Motivation and Action: Introduction and Overview

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Human life is composed of a continuous flow of activity. Besides the infinite variety of overt actions and expressions that impact the social and physical environment, it also has a more covert side in the mental activities of experiencing, perceiving, thinking, feeling, and imagining. These mental activities are part of the flow, although they cannot be observed directly by others and have no direct impact on the environment. The scope of human activity thus ranges from dreaming (Klinger, 1971) to preplanned, intentional acts. The psychology of motivation is specifically concerned with activities that reflect the pursuit of a particular goal and in this function form a meaningful unit of behavior. Motivational research seeks to explain these units of behavior in terms of their *whys* and *hows*.

Questions pertaining to the whys of human activity address its purposes from a variety of perspectives; for example:

- Can different units of behavior be assigned to one and the same class of goals and differentiated from other classes of goals?
- How do these classes of goals evolve in the course of an individual's development, and which individual differences exist in this regard?
- Why is it that specific situational conditions prompt people to choose certain goal-oriented activities over others and to pursue them with a certain amount of time and energy?

It is only recently that the focus of attention in academic psychology has returned to the hows of human activity; e.g., to how people, having decided on a course of action, actually come to execute (or abandon) it. Questions of this kind have always occupied laypeople – after all, we are all familiar with the difficulties of following through on our intentions in everyday life, for example:

- Why do we find it easy to implement some intentions, but keep losing track of others?
- Why is it that some people find it easier than others to act on their decisions and realize their goals?
- Do people become better at pursuing their adopted goals over the course of life?
- Which situational conditions facilitate or inhibit the resolute pursuit of goals?

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1.1 Universal Characteristics of Human Action

Two universal characteristics determine the basic structure and general directionality of motivated human action:

1. The striving for control
2. The organization of goal engagement and goal disengagement

These two characteristics of human action are so universal within and indeed far beyond our species that it is hard to imagine human behavior being any different (see the overview in J. Heckhausen, 2000; the first author is solely responsible for the arguments presented in this section). It would seem to be a given that human behavior is geared to effecting change in the environment, and how else might it be directed than either pursuing a goal or withdrawing from a goal? On closer consideration, however, it is clear that these characteristics are in fact an outcome of *behavioral evolution* and anything but a given. Moreover, the function they fulfill in guiding and organizing the organism's activities is highly adaptive. This is one of the reasons why biopsychological approaches to motivation that predominantly use animal models are so useful for investigating specific functions of the brain to explain motivational phenomena (see Chap. 10).

1.1.1 Control Striving

Control striving – i.e., the striving for direct or *primary control* of the physical and social environment – is part of the motivational makeup of our species (White, 1959). In fact, control striving is not unique to humans but is an outcome of behavioral evolution in all mammals and possibly all species that are mobile and thus in need of general mechanisms of behavioral regulation. Under changing environmental conditions, the organism can thus stay focused on the aimed for outcome as a guideline to modify its behavior (see the overview in J. Heckhausen, 2000; Schneider & Dittrich, 1990). Fixed stimulus-response patterns and instinctive behavior are not flexible enough to allow adaptive responses to environmental variation. Open behavioral programs (Mayr, 1974) or behavioral modules (Cosmides & Tooby, 1994; Fodor, 1983; Rozin, 1976), operating in conjunction with domain-general processes of behavioral regulation associated with emotional states and motivational orientations (Hamburg, 1963; Plutchik, 1980; Scherer, 1984), offer a more promising approach. In recent decades there has been a veritable explosion of research on cognitive modules such as risk perception and decision making (e.g., Gigerenzer, Todd, & ABC Research Group, 1999), social exchange (e.g., Cosmides & Tooby, 1992), and foraging (e.g., Krebs, 1980). However, comparative and evolutionary psychology has virtually ignored the motivational and volitional control of behavior. Yet there are both theoretical and empirical reasons for assuming that a set of basic motivational modules regulates control striving and control-related behavior (see also Chap. 15, Sect. 15.2):

1. In mammals and probably many other species, there seems to be a widespread *preference for behavior-event contingencies* over event-event contingencies: organisms are motivated to engage in behaviors that produce contingent effects (e.g., baby smiles, mother vocalizes).
2. *Exploration* is also a universal motivational system in mammals and engages the organism with the goal of extending its range of control over the external environment.
3. There is much evidence for an *asymmetric pattern of affective responses to positive and negative events* (Frijda, 1988): Organisms soon get used to the positive affect experienced after positive events, whereas the negative emotions elicited by negative events are much longer lasting. This motivates individuals to aspire to new goals rather than resting on their laurels after successes and prevents them from giving up too soon in the face of setbacks.

The first manifestations of control striving in human ontogenesis can be observed in neonates (Janos & Papoušek, 1977; Papoušek, 1967). Experiences of control are fostered in early

parent-child interactions, soon followed by a generalized expectancy of control (Watson, 1966) and – with the development of the self-concept in the second year of life (Geppert & Heckhausen, 1990) – by achievement striving, the goal of which is to demonstrate personal competence (for details, see Chap. 15):

- Human control striving is motivated by both an innate preference for behavior-event contingencies and specifically human anticipatory self-reinforcement, with its attractive and threatening aspects (Chap. 15, Sect. 15.4).

1.1.2 Goal Engagement and Goal Disengagement

Human action consists of organized behavior and experience. Perceptions, thoughts, emotions, skills, and activities are coordinated to facilitate either the attainment of goals or disengagement from unattainable or futile goals. During periods of *goal engagement*, individuals focus on what is important and ignore irrelevant stimuli. They put key procedures in place, attune their attention and perception to stimuli that trigger or cue behavior, and shield themselves from potential distractions. Expectations of control are optimistic. Research based on the Rubicon model of action phases has provided a wealth of empirical evidence for mental and behavioral resources being orchestrated in this way to facilitate goal pursuit (Chap. 11).

During periods of *goal disengagement*, by contrast, goals are deactivated. This does not imply a gradual decrease in goal engagement; on the contrary, goal disengagement is an active process whereby the processes typical of goal engagement are counteracted (Wrosch, Scheier, Miller, Schulz, & Carver, 2003). It involves degrading the original goal and enhancing the value and attainability of alternative goals, defending self-esteem against experiences of failure, and, more generally, seeking to ensure that disengagement from a particular goal does not undermine motivational resources in the long term (J. Heckhausen, 1999; Heckhausen, Wrosch, & Schulz, 2010).

Goal engagement and goal disengagement can be seen as two motivational modes: *go* and *stop*. In adaptive behavior, at least, the two modes do not overlap, but discretely focus an organism's cognitive, behavioral, and motivational activities on the efficient investment of resources. After all, it is much more efficient to decide on a goal and pursue it resolutely than to dither between options, squandering resources without attaining the aspired goal. Should a goal prove to be unattainable or its costs too high, it makes sense to abandon that goal once and for all, without getting caught up in *postdecisional conflicts* or clinging halfheartedly to old habits, thus wasting mental, behavioral, and temporal resources that could be put to better use in the pursuit of new, attainable goals.

To date, the evolutionary precursors of this form of action regulation remain largely uncharted, but it seems reasonable to assume that animals also redirect their energies into more efficient pursuits wherever appropriate, as can be illustrated by the example of a predator pursuing its prey. Although it begins the chase at top speed, a predator that finds itself outrun will not slow down gradually, but will stop and turn away from its prey abruptly as soon as it becomes clear that its efforts are futile. In other words, it will save its energy for more worthwhile hunts (see also Chap. 17, Sect. 17.3.2 "Action Phases in the Pursuit of Developmental Goals"). Very little previous research on the evolution of behavior (e.g., French, Kamil, & Leger, 2001; Nesse, 2000, 2001) has addressed questions of motivational and volitional psychology. Cross-species studies remain scarce (cf. Bitterman, 1975), although this field of research would doubtless be highly productive, given that the regulation of goal-directed behavior by means of discrete go and stop modes can be assumed to be widespread in the animal kingdom as well (see also the overview in J. Heckhausen, 2000, and in Chap. 16). In contrast, much progress and innovation has been achieved in research on human motivational and volitional self-regulation in the past 20 years. Section 1.3 will provide a more in-depth discussion of these issues and provide guidance where to find them discussed in this book.

Summary
The two main, universal characteristics of motivated behavior are control striving and the organization of action into phases of goal engagement and goal disengagement.

1.2 Motivation as a Product of Person and Situation

Motivation psychology seeks to explain the direction, persistence, and intensity of goal-directed behavior. The many factors involved can first be classified as pertaining either to the person or to the situation. Throughout this volume, we will draw on the general model of motivation presented in Fig. 1.1 to show how the topics examined are accommodated within a general model and to illustrate how they relate to one another. The model integrates Heinz Heckhausen's (1977a, 1977b) extended cognitive model of motivation and Rheinberg's representation of the basic model of "classical" motivation psychology (Heckhausen & Rheinberg, 1980).

An individual's motivation to aspire to a certain goal is influenced by person factors and by situation factors, including the anticipated outcomes of actions and their consequences. In the following three sections, we will outline these influences and show where the relevant chapters of this book fit into the overall model of motivation.

1.2.1 Person Factors: Needs, Implicit and Explicit Motives

Motivational influences that reside within the person (Fig. 1.1, component 1) are crucial to both lay explanations and scientific theories of motivation. In a manner of speaking, they catch the eye at first glance. Three main kinds of person factors can be distinguished:

- Universal behavioral tendencies and needs
- Motive dispositions (implicit motives) that distinguish between individuals
- The goals (explicit motives) that individuals adopt and pursue

Definition
By universal behavioral tendencies and needs, we mean basic physical needs and the striving for control that underlies the various motives.

As part of the legacy of early research on motivation and learning, basic needs are covered primarily in the opening chapters of this volume. The focus here is on basic *physiological needs*, such as hunger and thirst, that are shared by all humans (Chap. 3, Sect. 3.3 and Chap. 5, Sects. 5.4.1–5.4.3, Chap. 10, Sect. 10.4) and that vary according to the situational degree of deprivation (Chap. 4, Sect. 4.2). The general and universal *striving for control* underlies more specific moti-

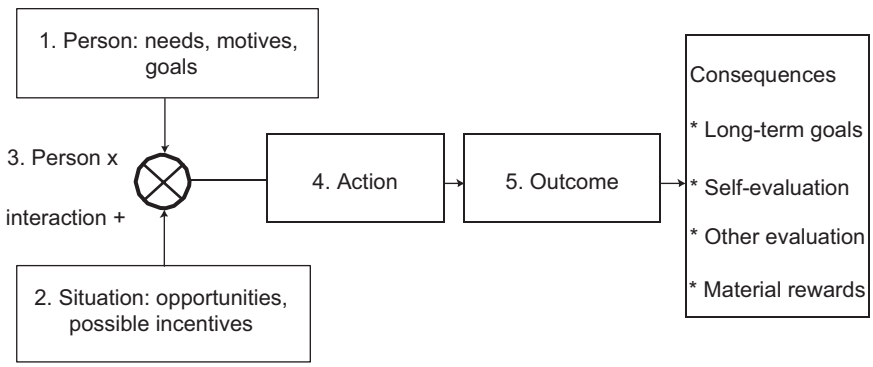

Fig. 1.1 The determinants and course of motivated action: general model

vational orientations (Sect. 1.1.1) and determines motivated action across the entire lifespan (Chap. 16 "Motivation and Development", Chap. 17 "The Motivation of Developmental Regulation").

Individual *motive dispositions* play a major role in both lay explanations of behavior and the scientific study of motivation (Chap. 3). They seem best able to explain why individual differences in behavior persist across time and situations (see also the excursus on "Kelley's Cube Model of Causal Inferences" below). Nothing would seem more natural than to attribute differences in behavior to individual dispositions: to the person's traits, "factors," habits, and motives, in short, to his or her "personality."

The evident heredity of certain characteristics reinforces the tendency to attribute interindividual differences in behavior to underlying dispositions. Besides physical characteristics, these include skills and abilities, behavioral styles, personality, and its development (Plomin, 2004; Plomin, DeFries, Craig, & McGuffin, 2003):

> Enduring individual motive dispositions, which have recently been labeled implicit motives as distinguished from explicit motives or goals (Chapter 9), are affectively charged preferences for certain kinds of incentives (habitual propensities) that are acquired in early childhood. (McClelland, Koestner, & Weinberger, 1989)

These incentives can be classified according to motivational themes: challenges to personal control in performance situations in the case of the achievement motive (Chap. 6), opportunities for social closeness and social bonding in the case of the affiliation motive (Chap. 7), and opportunities for social control in the case of the power motive (Chap. 8). In this volume, we focus on these "Big Three" motives of achievement, affiliation, and power. It is here that research is most advanced and where the main concepts of motivation psychology can best be demonstrated.

Definition
In contrast to implicit motives, explicit motives reflect the conscious, verbally represented (or representable) self-images, values, and goals that people attribute to themselves (Chap. 9).

In many cases, implicit and explicit motives do not match: people's conscious impressions of themselves and their motives are not necessarily congruent with their unconscious preferences and habits. In the best case scenario, implicit and explicit motives work together, and the specific goals that people set themselves in given situations (their explicit motives) coincide with their implicit motives. But this is by no means the rule. Implicit and explicit motives are frequently at odds, with detrimental consequences for efficiency, subjective well-being, and even mental health (Chap. 9).

Explicit action goals are the core of action control (Chap. 11 "Motivation and Development"). They provide directionality of behavior and a criterion for success and give the individual reason to muster the necessary motivational resources and to shield those resources against distractions. Goals can be more abstract or more concrete in nature and play a major role in the organization of motivated behavior both in individuals and in groups across many domains of life such as workplace (Chap. 19 "Motivation and Volition in the Workplace") and sports (Chap. 20 "Motivation and Volition in Sports").

1.2.2 Situation Factors: Intrinsic and Extrinsic Incentives

It soon becomes clear that purely person-centered, dispositional approaches to the explanation of motivated behavior overlook some important aspects. Above all, explanatory models based on enduring personality differences fail to account for the opportunities and constraints of the situation itself. Is the world really divided into thieves and nonthieves, or is it not opportunity that makes a thief?

There are various reasons for focusing on the situation, rather than the person, when seeking to explain behavior:

1. It is only when account is taken of the situation that within-person variations (i.e., intraindividual differences) in behavior can be properly identified.
2. A situation-based approach to behavioral motivation makes it possible to examine

common and otherwise unremarkable behaviors that have wide generalizability as caused by a specific situational context.
3. Situations can be controlled and varied systematically in experimental approaches.

Early situation-based approaches to the psychology of motivation focused on the organism's need states or drive strengths and on learning experiences; e.g., in experiments with hungry rats that had learned to tolerate an aversive stimulus to obtain food (Chap. 4). As research progressed, attention shifted to the cognitive implications of situational influences; e.g., in Lewin's conflict theory and Festinger's theory of cognitive dissonance. There has recently been a resurgence of interest in nonconscious situational influences; e.g., in how *priming stimuli* activate social stereotypes (Chap. 4).

An approach to situational influences on motivated behavior that is more closely related to Heinz Heckhausen's extended cognitive model of motivation focuses on anticipatory *incentives*.

Definition
Every positive or negative outcome that a situation can promise or signal to an individual is called an "incentive" and has "demand characteristics" for an appropriate action. Incentives may be associated with the action itself, its outcome, or various consequences of an action outcome.

As shown in Fig. 1.2 (see also Fig. 13.1 in Chap. 13), situations can differ in the levels and patterns of *situation-outcome expectancies* (7 in Fig. 1.2), *action-outcome expectancies* (8 in Fig. 1.2), and *outcome-consequence expectancies* (9 in Fig. 1.2). When situation-outcome expectancies are high (i.e., when it is assumed that the situation will automatically lead to the outcome, even without active intervention), there is little incentive to act. But when situation-outcome expectancies are low and action-outcome expectancies are high, the incentive to act is potentially high, particularly if outcome-consequence expectancies are also favorable.

Each component of a course of action has its specific incentives (Chap. 13). Some are *intrinsic*, meaning that they reside in the activity itself (4 in Fig. 1.2) or its outcome (5 in Fig. 1.2). Some are *extrinsic*, meaning that they derive from the consequences of actions and their outcomes – e.g., progress toward long-term goals, self-evaluation and evaluation by others, or material rewards (6 in Fig. 1.2). Research interest has long focused on the self-evaluative consequences of action outcomes, particularly in the field of achievement motivation, whereas incentives inherent in the activity itself have been neglected in the past. Recent years have seen a shift in focus, however, with research programs on the experience of flow, willingness to take risks, interests, shared experiences, and achievement-oriented activity incentives providing valuable insights (Chap. 14). Numerous related studies have been done in applied fields such as school (Chap. 18 "Motivation at School and University"), workplace (Chap. 19 "Motivation and Volition in the Workplace"), and sports (Chap. 20 "Motivation and Volition in Sports").

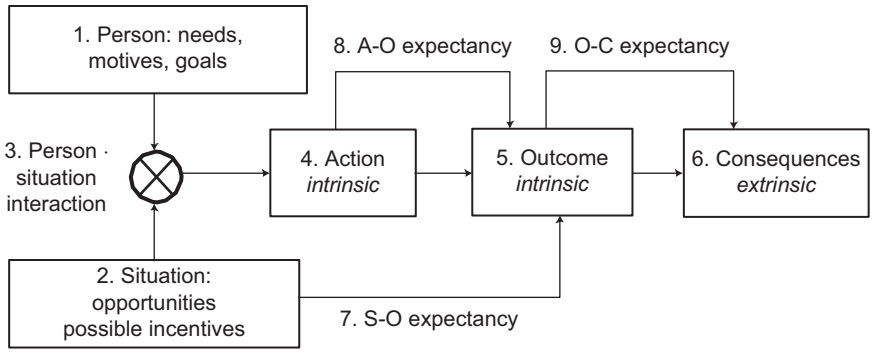

Fig. 1.2 Determinants of motivated action: general model with outcome- and consequence-related expectancies

Excursus

Kelley's Cube Model of Causal Inferences

The attribution cube model posited by social psychologist Harold Kelley (1967) describes how we as laypeople (and indeed as scientists) determine the extent to which a behavior is attributable to the person or to the environment. Kelley distinguishes three criterion dimensions for the explanation of behavior: consensus, distinctiveness, and consistency (Chap. 14).

1. *Consensus: comparison with the behavior of others (individual differences).* The less an individual's behavior corresponds with that of most other people in the same situation, the more it seems to be governed by individual factors. If, for example, a crowd of onlookers gathers around an accident victim and only one person kneels down to help, he or she is thought to be very "helpful." Conversely, the more an individual's behavior corresponds with that of most other people in the same situation, the less likely it is to be determined by person factors and the more likely it is to be driven by environmental factors. If, for example, a student regularly attends a compulsory class once a week, and his or her fellow students all do the same, we see no reason to attribute that behavior to a particular personality trait. Rather, it seems to be caused by the situation, specifically the obligatory nature of the class.
2. *Distinctiveness: comparison with behavior in other situations (intraindividual differences across situations).* The more consistent a person's behavior is across situations, the more likely it is to be attributed to individual person factors. If, for example, an employee is not only focused on his work at the office, but continues to talk about it during the company outing and turns every social get-together into a work meeting, he is thought to be highly "achievement motivated." Conversely, the less consistent a person's behavior is across situations, the more that behavior is deemed to be determined by situational factors. If, for example, a student cheats in an exam held in a large auditorium with insufficient invigilation, but not when playing cards with her friends, the assumption might be that she hopes not to be caught cheating in the exam, but considers the risk of being exposed as a cheat by her friends as too high.
3. *Consistency: comparison with earlier behavior (stability or intraindividual differences over time).* When someone's behavior remains consistent over time, it seems reasonable to attribute that behavior to individual person factors. If, for example, a boy who always did his very best to solve difficult problems at kindergarten is eager to learn to read at school, he is assumed to be highly and consistently "achievement motivated." Conversely, if an individual's behavior fluctuates over time, that behavior can reasonably be attributed to differences in situation factors. If, for example, a girl who always chose particularly difficult tasks at kindergarten and put a great deal of effort in solving them, turns out to be bored and distracted at school, it would seem that the tasks set by the teacher are "too easy."

1.2.3 The Interaction of Person and Situation: Subjective Patterns of Incentives

Which is the crucial factor, the person or the situation? Attempts to answer this question are futile for at least four reasons:

1. *It is impossible to isolate the two.* We can no more conceive of person factors abstract from a situation than we can of situation factors abstract

from a person. In other words, person always assumes "in a situation," and situation always assumes "for a particular person" (Bowers, 1973). In everyday life, individuals are characterized in terms of whether or not their behavioral repertoires are suited to certain situations (Cantor, Mischel, & Schwartz, 1982).

2. *Whether situation factors or person factors seem to have the strongest influence on behavior is determined largely by the sampling of variables from each of these domains.* Because it is not possible to define comparable units for each domain, it is difficult to determine whether samples of persons and situations are representative and therefore comparable. If, for example, a sampled group of individuals is very heterogeneous (e.g., in terms of age, mental health, etc.) and the variation in situations is less heterogeneous (e.g., achievement-related demand characteristics only), differences in behavior will obviously be more strongly associated with the person factors than with the situation factors. Conversely, if there is more situational variation than variation among persons, situation factors will necessarily dominate (Olweus, 1976).
3. *It is not the "situation" in an objective or intersubjective (i.e., consensual) sense that influences behavior, but the individual (subjective, "idiosyncratic") interpretation of it.* The situation is always something that is perceived, i.e., the product of an individual's thought, and is thus itself influenced by person factors. The incentives residing in activities, action outcomes, and their consequences are not set in stone; they take shape in the eye of the beholder. What one person sees as an exhilarating motorbike ride, another will see a reckless escapade on a speeding death trap. And what one person scorns as filthy lucre will prompt another to spare no effort at work. In other words, it is not the situation in the "objective" sense of intersubjective consensus among outside observers that prompts action, but the way the situation is perceived by the individual.
4. *The degree to which behavior is seen to be determined by the person or the situation depends on the observer's perspective.* We tend to view our own behavior as influenced primarily by the features of the perceived situation (Jones & Nisbett, 1971), but as observers of the behavior of others, we are more likely to attribute variations to their personal characteristics. The difference can be explained in terms of the salience of figure-ground articulations. When we observe the behavior of others, situational factors constitute the background against which their actions become salient. In self-observation, the reverse is true: situational features are perceived as figures against the background of our own course of action.

Expectancy-value theory permits the systematic integration of person and situation factors in models that yield predictions about behavior (Chap. 5). Although the expectancy of being able to attain a particular goal is largely dependent on situation factors, its value is very much "in the eye of the beholder" and thus conditional on the individual's implicit and explicit motivational state. People are most likely to perform an action when the product of expectancy and value is at its highest. In other words:

- The individual aspires to the goal with the highest possible incentive value, taking into account the probability of its attainment. Whether or not a situation acts as an incentive for a specific individual depends on whether or not it corresponds with that person's implicit and explicit motives.

Person and situation interact in these kinds of motivational processes. In addition to the incentive conditions of the situation (e.g., perceived opportunities to attain certain goals), the motives aroused play a decisive role, determining the incentive values of the anticipated outcomes. Depending on the individual motive orientation, situations that appear similar to outside observers may seem radically different to the individual involved. For example, tasks of intermediate difficulty are an irresistible incentive for individuals with a strong achievement motive (high hope for success, low fear of failure), whereas individuals high in fear of failure tend to avoid them (Chap. 6). In other words, whether or not achievement incentives are

equivalent in enticing behavior is entirely dependent on the individual's achievement motive. The same holds for the motives of affiliation and power (Chaps. 7 and 8).

Summary
A person's motivation to pursue a certain goal is determined by situational stimuli, personal preferences, and the interaction of the two. The resultant motivational tendency is a composite of the various incentives associated with the activity, its outcome, and its internal (self-evaluative) and external consequences, each weighted according to the personal motive profile.

1.3 Motivational and Volitional Regulation in the Course of Action

A resultant motivational tendency alone does not compel us to pursue the respective action goal. Before this can happen, the tendency resulting from the situational incentives and their personal evaluation must become an *intention*.

- Processes of intention formation determine which of the motivational tendencies that are present at any given time and that swell or subside depending on the specific situation and need state should gain access to action.

Without a superordinate instance to regulate the activation and deactivation of goal intentions, ordered sequences of behavior would be inconceivable. The strongest tendency to emerge at any given moment would be executed directly, causing the ongoing activity to be interrupted. It would be impossible to defer action until a suitable opportunity arises, to pursue a goal doggedly until it has been attained, to break intended actions down into consecutive steps, or indeed to delay gratification of the strongest resultant motivational tendency in favor of a weaker one for which the situation is relatively auspicious. Yet we know from experience that all this is possible and that individual behavior is not at the mercy of fluctuating motivational processes or constantly changing resultant tendencies.

Definition
Independent regulatory processes determine which motivational tendencies are implemented, at which opportunity, and in what manner. These processes are called "volition."

Motivation psychology long-neglected processes of volition (but see Lewin, Dembo, Festinger, & Sears, 1944), and focused almost exclusively on *motivation*, i.e., the setting or selection of goals. It was left to lay psychologists and the authors of self-help books to consider questions of goal realization or volition. In the early 1980s (Kuhl, 1983), however, the question of how goal implementation is regulated recaptured scientific interest (Halisch & Kuhl, 1986; Heckhausen, 1989; Heckhausen, Gollwitzer, & Weinert, 1987; Heckhausen & Kuhl, 1985), paving the way for modern *action-oriented volition research*, which constituted the framework for the development of the *Rubicon model of action phases* (Chap. 12; Heckhausen, 1989), research on the mechanisms underlying *action intentions* (Chap. 12; Gollwitzer, 1999), and a comprehensive *personality psychology model of action regulation and self-regulation* (Chap. 13; Kuhl, 2000a, 2000b).

The action-phase model, also known as the Rubicon model, serves as a useful framework model in research on volition, showing where the various functions of volitional processes come into effect within a sequence of behavior. Figure 1.3 shows the main action phases and their position in our overview model of motivation.

There are two important transitions as the individual moves from motivation to action:

- The first transition is *intention formation*, which marks the shift from the motivational phase of *deliberation* on motivational tendencies to the volitional phases of *planning* and *action*. It is at this point that the individual determines which motivational tendencies are allowed to pass the threshold, i.e., to acquire the status of an intention that governs behavior as and when appropriate.

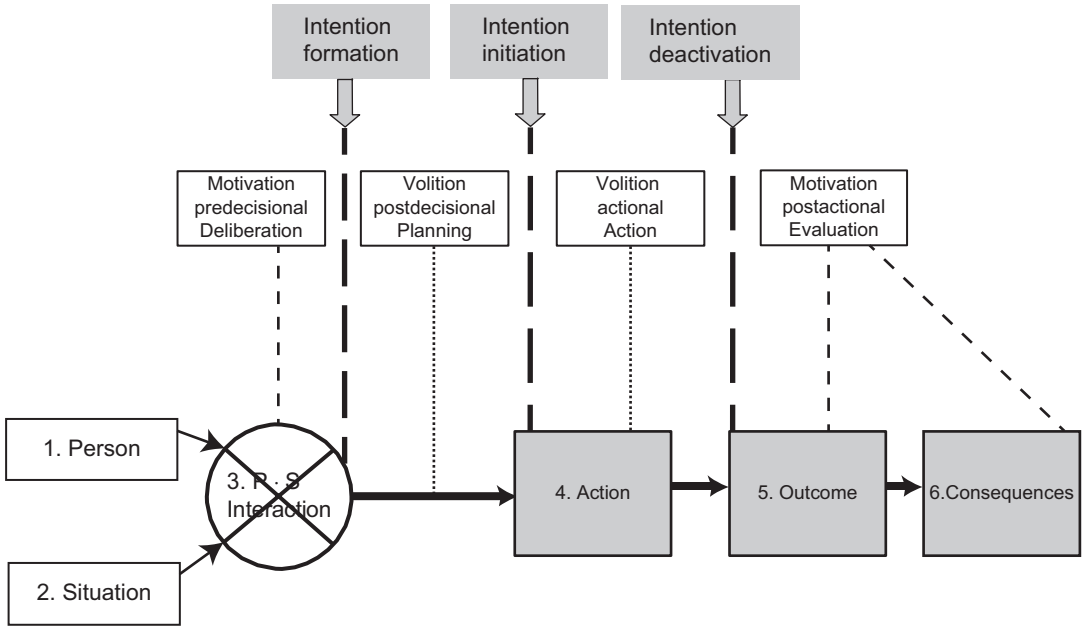

Fig. 1.3 Integration of the action-phase model and the general model

- The second transition is from intention formation to the *initiation of action*, i.e., from the volitional phase of planning and to that of acting. It is at this point that the individual determines which existing or newly formed intentions should gain access to action and be put into practice.
- Once an action has been completed or abandoned, the intention is deactivated. The *deactivation of an intention* marks a third shift: from a volitional to a motivational phase that involves *evaluation* of the action, reflection on its success, and if needed, on failure and *causal attributions* (Chap. 15 "Causal Attribution of Behavior and Achievement"):
  - What is decisive about all of these transitions between different phases of action is that they are ideally discrete shifts rather than gradual changes. Diverse facets of motivational orientation are coordinated and act in concert to facilitate the functioning of each action phase. These motivational facets include conscious and nonconscious processes of attention control and information processing; cognitive processes of interpretation, causal attribution, and prediction; and social cognitive processes of goal and self-evaluation. (Chap. 12 "Motivation and Volition in the Course of Action")

Three major modes of action regulation can be differentiated, each with a specific profile regarding the various facets of action regulation (see following summary box).

Phases of Action Regulation in the Rubicon Model

1. Goal selection in the predecisional phase before the Rubicon is crossed
2. Goal engagement (go mode) in the postdecisional phase and the action phase once the Rubicon has been crossed
3. Goal disengagement or intention deactivation (stop mode) in the postactional phase, subsequently leading into a new cycle of action

The predecisional and postactional phases are regarded as "motivational." Information processing during these phases should be open-minded and impartial, allowing the individual to draw balanced conclusions and make the best possible decisions. During the postdecisional and the actional phases, by contrast, a volitional orientation predominates, and information processing and evaluation are strongly biased in favor of the chosen alternative. These differences have not only been documented in laboratory studies but also have important implications in applied fields such as workplace (Chap. 19 "Motivation and Volition in the Workplace") and sports (Chap. 20 "Motivation and Volition in Sports").

Not everyone is equally skilled at deploying the many facets of volitional regulation of behavior to their best advantage. There are marked *interindividual differences* in the ability (or inability, sometimes pathological) to orchestrate volitional and motivational self-regulation (Chap. 13) and in how these person factors coincide with situational opportunities across the life course (Chap. 17; see also the construct of "motivational competence," Rheinberg, 2002; and Chap. 14, Sect. 14.7). These individual styles of self-regulation and action control may be the product of early experiences of affective self-regulation. However, much time and cost-intensive longitudinal studies are needed to identify the early origins of individual styles of self-regulation (Chap. 13, Sect. 13.6 and Chap. 16, Sect. 16.7).

Summary

Motivational and volitional regulation of action alternate across an action cycle, thus ensuring a form of information processing that is appropriate to the functioning of each phase of action. Ideally, the transitions between the action phases are discrete and efficient. There are considerable individual differences in the ability to regulate motivation and volition, but research on their developmental origins is still scarce.

1.4 Development of Motivation and Motivation of Development: The Dynamic Interaction of Person and Situation Across the Life Span

The relationship between motivation and development across the life span can be seen from two perspectives: on the one hand, as the *development of motivation* (Chap. 16), and, on the other hand, as the *motivation of development* (Chap. 17). In both cases, the regulation of human behavior is largely dependent on the individual capacity for *control* and its stability and change across the life course. The capacity to influence the environment (termed the potential for "primary control" in some conceptual contexts) undergoes radical change as an individual moves through the life course. Following the helplessness and dependence of infancy, the potential for control increases rapidly and universally in childhood and adolescence, plateaus out in adulthood, and declines gradually in old age. The motivational and volitional regulation of behavior must allow for these enormous changes in the potential for control across the life span.

The prerequisites for behavior directed at controlling external events are acquired in infancy and early childhood; e.g., generalized control expectancies, orientation toward an intended action goal, planning of steps to achieve that goal, and termination of behavior once it has been attained. The development of achievement-related emotions such as pride and shame imbues control-related behavior with a strong element of self-esteem and makes ambitious undertakings more attractive or (in the case of failure) more threatening. Evaluations of personal achievements and their anticipatory effects on achievement-motivated behavior are further elaborated when children become able to distinguish between task difficulty and their own competence and indeed between ability, effort, and the combination of the two in predicting and explaining success and failure.

Over the course of this universal developmental process, children see themselves as increasingly competent agents, yet they remain quite dependent on the guidance and support of adult caregivers. Although research in this area is still scarce, there is evidence to indicate that the behavior of these reference persons and their relations to the growing child lay the foundations for interindividual differences in implicit motivational and volitional orientations. Developmental trajectories reach a major crossroads when children start school, where social frames of reference predominate. These may either coincide or conflict with children's implicit motivational orientations and either promote or inhibit their motivation and development. To date, little is known about the development of interindividual differences. However, the past two decades of research have shown that the cognitive prerequisites of achievement-motivated self-evaluation only reveal a small section of the puzzle. Future research must consider the affective dynamics of parent-child dyads and early experiences of control in these contexts.

- Investigating the motivation of development broadens our outlook on the development of motivation, opening up a dynamic, interactive perspective on the interaction between motivation and development.

It is only recently that the part individuals play in actively shaping their own development has become a topic of investigation, particularly in life span developmental research (Chap. 17). The same questions might also have emerged from work on the development of motivation itself, which points to increasing levels of independence in the orchestration of action opportunities and developmental contexts. In adolescence and early adulthood, the individual might well have acquired sufficient potential for agency to play a decisive role in the selection of occupational and familial life paths. The question then arises, to what extent individuals remain "true" to these paths, and how much scope they have to shape them along the way. Recent research has shown that developmental goals can organize action cycles into phases of goal engagement and goal disengagement over the course of development, thus regulating the investment and withdrawal of resources (Heckhausen et al., 2010). Apart from their long-term nature, these cycles of action have much in common with more short-term actions and can also be examined within the framework of action-phase models. There is another important aspect, however. Individuals actively influence their environment over the course of development, thus creating their own developmental ecologies and opportunities for future action. Interindividual differences thus lead to increasingly divergent paths, for better or worse. A systems theoretical integration of person and situation across the life span can open up an integral perspective on this *dynamic interactionism*. The *dialectic interaction between person and environment* works not only in the here and now, but also across the spatial and temporal expanse and the effects of lifelong development.

Summary

Research on the development of motivation and research on the motivation of development complement and enrich each other. Many universal developmental achievements in the motivational and volitional regulation of control behavior occur in early childhood and are closely tied to the support and guidance provided by adult caregivers. The active influence that individuals have on their personal development represents a continuation of the striving for control in childhood and adolescence and gives the dialectic interaction between person and environment across the life span a truly dynamic quality.

Review Questions

1. *What kind of questions does motivation psychology address?*

   Motivation psychology addresses the "whys" and "hows" of activities that reflect the pursuit of a particular goal.

2. *What are the universal characteristics of human behavior and how are they defined?*

   Striving for control: seeking and establishing behavior-event contingencies or – to use the terminology of control theory – primary control of events in the material and social environment.

   Organizing action into phases of goal engagement and goal disengagement, perceptions, thoughts, emotions, skills, and activities are coordinated to facilitate either the attainment of goals (goal engagement) or disengagement from futile or unattainable goals.

3. *Which factors influence the resultant motivational tendency?*

   The resultant motivational tendency is influenced by personal preferences, situational incentives, and their mutual interaction. It is a composite of the various situational incentives residing in the activity, its outcome, and self- and other-evaluations, each weighted according to the personal motive profile.

4. *What is the difference between motivation and volition?*

   Motivation concerns processes of goal selection and goal setting. Volition concerns regulatory processes that determine which motivational tendencies are implemented, at which opportunity, and in what manner.

5. *How can the development of motivation be defined, in contrast to the motivation of development?*

   The development of motivation involves the development of a universal set of basic motivational modules and of individual differences in motivation. The motivation of development is the active influence that individuals have on their development across the life span.

References

Bitterman, M. E. (1975). The comparative analysis of learning. *Science, 188*, 699–709.

Bowers, K. S. (1973). Situationism in psychology: An analysis and a critique. *Psychological Review, 80*, 307–336.

Cantor, N., Mischel, W., & Schwartz, J. D. (1982). A prototype analysis of psychological situations. *Cognitive Psychology, 14*, 45–77.

Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). New York: Oxford University Press.

Cosmides, L., & Tooby, J. (1994). Origins of domain-specificity: The evolution of functional organization. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind: Domain specificity in cognition and culture* (pp. 85–116). Cambridge, UK: Cambridge University Press.

Fodor, J. (1983). *The modularity of mind*. Cambridge, MA: MIT.

French, J. A., Kamil, A. C., & Leger, D. (Eds.). (2001). *Evolutionary psychology and motivation. Vol. 47 of the Nebraska symposium on motivation*. Lincoln, NE: University of Nebraska Press.

Frijda, N. H. (1988). The laws of emotion. *American Psychologist, 43*, 249–358.

Geppert, U., & Heckhausen, H. (1990). Ontogenese der Emotion. In K. R. Scherer (Ed.), *Enzyklopädie der Psychologie: Psychologie der Emotion* (Vol. IV, pp. 115–213). Göttingen, Germany: Hogrefe.

Gigerenzer, G., Todd, P. M., & the ABC Research Group. (1999). *Simple heuristics that make us smart*. New York: Oxford University Press.

Gollwitzer, P. M. (1999). Implementation intentions. Strong effects of simple plans. *Journal of Personality and Social Psychology, 73*, 186–197.

Halisch, F., & Kuhl, J. (Eds.). (1986). *Motivation, intention, and volition*. Berlin, Germany: Springer.

Hamburg, D. A. (1963). Emotions in the perspective of human evolution. In P. H. Knapp (Ed.), *Expression of emotions in man* (pp. 300–317). New York: International University Press.

Heckhausen, H. (1977a). *Achievement motivation and its constructs: A cognitive model. Motivation and emotion*. (1, 4 (pp. 283–329). New York: Plenum.

Heckhausen, H. (1977b). Motivation: Kognitionspsychologische Aufspaltung eines summarischen Konstrukts. *Psychologische Rundschau, 28*, 175–189.

Heckhausen, H. (1989). *Motivation und Handeln* (2nd ed.). Berlin, Germany: Springer.

Heckhausen, H., Gollwitzer, P. M., & Weinert, F. E. (Eds.). (1987). *Jenseits des Rubikon: Der Wille in den Humanwissenschaften*. Berlin, Germany: Springer.

Heckhausen, H., & Kuhl, J. (1985). From wishes to action: The dead ends and short cuts on the long way to action.

In M. Frese & L. Sabini (Eds.), *Goal-directed behavior: Psychological theory and research on action* (pp. 134–160., 367–395)). Hillsdale, NJ: Erlbaum.

Heckhausen, H., & Rheinberg, F. (1980). Lernmotivation im Unterricht, erneut betrachtet [Learning motivation in the classroom, revisited]. *Unterrichtswissenschaft, 8*, 7–47.

Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociostructural constraints as adaptive challenges*. New York: Cambridge University Press.

Heckhausen, J. (2000). Evolutionary perspectives on human motivation. *American Behavioral Scientist, 43*, 1015–1029.

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review, 117*, 32–60.

Janos, O., & Papoušek, H. (1977). Acquestion of appetition and palpebral conditioned reflexes by the same infants. *Early Human Development, 1*, 91–97.

Jones, E. E., & Nisbett, R. E. (1971). *The actor and the observer: Divergent perceptions of the causes of behavior*. New York: General Learning.

Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska symposium on motivation* (pp. 192–238). Lincoln, NE: University of Nebraska Press.

Klinger, E. (1971). *Structure and functions of fantasy*. New York: Wiley.

Krebs, J. R. (1980). Optimal foraging, predation risk and territory defense. *Area, 68*, 83–90.

Kuhl, J. (1983). *Motivation, Konflikt und Handlungskontrolle*. Berlin, Germany: Springer.

Kuhl, J. (2000a). A functional-design approach to motivation and volition: The dynamics of personality systems interactions. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Self-regulation: Directions and challenges for future research* (pp. 111–169). New York: Academic Press.

Kuhl, J. (2000b). A theory of self-development: Affective fixation and the STAR Model of personality disorders and related styles. In J. Heckhausen (Ed.), *Motivational psychology of human development: Developing motivation and motivating development* (pp. 187–211). New York: Elsevier.

Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. McHunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 333–378). New York: Ronald.

Mayr, E. (1974). Behavior programs and evolutionary strategies. *American Scientist, 62*, 650–659.

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

Nesse, R. M. (2000). Is depression an adaptation? *Archives of General Psychiatry, 57*, 14–20.

Nesse, R. M. (2001). *Evolution and the capacity for commitment. Volume III in the Russell Sage Foundation Series on Trust*. New York: Sage.

Olweus, D. (1976). Der "modern" Interaktionismus von Person und Situation und seine varianzanalytische Sackgasse. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie, 8*, 171–185.

Papoušek, H. (1967). Experimental studies of appetitional behavior in human newborns and infants. In H. W. Stevenson, E. H. Hess, & H. L. Rheingold (Eds.), *Early behavior: Comparative developmental approaches* (pp. 249–277). New York: Wiley.

Plomin, R. (2004). Genetics and developmental psychology. *Merrill-Palmer Quarterly, 50*, 341–352.

Plomin, R., DeFries, J. C., Craig, I. W., & McGuffin, P. (Eds.). (2003). *Behavioral genetics in the postgenomic era*. Washington, DC: APA.

Plutchic, R. (1980). *Emotion: A psychoevolutionary synthesis*. New York: Harper & Row.

Rheinberg, F. (2002). Freue am Kompetenzerwerb, Flow-Erleben und motivpassende Ziele [Enjoyment of competence acquisition, flow experience and motive-congruent goals]. In M. V. Salisch (Ed.), *Emotionale Kompetenz entwickeln* (pp. 179–206). Kohlhammer: Sturrgart.

Rheinberg, F. (2004). *Motivationsdiagnostik [Diagnosing motivation]*. Göttingen: Hogrefe.

Rozin, P. (1976). The evolution of intelligence and access to the cognitive unconscious. In J. M. Sprague & A. N. Epstein (Eds.), *Progress in psychobiology and physiological psychology* (pp. 245–277). New York: Academic.

Scherer, K. R. (1984). On the nature and function of emotion: A component process approach. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 293–317). Hillsdale, NJ: Erlbaum.

Schneider, K., & Dittrich, W. (1990). Evolution und Funktion von Emotionen. In K. R. Scherer (Ed.), *Enzyklopädie der Psychologie: Psychologie der Emotion* (pp. 41–114). Göttingen, Germany: Hogrefe.

Watson, J. S. (1966). The development and generalization of contingency awareness in early infancy: Some hypotheses. *Merrill-Palmer Quarterly, 12*, 123–135.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*, 297–333.

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement and subjective well-being. *Personality and Social Psychology Bulletin, 29*(12), 1494–1508.