation of Behaviour.* New York: Cambridge University Press.

Carver, C.S. & Scheier, M.F. (1999) Themes and issues in the self-regulation of behaviour. In Wyer, R.S. (ed.), *Advances in Social Cognition.* Mahwah: Erlbaum, pp. 1–105.

Chaiken, S. (1987) The heuristic model of persuasion. In Zanna, M.P., Olson, J.M. & Herman, C.P. (Eds), *Social Influence: the Ontario symposium,* Vol. 5. Hillsdale: Erlbaum, pp. 3–39.

Christensen, S.M. & Turner, D.R. (1993) *Folk Psychology and the Philosophy of Mind.* Hillsdale: Erlbaum.

Cochran, W. & Tesser, A. (1996) The 'what the hell' effect: some effects of goal proximity and goal framing on performance. In Martin, L. L. & Tesser, A. (eds), *Striving and Feeling.* Mahwah: Erlbaum, pp. 99–120.

Dweck, C.S. (1996) Implicit theories as organizers of goals and behaviour. In Gollwitzer, P.M. & Bargh, J.A. (eds), *The Psychology of Action: linking cognition and motivation to behaviour.* New York: Guilford, pp. 69–90.

Elliot, A.J. & Church, M.A. (1997) A hierarchical model of approach and avoidance achievement motivation. *J Personality Soc Psychol* 72, 218–32.

Emmons, R.A. (1996) Striving and feeling: personal goals and subjective well-being. In Gollwitzer, P.M. & Bargh, J.A. (Eds), *The Psychology of Action: linking cognition and motivation to behaviour.* New York: Guilford Press, pp. 313–37.

Frankfurt, H. (1988) *The Importance of What we Care About.* Cambridge: Cambridge University Press.

Gilbert, D.T. (1998) Ordinary personology. In D.T. Gilbert & S.T. Fiske (eds.), *The Handbook of social psychology* (Vol. 2, 4ᵗʰ ed., pp. 89–150). New York, NY: McGraw-Hill.

Gollwitzer, P.M. (1986) The implementation of identity intentions. In Halisch, F. & Kuhl, J. (eds), *Motivation, Intention, and Action.* Heidelberg: Springer-Verlag, pp. 349–69.

Gollwitzer, P.M. (1990) Action phases and mind-sets. In Higgins, E.T. & Sorrentino, R.M. (Eds), *Handbook of Motivation and Cognition,* Vol. 2. New York: Guilford, pp. 53–92.

Gollwitzer, P.M. (1993) Goal achievement: the role of intentions. In Stroebe, W. & Hewstone, M. (eds), *European Review of Social Psychology,* Vol. 4. Chichester: John Wiley, pp. 141–85.

Gollwitzer, P.M. (1999) Implementation intentions: strong effects of simple plans. *Am Psycholog* 54, 493–503.

Gollwitzer, P.M. & Bayer, U. (1999) Deliberative versus implemental mindsets in the control of action. In Chaiken, S. & Trope, Y. (eds), *Dual Process Theories in Social Psychology.* New York: Guilford, pp. 403–22.

Gollwitzer, P.M. & Rohloff, U. (1999) The speed of goal pursuit. In Wyer R. S. (ed.), *Advances in Social Cognition,* Vol. 12. Hillsdale: Erlbaum, pp. 147–59.

Gollwitzer, P.M. & Schaal, B. (1998) Metacognition in action: the importance of implementation intentions. *Personality Soc Psychol Rev* 2, 124–36.

Gollwitzer, P.M., Heckhausen, H. & Ratajczak, H. (1990) From weighing to willing: approaching a change decision through pre- or postdecisional mentation. *Organizat Behav Human Decision Processes* 45, 41–65.

Gollwitzer, P.M., Bayer, U., Scherer, M. & Seifert, A.E. (1999) A motivational-volitional perspective on identity development. In Brandtstädter, J. & Lerner, R.M. (Eds), *Action and Self-development.* Thousand Oaks: Sage, pp. 283–314.

Heckhausen, H. (1977) Achievement motivation and its constructs: a cognitive model. *Motiv Emotion* 1, 283–329.

Heckhausen, H. (1991) *Motivation and Action.* Heidelberg: Springer-Verlag.

Heckhausen, H. & Gollwitzer, P.M. (1987) Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motiv Emotion* 11, 101–20.

Heckhausen, H. & Kuhl, J. (1985) From wishes to action: the dead ends and short cuts on the long way to action. In Frese, M. & Sabini, J. (eds), *Goal-directed Behaviour: the concept of action in psychology.* Hillsdale: Erlbaum, pp. 134–59.

Heider, F. (1958) *The Psychology of Interpersonal Relations.* New York: Wiley

Higgins, E. T. (1997) Beyond pleasure and pain. *Am Psycholog* 52, 1280–300.

James, W. (1890/1950) *Principles of Psychology,* 2 vols. New York: Dover.

Jeannerod, M. (1997) *The Cognitive Neuroscience of Action.* Oxford: Basil Blackwell.

Jones, E.E. & Davis, K.E. (1965) From acts to dispositions: the attribution process in person perception. In Berkowitz, L. (ed.), *Advances in Experimental and Social Psychology,* Vol. 2. New York: Academic Press, pp. 219–66.

Kelley, H.H. (1967) Attribution theory in social psychology. *Nebraska Symp Motiv* 14, 192–241.

Kelley, H.H. (1973) The process of causal attribution. *Am Psycholog* 28, 107–28.

Kelso, J.A.S. (1995) *Dynamic Patterns: the self-organization of brain and behaviour.* Cambridge: MIT Press.

Klinger, E. (1977) *Meaning and Void.* Minneapolis: University of Minnesota Press.

Kuhl, J. (2000) A functional-design approach to motivation and self-regulation: the dynamics of personality systems interactions. In Boekaerts, M., Pintrich, P.R. & Zeidner, M. (eds), *Self-regulation: directions and challenges for future research.* New York: Academic Press, pp. 111–69.

Kuhl, J. & Beckmann, J. (1994) *Volition and Personality.* Göttingen: Hogrefe.

Kunda, Z. (1999) *Social Cognition. Making Sense of People.* Cambridge: MIT Press.

Lengfelder, A. & Gollwitzer, P.M. (2001) Reflective and reflexive action in frontal lobe patients. *Neuropsychol* 15, 80–100.

Lewin, K., Dembo, T., Festinger, L.A. & Sears, P.S. (1944) Level of aspiration. In Hunt J. (ed.), *Personality and Personal Disorders.* New York: Ronald Press, pp. 333–78.

Libet, B. (1985) Unconscious cerebral initiative and the role of conscious will in voluntary action. *Behav Brain Sci* 8, 529–66.

Little, B.R. (1983) Personal projects: a rationale and methods for investigation. *Environ Behav* 15, 273–309.

Locke, E.A. & Latham, G.P. (1990) *A Theory of Goal Setting and Task Performance.* Englewood Cliffs: Prentice Hall.

Maes, P. (1994) Modeling adaptive autonomous agents. *Artific Life* 1, 135–62.

Malle, B.F. (1999) How people explain behaviour: a new theoretical framework. *Personality Soc Psychol Rev* 3, 23–48.

Malle, B.F. & Knobe, J. (1997) The folk concept of intentionality. *J Exp Soc Psychol* 33, 101–21.

Malle, B.F., Moses, L.J. & Baldwin, D.A. (Eds) (2001) *Intentions and Intentionality: foundations of social cognition.* Cambridge: MIT Press.

McClelland, D.C. (1985) *Human Motivation.* Glenview, IL: Scott, Foreman.

McClelland, D.C., Koestner, R. & Weinberger, J. (1989) How do self-attributed and implicit motives differ? *Psycholog Rev* 96, 690–702.

McGuire, W.J. (1969) The nature of attitudes and attitude change. In Lindzey, G. & Aronson, E. (eds), *Handbook of Social Psychology*, Vol. 3, 2nd edn. Reading: Addison-Wesley, pp. 136–314.

Mischel, W. (1973) Toward a cognitive social learning reconceptualization of personality. *Psycholog Rev* 80, 252–83.

Murray, H. A. (1938) *Explorations in Personality*. New York: Oxford University Press.

Newton, D. (1974) Dispositional inference from effects of actions: effects chosen and effects foregone. *J Exp Soc Psychol* 10, 487–96.

Nicholls, J.G. (1979) Quality and equality in intellectual development: the role of motivation in education. *Am Psychol* 34, 1071–84.

Nisbett, R.E. & Wilson, T.D. (1977) Telling more than we can know: verbal reports on mental processes. *Psycholog Rev* 83, 231–59.

Oettingen, G. (1996) Positive fantasy and motivation. In Gollwitzer, P.M. & Bargh, J.A. (eds), *The Psychology of Action: linking cognition and motivation to behaviour*. New York: Guilford, pp. 236–59.

Oettingen, G. (1999) Free fantasies about the future and the emergence of developmental goals. In Brandtstädter, J. & Lerner, R.M. (eds), *Action and Self-development: theory and research through the life span*. Thousand Oaks: Sage, pp. 315–42.

Oettingen, G. (2000) Expectancy effects on behaviour depend on the mode of thinking about the future. *Soc Cognit* 18, 101–29.

Oettingen, G. & Gollwitzer, P.M. (2001) Goal setting and goal striving. In Tesser, A. & Schwarz, N. (eds), Intraindividual processes, *Blackwell Handbook of Social Psychology*, Vol. 1. Oxford: Blackwell, pp. 329–49.

Oettingen, G., Pak, H. & Schnetter, K. (2001) Self-regulation of goal-setting: turning free fantasies about the future into binding goals. *J Personality Soc Psychol* 80, 736–53.

Petty, R.E. & Cacioppo, J.T. (1986) *Communication and Persuasion: central and peripheral routes to attitude change*. Berlin: Springer-Verlag.

Read, S.J., Vanman, E.J. & Miller, L.C. (1997) Connectionism, parallel constraint satisfaction processes, and Gestalt principles: (re)introducing cognitive dynamics to social psychology. *Rev Personality Soc Psychol* 1, 26–53.

Ryan, R.M., Sheldon, K.M., Kasser, T. & Deci, E.L. (1996) All goals are not created equal: an organismic perspective on the nature of goals and their regulation. In Gollwitzer, P.M. & Bargh, J.A. (eds), *The Psychology of Action: linking cognition and motivation to behaviour*. New York: Guilford, pp. 7–26.

Sappington, A.A. (1990) Recent psychological approaches to the free will versus determinism issue. *Psycholog Bull* 108, 19–29.

Scheier, M.F. & Carver, C.S. (1985) Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Hlth Psychol* 4, 219–47.

Taylor, S.E., Pham, L.B., Rivkin, I.D. & Armor, D.A. (1998) Harnessing the imagination. *Am Psycholog* 53, 429–39.

Tolman, E.C. (1925) Purpose and cognition: the determinants of animal learning. *Psycholog Rev* 32, 285–97.

Uleman, J.S. (1999) Spontaneous versus intentional inferences in impression formation. In Chaiken, S. & Trope, Y. (eds), *Dual Process Theories in Social Psychology*. New York: Guilford, pp. 141–60.

Vallacher, R.R. & Wegner, D.M. (1987) What do people think they're doing? Action identification and human behaviour. *Psycholog Rev* 94, 3–15.

Vallacher, R.R. & **Wegner, D.M.** (1989) Levels of personal agency: individual variation in action identification. *J Personality Soc Psychol* 57, 660–71.

Wegner, D.M. & **Wheatley, T.P.** (1999) Why it feels as if we're doing things: sources of the experience of will. *Am Psychol* 54, 480–92.

Weiner, B. (1985) 'Spontaneous' causal thinking. *Psycholog Bull* 97, 74–84.

Weiner, B. (1986) *An Attributional Theory of Motivation and Emotion.* New York: Springer-Verlag.

Wicklund, R.A. & **Gollwitzer, P.M.** (1982) *Symbolic Self-completion.* Hillsdale: Erlbaum.

Wright, R.A. (1996) Brehm's theory of motivation as a model of effort and cardiovascular response. In Gollwitzer, P. M. & Bargh, J.A. (eds), *The Psychology of Action: linking cognition and motivation to behavior.* New York: Guildford, pp. 424–53.