

Running head: MOTIVES AND GOALS

**Motives and goals, or:
The joys and meanings of life**

Oliver C. Schultheiss

Friedrich-Alexander University, Erlangen, Germany

Please cite as:

Schultheiss, O. C. (2021). Motives and goals, or: The joys and meanings of life. In J. F. Rauthmann (Ed.), *Handbook of Personality Dynamics and Processes* (pp. 295-322). Amsterdam: Elsevier.

Author Note

I thank Joachim Brunstein for his helpful feedback on an earlier version of this chapter.

Please send correspondence regarding this manuscript to oliver.schultheiss@fau.de or to Oliver C. Schultheiss, Department of Psychology, Nögelsbachstrasse 49b, 91052 Erlangen, Germany.

Abstract

This chapter focuses on the roles of motives, personal goals, and their interplay in the dynamic regulation of behavior. Motives represent nonconsciously operating networks of learned cues and behaviors, built around specific, interindividually varying capacities to respond with strong affect to incentives and disincentives. Personal goals are the specific age-graded aims that people consciously construe, report on, and pursue throughout their lives and that provide meaning and a sense of purpose. Motives and goals are statistically, functionally, and neurobiologically separate regulators of behavior that can interact with each other. In the case of motive-goal congruence, high rates of goal progress are associated with enhanced emotional well-being and low rates of goal progress with impaired emotional well-being. In the case of incongruence, variations in goal progress do not impinge on well-being, although they can have an indirect effect via draining resources from the pursuit of congruent goals. Congruence can be facilitated via goal imagery, mindfulness meditation, and strategic elaboration and enhancement of a goal's motive-congruent aspects and sub-goals. Dispositional factors contributing to high congruence include referential competence, action orientation, and a strong sense of self-determination.

Keywords: Motivation; implicit motives; explicit motives; self-attributed needs; personal goals; emotional well-being motivational congruence; referential processing; referential competence; goal commitment; goal progress; goal attainability; affect; feedback loop; hedonic regulation of behavior; pleasure response; Pavlovian conditioning; instrumental learning; Picture Story Exercise; thematic content; achievement; power; affiliation;

Motives and goals, or:

The joys and meanings of life

In this chapter, I will review the roles of motives and goals – two fundamental components of personality (e.g., Carver & Scheier, 2011; Larsen & Buss, 2013) – in the regulation of behavior and in outcomes related to well-being. Motives are about the affectively toned incentives that recurrently and nonconsciously elicit motivated behavior in people, whereas goals are about the specific aims that people consciously set and pursue in their daily lives. After first characterizing the operating characteristics of motives and goals as well as how they are measured, organized, develop, and are represented in the brain, I will discuss the empirical relationship between these two key domains of personality and how they interact in shaping behavior and emotional well-being. I will also discuss research on how congruence between motives and goals can be enhanced and which personality dispositions have been found to contribute to congruence. I will close with some thoughts on the relationship between motives and goals with regard to the experience of emotional well-being and a sense of purpose in life.

Modes of behavior regulation

Many modern theories of behavior are based on cybernetic principles of feedback control (e.g., Carver, 1979; Carver & Scheier, 1998; Hyland, 1988; Miller, Galanter, & Pribram, 1960; Powers, 1973). According to these theories, behavior is guided by target states (I avoid the term “goal” here and reserve it for a more specific use; see below), represented in the brain, that recruit suitable behavioral acts and strategies aimed at attaining or avoiding these states in the presence of target-relevant occasions. To establish feedback control, the target state is regularly compared to the current state. In the case of negative-feedback control of behavior, if the current state falls short of the target state, then target-directed behavior continues until the current state

matches the target state and the target is thus attained. In the case of positive-feedback control of behavior, the individual aims at increasing or maximizing the difference between current state and target state in an attempt to avoid the target state altogether.

Regulation via feedback control is a powerful principle that appears to be behind the behavior of individual cells (Schultz, 1998), homeostatic processes (Berridge, 2004; Nelson, 2011), and, as will be elaborated in this chapter, complex and long-term human strivings (Carver & Scheier, 1998). But it can also be used to program and control non-biological systems such as air-conditioning and heating devices, robots, self-driving cars, and so on. Feedback control, whether positive or negative, therefore represents a general way in which behavior, in the broadest sense, can be regulated. In the following, I will reserve the term *motivation* to those types of feedback-controlled behavioral regulation where the feedback signal is inherently *affective*, signaling whether there is little progress towards a targeted state or the state itself could not be attained – indicated by negative affect -- or whether there is much progress towards the targeted state and/or the state itself has been reached – indicated by positive affect. In doing so, I adopt the position that affect is central for motivation (Berridge, 2004; Panksepp, 1998; Young, 1955) and that it is an ancient and powerful signal of the fitness-increasing or –decreasing aspects of behavioral regulation and its outcomes (Cabanac, 1971, 1992; Johnston, 2003).

It is important to keep in mind, then, that motivation is only one form of behavior regulation via feedback control. As the above examples of feedback control in non-living systems illustrate, behavior can also be regulated in the absence of any affective signal at all. And even in humans, many forms of behavioral regulation do not require affect to harness feedback-control mechanisms. For instance, threading a thread through a needle eye requires accurate visual feedback to determine whether the thread's end is close enough to the eye to pull

it through; that is, whether the current state sufficiently approximates a target state. Affect is not required as a discrepancy signal. Thus, feedback-controlled regulation of behavior can be hedonic in the case of motivation. But it can also be non-hedonic in many other cases. I emphasize this distinction, because it is often insufficiently represented in theorizing on the links between cybernetic principles, goal striving, and affective-emotional phenomena (e.g., Carver & Scheier, 1998; Elliot & Thrash, 2002; Klinger & Cox, 2011; Srull & Wyer, 1986). More specifically, the present chapter is based on the premise that *motives represent instances of hedonic behavior regulation, whereas goals are based on non-hedonic behavior regulation*. If this sounds like an extreme position to take, there are at least two good reasons for doing that. One is that, as I will show, there is growing evidence that (lack of) progress towards goals does not generally lead to any changes in affect; this happens only when goal progress impinges on a person's motives. The other reason is that sufficiently clear-cut hypotheses are falsifiable and invite debate; neither is the case with fuzzy, hedged assumptions.

Motives

Motives represent capacities to experience specific states, objects, or transactional outcomes as pleasant, rewarding and other states, objects, or transactional outcomes as aversive, punishing (Atkinson, 1957; McClelland, Koestner, & Weinberger, 1989; Schultheiss & Köllner, in press). Over the past 70 years, research in the McClelland-Atkinson tradition has focused primarily on the motivational needs (abbreviated as *n*; see Murray, 1938) for achievement (nAchievement), a capacity for cherishing the mastery of challenging tasks; for power (nPower), the capacity for getting a kick out of having impact on other people; and for affiliation (nAffiliation), the capacity for drawing pleasure from close, harmonious relationships with others (McClelland, 1987; Schultheiss & Köllner, in press; Winter, 1996). Other motives, such as

the needs for food, sex, or novelty, have received much less attention, although they have also been explored (e.g., Atkinson, & McClelland, 1948; Clark, 1952; Maddi & Andrews, 1966).

Winter (1996; p. 652 ff.; see also McClelland, 1987) likened motives to the ethological instinct concept by positing that they are built around an original sign stimulus leading to an automatic original response consisting of a specific affect. In Figure 1, the original sign stimulus is represented as a rewarding unconditioned stimulus (US) and the original response as the affective pleasure resulting from contact with the US. Of course, the US-affect link can also be one being characterized by displeasure when the US in question is aversive. For instance, in the motivational domain of affiliation, friendly body contact with a caregiver (rewarding US) is associated with joy and contentment, and abandonment (punishing US) is associated with sadness and distress (McClelland, 1987; Winter, 1996; see also Panksepp, 1998). From these original instincts, motives develop through learning conditioned stimuli (CS) that predict the US and behavioral responses that are instrumental for attaining (or avoiding) the US. They thus transcend the narrow confines of instinctual behavior regulation and make behavior regulation much more flexible and adaptive (see Epstein, 1982). Schultheiss and Köllner (2014; in press) have added that the broader context in which the attainment of a pleasant US or the avoidance of an aversive US took place can be learned and become part of the motive (not shown in Figure 1). For the case of sexual motivation, Agmo (2007; e.g., p. 177) takes a very similar position, arguing that the only “original-instinct” aspect of sexual behavior is that tactile stimulation of the genitals leads to enhanced blood flow and subjective excitement; everything else is learned.

=====

FIGURE 1 ABOUT HERE

=====

Note that motive strength can refer to distinct aspects of the compound effect of the link between original sign stimulus and original response and its extension through learning. First, motive strength depends on the link between the US and the pleasure response. As Atkinson (1957) stated in his classic definition of the achievement motive, individuals differ in the amount of satisfaction they can derive from US contact. A person with a strong motive gets a lot of satisfaction (indicated by a thick link between US and smiley in Fig. 1), whereas a person with a weak motive gets little satisfaction (indicated by a thin link). Although not explicitly shown, the same principle holds for negative US, with a motive amplifying the aversive affective quality of contact with such a stimulus. In short, motives turn positive US into rewards and negative US into punishers by coloring them with affect. In their recent reviews, Schultheiss and Köllner (2014; in press) have summarized evidence in support of the affect-amplifying property of motives; this evidence comes primarily from studies of facial affective responses to motive-specific stimuli and from studies of individuals' daily experiences of emotional well-being. I will discuss the latter in more detail below.

Second, according to Winter (1996; see also McClelland, Atkinson, Clark, & Lowell, 1953; Schultheiss & Schultheiss, 2014) motive strength can also be gauged from the extensity of different predictive cues (in the parlance of learning theory, conditioned stimuli or CS) and contexts that the individual has come to associate with US contact and the number of different responses (R) she or he can employ to attain a positive US or avoid a negative US. This is illustrated in Figure 1 by the variations in the number of CSs and Rs linked to the US for each motive. Under normal circumstances, the repertoire size of CS and R associated with the US can be assumed to correspond with the strength of the affective response to the motive-specific US. This idea is captured in Figure 1 by depicting the US for the motive complex on the left as

having a weak link with the affective response and also featuring very few CS and R and depicting the motive in the middle as having a strong connection between US contact and affect and featuring many different eliciting stimuli and instrumental responses to attain the US. But although this assumption is very plausible from a learning perspective, it has not yet been experimentally tested. So far, the primary evidence in support of this idea comes from the observation that in the picture story measure of motives, individuals with a strong motive typically respond to more picture cues (a CS proxy) with motivational imagery, and that the imagery they use for a given motive is more elaborate and varied (an R proxy; see Schultheiss & Schultheiss, 2014). Thus, the currently prevailing method of motive measurement gauges the extensity of eliciting cues and imagined behavioral responses to infer motive strength, although alternative approaches that try to assess the strength of the affective response directly are also conceivable (see Dufner, Arslan, Hagemeyer, Schönbrodt, & Denissen, 2015).

To summarize, motives can be thought of as complexes of learned predictive stimuli (CS), instrumental behaviors aimed at attaining positive US and avoiding negative US, and the specific contexts they occur in, all built around a core of unconditioned affective responses to primary, unconditioned stimuli and situations. Motives thus represent dispositions that are based in part on the automatic affective valuation of fundamental US and in part on the specific learning history stemming from this type of valuation.

Because neither the affective nor the learning processes involved in motives depends on verbal representations and self-reflective awareness (see LeDoux, 1996, 2002; Wilson, 2002), people generally have little introspective insight into their motives. Questionnaire scales designed to assess self-attributed needs for power, achievement, or affiliation show little or no meta-analytical convergence with motive measures in the McClelland-Atkinson tradition

(Köllner & Schultheiss, 2014; Spangler, 1992). Moreover, such scales predict different types of behavior than motives (Spangler, 1992; Stanton, Hall, & Schultheiss, 2010) and appear to be closely associated with the Big Three or Big Five trait dimensions (Costa & McCrae, 1988; Engeser & Langens, 2010; Tellegen & Waller, 2008).

In contrast to these attempts to measure motivational needs via introspection, motive research was built from the get-go on the premise that people may not have access to their motivational needs and that for this reason measures other than self-report are needed (McClelland, 1984; Winter, 1998). It was also built on the idea that a measure of motivation should be sensitive to experimental variations of motivational states (McClelland, 1958, 1987, chapter 6), foreshadowing the movement towards causal validation in modern validity theory (Borsboom, Mellenbergh, & van Heerden, 2004; Markus & Borsboom, 2013). After a series of studies testing the effects of experimental motive arousal on various measures, Atkinson and McClelland settled on thematic apperception (Morgan & Murray, 1935), that is, the telling of imaginative stories in response to socially ambiguous picture cues, as the best approach for motive assessment (e.g., Atkinson & McClelland, 1948; McClelland & Atkinson, 1948; McClelland, Atkinson, Clark, & Lowell, 1953). Measures of nAchievement, nPower, and nAffiliation were all developed by arousing the respective motive in one group of participants through specific activities, exposure to arousing audiovisual materials, or natural situations and leaving it unaroused in a control group (Winter, 1998). Subsequently, both groups wrote imaginative stories about the same set of picture cues. Systematic differences emerging between both sets of stories were then interpreted as diagnostic indicators of an aroused motivational state and translated into rules of a coding system (Boyatzis, 1998). Applied to picture stories written by new testees, individual score differences obtained with this coding system are assumed to

reflect stable differences in the dispositional need strength in these individuals and can be used to predict relevant outcomes and criteria (for reviews of the validity correlates of picture-story-based motive measures, see McClelland, 1987; Schultheiss & Köllner, in press; Winter, 1996). This method of assessment has been termed the Picture Story Exercise (PSE; McClelland et al., 1989).

The currently most widely used system for coding motive imagery in picture stories and other narrative material is Winter's (1991, 1994) running-text manual, which integrates previously separate, empirically derived coding systems for the assessment of nPower, nAchievement, and nAffiliation, combined with nIntimacy (a variant of affiliative motivation; McAdams, 1980), into an assessment tool that allows to score for all three major motive domains at once. For further information on the validity and reliability of motive measurement, please see Schultheiss and Pang (2007) and Schultheiss and Schultheiss (2014).

As the small number of motive complexes in the lower part of Figure 1 suggests, there is only a limited number of motives. It is certainly larger than the three motives portrayed here, but will probably not exceed a handful (see Schultheiss & Wirth, 2018). This is because there is only a limited number of US that have had recurrent significance for our ancestors' fitness and that therefore have stimulated the phylogenetic engineering of brain systems dedicated to dealing with them specifically. Affective neuroscientists studying emotional-motivational systems in animals are in a particularly good position to identify the relevant systems through experimental methods (Panksepp's work may be an excellent starting point for identifying core motives; see Panksepp, 1998; Panksepp & Biven, 2012). But research on humans has also made considerable progress towards a better understanding of the biological basis of motives. For instance, motives are associated with endocrine responses to situational challenges and incentives (Schultheiss,

2013a; Schultheiss & Köllner, in press) and are linked to psychophysiological responses reflecting sympathetic and parasympathetic activation (reviewed in McClelland, 1989; Schultheiss & Köllner, in press). Based on brain imaging, neuropsychological, and psychophysiological findings, it has been proposed that motives are closely tied to motivational-brain structures such as the striatum, the amygdala, the orbitofrontal cortex (OFC), and the hypothalamus, with some of these structures supporting several kinds of motivational processes simultaneously (e.g., amygdala and striatum) and others representing specific needs in anatomically and functionally distinct subunits (e.g., the OFC, the hypothalamus; Schultheiss, 2013a; Schultheiss & Schiepe-Tiska, 2013; Schultheiss & Wirth, 2018; Hall, Stanton, & Schultheiss, 2010).

Developmentally, there is evidence that motives are shaped by socialization experiences in early childhood. For nAchievement, setting age-appropriate demands for autonomous mastery, followed by rewarding affective nonverbal behavior seem to be critical (McClelland & Pilon, 1982; Winterbottom, 1958). For nPower, parental permissiveness for pre-sexual and aggressive behavior appears to play a central role (McClelland & Pilon, 1982). For affiliative motives, so far no clear-cut precursors in early childhood have been identified. But a link to early attachment processes between caregiver and child seem to be a promising route for future research (e.g., Edelstein, Stanton, Henderson, & Sanders, 2010). Schultheiss and Köllner (in press) have argued that the identification of early-childhood factors that are associated with adult motive levels does not rule out factors and processes impinging on and shaping motives during other life phases, too. One emerging line of research suggests, for instance, that motives may be influenced through prenatal and pubertal exposure to steroid hormones (Janson, Bleck, Fenkl, Riegl, Jägel, & Köllner, 2018; Köllner & Bleck, in press; Schultheiss, Frisch, et al., 2019; Schultheiss &

Zimni, 2015). And of course social learning processes throughout the life course may further alter the cues and responses associated with each motives US-affect core (Schultheiss & Köllner, 2014). This issue deserves greater research scrutiny.

To conclude, motives represent instances of the hedonic regulation of behavior. They are based on affective responses to phylogenetically relevant types of stimuli or situations and their extension through learning of predictive stimuli and contexts and behaviors aimed at approaching or avoiding the affectively charged US at their core. They appear to be represented in brain areas dedicated to affect and motivation. Motives are not accessible to language-based introspective, analytical consciousness, but affect spontaneous imagery expressed through language, which is why they can be validly measured via picture-story methods.

Goals

Goals have been defined as cognitive representations of future experiences, characteristics, or events that an individual is committed to approach or avoid (Elliot & Fryer, 2008, p. 244). The latter part of the definition appears to allude to affective processes, but in fact entails no more than behavioral regulation through negative- and positive-feedback loops, respectively, which can occur without the involvement of affect. As I have hinted at the start of the chapter, the term *goal* tends to be used in different ways by different researchers and theoreticians and its ambiguity can be highly confusing (see also Elliot & Fryer, 2008). Researchers anchored in the social and personality psychology therefore often use the more concrete term *personal goal* to denote the idea that a goal is something that people articulate, commit to, and pursue in a conscious and deliberate manner in their daily lives (Brunstein, 1993; D'Argembeau et al., 2010; Freund, 2007), and not simply a reference value that a machine would use to steer its course or an unconditioned stimulus that would guide an animal's behavior. Thus,

goal theorists typically have a meaning of the term *goal* in mind that specifically captures humans' unique capability of negotiating their age-appropriate contributions to the division of labor within their societal, cultural, and historic environment via language-based communication with others (e.g., Brandstädter, 2009; Heckhausen & Heckhausen, 2008; Morling & Kitayama, 2008; Swann, Johnson, & Bosson, 2009). From this perspective, a human who states "Tonight, I will prepare dinner for the family" is fundamentally different from a hungry animal gorging itself at the next available food source.

Consistent with this sociocultural foundation of goals, goal research stresses the importance of goals for a sense of purpose and meaning in life. Drawing on work by existential psychotherapist Frankl (e.g., Frankl, 1985), Klinger (1977) argues that people derive meaning from pursuing goals, ranging from the mundane to the lofty; without such goals, they feel empty and desolate. Similarly, Emmons (2003, p. 107) contends that "goals are essential components of a person's experience of his or her life as meaningful and contribute to the process by which people construe their lives as meaningful or worthwhile." He stresses that happiness is at best a by-product of goal pursuit, but not its primary aim (p. 106), a point that is also explicitly made by Cantor and Blanton (1996). Many authors emphasize that overarching life goals provide individuals with a unifying principle through which they integrate the various experiences resulting from these goal pursuits into a coherent sense of self (e.g., Brandstätter & Lalonde, 2007; McGregor & Little, 1998; Sheldon & Kasser, 1995). And research shows that people spend a lot of time thinking about their goals even when they are not engaged in their pursuit (Klinger, 2013). Thus, goals help people achieve a sense of consistency across extended periods of time and varied forms of activity.

Goals therefore are an important interface between the individual and her or his social world, representing individualized instantiations of societal expectations and culturally shared ideas of a meaningful life. They allow individuals to regulate and stabilize their medium- and long-term behavior in such a way that it fits in with their social matrix and makes them reliable members of their group (Jaynes, 1990; Mischel & Ayduk, 2004; Vygotsky, 1986). But this also implies that goals are *not* primarily a conscious instantiation of an individual's needs and affective preferences (see Emmons, 2003), an issue to which I will return in the discussion of the interplay between motives and goals.

The upper part of Figure 1 illustrates the typical organization of goals in a hierarchical fashion. The top of the hierarchy is represented by overarching, long-term goals whose attainment entails the realization of many subgoals (represented lower in the hierarchy), which in turn depend on the attainment of other subgoals, all the way down to the execution of concrete actions (represented at the lowest tier of the hierarchy; Carver & Scheier, 1998). The closer one gets to the highest levels of the hierarchy, the more relevant goals become for an individual's sense of identity. This level may contain goals that refer to career aspirations (e.g., "Work as a medical doctor"), but also strivings in the domain of family (e.g., "I want to be an engaged dad for my kids", "I want to be a loving and supportive wife") as well as other life domains. The common denominator to such self-defining or identity goals is that they represent core aspects of a person's sense of self and are difficult to give up (Brunstein, 2000; Markus & Ruvolo, 1989; Wicklund & Gollwitzer, 1982).

Goals can differ in the degree to which they fit other goals and may even further their attainment or are in conflict with them (Michalak, Heydenreich, & Hoyer, 2011; Riediger, 2007). This is represented by the varying connection strengths between goals. Some higher-level goals

crucially depend on the attainment of a lower-level goal (such as passing a key exam on one's way towards becoming a medical doctor) whereas for others, there is more than one way to realize a goal (e.g., to lose weight, one can cut down on food intake or increase exercise). The latter phenomenon has been termed the *equifinality* of goal striving (Rheinberg, 2008), represented by higher-level goals with varying numbers of connections to lower-level goals in Figure 1. It can be contrasted with the phenomenon of *multifinality* -- represented by cross-shaded goal circles in Figure 1 --, which occurs when several higher-level goals can be advanced by attaining one lower-level goal (e.g., working out with a friend to lose weight and spend time with a close other). But of course, goals can also be in direct conflict with each other (represented by striped lines in Figure 1). A typical goal conflict is the one between how much time to invest in career versus family aspirations (e.g., Baltes & Heydens-Gahir, 2003). Beyond goal facilitation and goal conflict, there is also the possibility of lacking goal integration, as represented by the unconnected goal circle on the right side of Figure 1. This can occur when a goal neither fits, nor positively obstructs existing goal networks. Still, unintegrated goals can be difficult to pursue simply because more integrated types goal striving are likely to claim and monopolize a person's available resources.

Goal conflict and lacking goal integration can also be the result of extrinsic goal pursuit; that is, the adoption of goals that do not fit a person's identity or sense of self, but that are adopted for other reasons. Extrinsic goal pursuit can interfere with the realization of intrinsic goals and lead to impaired well-being (Ryan & Deci, 2001). Note that this is not necessarily a contradiction to the previously made argument that goals represent individualized instantiations of sociocultural expectations. Extrinsic goals that represent novel demands and suggestions from

others can vary in the degree to which a person can fit them into her or his existing goal network built on previously negotiated, self-defining goals.

How well people can achieve their goals depends on many factors, such as goal specificity, goal conflict, or goal framing (for reviews, see Austin & Vancouver, 1996; Cooper, 2018; Grant & Gelety, 2009; Little & Gee, 2007). Two of the most important ones are (a) the degree to which a person feels committed to pursue a goal (*goal commitment*) and (b) the internal and external conditions for enacting the goal (*goal attainability*) (see Cooper, 2018). Goal commitment determines to what extent a person will become active in the pursuit of a goal in the first place and invest effort into its attainment (Locke & Latham, 1990). Commitment to a superordinate goal is particularly crucial when individuals encounter obstacles in realizing a subordinate goal. High goal commitment then elicits enhanced effort in the pursuit of the subgoal or, if the subgoal can no longer be reached, the search for and investment of effort in alternative, equifinal subgoals that can help to achieve the superordinate goal (Brunstein, 2000). Goal attainability determines the ease with which a goal can be realized. Goal pursuit is more likely to be successful if a person has the necessary skills and can also rely on social support and other environmental resources than when these conditions are not met. Brunstein and colleagues (Brunstein, 1993; Brunstein, Schultheiss, & Grässmann, 1998) demonstrated that goal commitment and attainability jointly determine goal attainment: only individuals who have both a strong goal commitment and the resources necessary for advancing it report high rates of goal progress. If either ingredient is missing, low goal progress results.

As would be expected based on goals' relevance for leading a purposeful, meaningful life, people can easily report on their goals. In fact, due to their status as negotiated, individualized instantiations of sociocultural expectations and demands, goals may represent one

of the few elements of personality that can be validly measured per self-report only. Most commonly, personal goals are assessed by having research participants list their current strivings and projects (Emmons, 1986; Little & Gee, 2007) or having them report one goal each for a variety of life domains (Brunstein et al., 1998). These goal descriptions can later be coded for their content as well as their approach or avoidance orientation (e.g., Emmons, 1986; King, 1995). In addition, or alternatively, research participants can subsequently rate each listed goal on scales assessing goal commitment, attainability, and progress (e.g., Brunstein, 1993) or indicate on a matrix based on the listed goals which goals are compatible with each other and which are in conflict (e.g., Emmons, 1986; Little & Gee, 2007). Thus, although people may not constantly represent their goals in their conscious awareness (see Gollwitzer & Schaal, 1998), they can in principle recall them and report on them.

Developmentally, the formation and pursuit of goals is predicated on our phylogenetically new language ability and particularly on the role of self-directed speech for regulating behavior (Deacon, 1997; Vygotsky, 1986; Zivin, 1979). But it also depends on the capacity for delaying gratification (Mischel & Ayduk, 2004) and the emergence of the ability for effortful control in the preschool years (Eisenberg, Smith, Sadovsky, & Spinrad, 2004, Rothbart, Ellis, & Posner, 2004). The development of these self-regulatory abilities allows children to articulate and pursue specific goals and shields them from interfering impulses and situational temptations. Throughout the life course, goals structure developmental tasks, reflecting the demands of the sociocultural environment on the person at different environmental stages (Freund, 2007; Heckhausen & Heckhausen, 2008; Smith, 1999). Thus, school-related achievement goals are prominent in childhood and adolescents; work- and family-related goals in early and middle adulthood; and goals related to retirement and caring for the next generation in

later adulthood (Heckhausen & Heckhausen, 2008). Research also shows that there are time windows with optimal opportunities for the pursuit and realization of particular goals, but also developmental deadlines by which certain goals need to be reached or else have to be abandoned (see review in Heckhausen & Heckhausen, 2008). For instance getting a high-school diploma is a goal for which optimal opportunities exist in middle to late adolescence, whereas the deferral of such a goal to a later life stage may be associated with costs. Similarly, becoming a mother is a goal with optimal opportunities for women in early adulthood, but more difficult to achieve in later adulthood, as menopause looms.

As the foregoing suggests, there is a potentially endless number of goals that people can pursue (Little & Gee, 2007), although the actual type and content of the goals that people pursue are likely to reflect the age-specific (and sometimes gender-specific) demands and expectations of the society they live in as well as their culture and historic contexts. Thus, although across time and cultures, people may be similar in some of the goals they pursue, they may also place different kinds of emphasis on different goal domains (e.g., Grouzet et al., 2005; Hofer, Busch, Chasiotis, Kärtner, & Campos, 2008). For instance, the goals of a 5th century Chinese peasant were probably very different from those of a 21st century Brazilian IT specialist, owing to the radically different demands and opportunities individuals in such different sociocultural and historic contexts face.

Research by D'Argembeau and colleagues (e.g., D'Argembeau et al., 2010; Stawarczyk & D'Argembeau, 2015) and Johnson and colleagues (e.g., Johnson, Nolen-Hoeksema, Mitchell, & Levin, 2009; Johnson, Raye, Mitchell, Touryan, Greene, & Nolen-Hoeksema, 2006; Mitchell, Raye, Ebner, Tubridy, Frankel, & Johnson, 2009) shows that thinking about the pursuit and attainment of personal goals specifically activates the posterior cingulate cortex and the medial

prefrontal cortex, two structures involved in self-referential processing and self-knowledge. These brain structures are part of the default network, a set of midline brain structures that are active when the person is not absorbed in a current task (Raichle, 2015) and that has been implicated in mental exploration and simulation activities associated with the self (Buckner, Andrews-Hanna, & Schacter, 2008; see also Klinger, 2013). At the same time, this research suggests that thinking about the pursuit and attainment of one's personal goals does not specifically and consistently activate motivational-brain structures such as the amygdala, the striatum, or the OFC (see meta-analysis by Stawarczyk & D'Argembeau, 2015), underscoring the need to distinguish goal-based from motivational forms of behavioral regulation.

To conclude, goals provide a powerful means of regulating behavior, although in this case regulation is not hedonically driven, but aimed at attaining a sense of meaning and purpose in life. Goals are predicated on the phylogenetically new capacity for language and the resulting ability to talk about and negotiate the adoption of individually adapted short- and long-term tasks that reflect the typical demands of one's age, social context, and culture. Goals can vary widely in terms of content and temporal scope, but they are typically organized in more or less integrated hierarchies, with more long-term, self-defining goals at the top and more short-term, concrete projects and actions toward the bottom. Goals guide actual behavior, particularly if individuals feel committed to them and perceive them as attainable. They can be assessed via self-report, and thinking about them is associated with brain structures implicated in self-referential processing.

Relationships and interactions between motives and goals

For a long time, many psychologists assumed that specific goals represent instantiations of people's more generalized motive dispositions. For instance, both Lewin (1926) and Murray

(1938) assumed that the goals people pursue in their lives grow out of their basic motivational needs. Similar ideas can be found in the work of later authors, such as Nuttin (1984), Emmons (1989), and Wurf and Markus (1991). Even to this day, some theorists maintain the position that a direct link between motives and goals can be found if one focuses on the goals that people pursue for intrinsic reasons (Sheldon, 2014), although strongly diverging points of view have also been articulated in the literature for a while (e.g., McClelland et al., 1989; Weinberger & McClelland, 1990).

The first empirical attempt to establish a link between motives and goals seemed to corroborate the goals-as-motive-instantiations view. Emmons and McAdams (1991) measured 72 students' motives with a PSE and had them list their goal strivings. They found that motives had statistically significant overlap with the content of the listed goals, with Pearson correlations ranging from .37 to .41. However, subsequent studies consistently failed to replicate this association. For instance, King (1995), using the same methods as the earlier study in a larger sample of 101 students, found only non-significant motive-goal correlations, ranging from -.07 to .18 across the motivational domains achievement, affiliation, and power. Similarly, an even larger study by Rawolle, Schultheiss, and Schultheiss (2013) with 309 students, who described their key goals in the life domains of achievement, affiliation, and power and rated them on 5-point goal commitment scales based on the items "I fully identify myself with that goal", "I can hardly wait to start working on this goal", "No matter what happens, I will not give up this goal" and "Even if it means a lot of effort, I will try everything necessary to accomplish this goal", found non-significant motive-goal correlations ranging from -.12 to .10 across life domains. Finally, a meta-analysis on the convergence between PSE-based motive measures and self-report measures of motivation (but not including the Rawolle et al., 2013, study) reported an ρ of

only .094 for the association between goal and motive measures across 9 studies and 910 individuals (Köllner & Schultheiss, 2014). In summary, these findings suggest that contrary to previous theorizing, goals and motives represent two distinct levels of behavioral regulation. They also suggest that this state of affairs persists even if one correlates the degree to which individuals identify with and “own” their goals with their motives, as Rawolle et al (2013) did.

These findings thus complement research that shows that motives assessed via PSE have no overlap with individuals’ self-ascribed motivational needs (Köllner & Schultheiss, 2014). And they corroborate the point of view articulated by McClelland and colleagues that motives and goals represent independent domains of behavioral regulation (McClelland, 1980; McClelland et al., 1989; Weinberger & McClelland, 1990). But if behavior can be regulated by two independent systems, one based on affect-driven motivation and one based on meaning-making and maintaining consistency, and both operate independently, this entails that both will be in a state of harmony or *congruence* just as likely as they can be and in a state of conflict or *incongruence*. When and how do such variations in (in)congruence manifest themselves?

Brunstein (2010) has summarized research on this topic in the goal-achievement/motive-satisfaction (GAMeS) model. According to this model, depicted in Figure 2, success in the pursuit of personal goals is jointly determined by goal commitment and goal attainability. As previously outlined, progress towards goal attainment will be particularly swift the more committed a person is and the more beneficial her or his conditions for goal pursuit are. However, where most goal theories posit that emotional well-being is a direct outcome of variations in goal progress (e.g., Klinger & Cox, 2011), the GAMeS model adds motives as a crucial moderator: high goal progress leads to feelings of satisfaction, and low goal progress to

feelings of frustration and dejection only if the goal is relevant for a strong motive. Without such a grounding in strong motives, variations in goal progress do not have an impact on well-being.

=====

FIGURE 2 ABOUT HERE

=====

This is a strong claim, given that virtually all goal theories assume that successful goal pursuit will directly lead to emotional well-being. It is also relevant for clinical contexts, because it may not be enough to help patients set, pursue, and attain goals if some goals will not have the potential for reaping the satisfaction associated with successful goal implementation in the first place (see Cooper, 2018; Pueschel, Schulte, & Michalak, 2011). What is the evidence that Brunstein (2010) is right?

By now, supporting evidence for Brunstein’s model comes from seven studies, conducted in Germany and the US, with a total N of more than 600 participants (see Table 1 for an overview). In all studies, participants completed PSE motive measures, listed their current personal goals, and in most studies also rated these goals in terms of how committed they were to them, how attainable they deemed them, and how much progress they were currently making towards their achievement. In some longitudinal studies, goal progress measurements were repeated over time. In all studies, participants also completed measures of emotional well-being – typically either scales assessing hedonic tone with items such as *happy*, *satisfied*, or – coded in reverse – *frustrated* and *sad* (e.g., Matthews, Jones, & Chamberlain, 1990) or they filled out measures of depressive symptoms such as the Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961).

=====

TABLE 1 ABOUT HERE

=====

The results of these studies were very consistent and can be summarized as follows: High rates of progress on goals that were *congruent* with individuals' motives was associated with enhanced emotional well-being (hedonic tone measurements) and low depressive symptoms (BDI). Conversely, low rates of progress on motive-congruent goals were associated with reduced emotional well-being and increased depressive symptoms. For goals that were not supported by motives – that is, *incongruent* goals – emotional well-being and depressive symptoms were not associated with variations in goal progress. These results emerged both for cross-sectional studies in which goal progress and emotional well-being were assessed with a focus on the current situation and in studies with a longitudinal design in which changes in goal progress and emotional well-being above and beyond initial assessments were examined (see Table 1). As illustrated by the findings from the three studies by Schultheiss et al (2008) and Schultheiss (2013b), whose analytical design allows a direct comparison of correlations coefficients, the difference between congruent and incongruent goals was dramatic. For goals that were supported by motives, variations in goal progress were consistently associated around $r = .50$ with emotional well-being measures. For goals not supported by goals, the correlation dropped to zero (for an illustration, see Fig. 3).

FIGUR 3 ABOUT HERE

=====

These findings underscore the argument I have made previously in this chapter: behavioral regulation through goal pursuit does not necessarily entail affect; it can also happen in

what Schultheiss et al (2008) termed a “cold”, affectively neutral manner. To the extent that variations in successful goal striving does influence emotional well-being, this is due to its interaction with, and through the involvement of, motive dispositions, which turn success and failure experiences en route to the goal into affectively charged events – a “hot” mode of goal pursuit (Schultheiss et al., 2008). It is important to note that if motives are not considered in a study’s design, goal progress is frequently a significant predictor of emotional well-being by itself, which could be interpreted as a direct effect of goal striving on happiness. But this is a case of a main effect masking a crucial interaction effect (motive x goal progress), whose shape clearly suggests that motive-incongruent goal progress is not directly associated with emotional benefits. In this context, it is also important to emphasize that the reverse is not true: motives do *not* depend on goals to generate affect. Motives also generate affective responses when they are not engaged in the active pursuit of personally meaningful goals. For instance, motives determine research participants’ affective responses to viewing facial expressions (Rösch, Stanton, & Schultheiss, 2013) and pictures of social situations (Dufner et al., 2015) as well as informally interacting with an experimenter before an upcoming task (Kordik, Eska, & Schultheiss, 2012) or after completing it (Hagemeyer, Dufner, & Denissen, 2016).

Another important aspect of the GAMEs model is that pursuing incongruent goals, that is, goals that are not supported by motives, can have an indirect negative effect on emotional well-being by draining resources (e.g., time, opportunities) from the pursuit of motive-congruent goals. This reduces progress on congruent goals, which in turn is associated with feelings of frustration and dejection. Evidence for this indirect path from incongruent goals to emotional well-being comes from the second, longitudinal study reported by Brunstein et al (1998). These authors could show that commitment to and attainability of a motive-incongruent goal

simultaneously resulted in high progress towards this goal and low progress towards a motive-congruent goal, which indicates that the pursuit of the “wrong” type of goals compromises the achievement of the “right” type of goal (see striped arrow in Figure 2).

This finding may also explain why other researchers sometimes report negative associations between motive-goal incongruence and measures of well-being (e.g., Hofer; Busch, Bond, Li, & Law, 2010; Schüler, Job, Fröhlich, & Brandstätter, 2009; for an overview, see Hofer & Busch, 2017), which led to the view that motive-goal incongruence may represent a “hidden stressor” (e.g., Schüler et al., 2009). This contrasts with the perspective of Brunstein’s (2010) GAMEs model and also the general properties of motives and goals I have previously reviewed. According to both, motive-incongruent goals should *not* be associated with affective outcomes per se. Yet their indirect detrimental effect on the advancement of motive-congruent goals (which is typically not measured in studies focusing on associations between incongruence and well-being) may explain why researchers sometimes observe such associations. Based on this view, motive-incongruent goals are not a “hidden stressor”, but a resource allocation trap.

One emerging question resulting from research on the independence and interactions between motives and goals is whether (in-)congruence effects stop at emotional well-being or also influence other aspects of behavioral regulation, such as goal implementation itself. The research reported in Schultheiss et al (2008) provides a first glimpse at possible answers. These researchers studied to what extent motives play a role in goal progress. Across two samples, they examined the separate and interactive effects of motives and goal commitments on goal progress. Their findings are illustrated in Figure 3 and can be summarized as follows: First, as in previous studies (e.g., Brunstein et al., 1998) goal commitment was a positive predictor of goal progress at the main effect level, whereas motives were not. Second, motives and goal commitment strength

interacted such that that only individuals low in both variables reported low goal progress. All other participants, regardless of whether they were high in only one predictor or both predictors, reported at least moderate levels of goal progress. What makes these findings, which were replicated across both studies reported in Schultheiss et al (2008), so remarkable is the observation that in the absence of a strong sense of identification with a goal, strong motives alone were sufficient to support progress in goal striving. Perhaps equally remarkable, the absence of motives did not impair goal striving, provided that individuals were sufficiently committed to their goals. Based on earlier theorizing presented by Cantor and Blanton (1996), Schultheiss et al (2008) speculated that motive-supported goal striving may enable an intuitive mode of goal pursuit, whereas a strong goal commitment ensures a strategic, effortful mode of goal pursuit when motive support is absent.

Conceptually, Schultheiss and Köllner (2014) went one step further and argued that the pursuit of motive-congruent goals speeds up and optimizes declarative (e.g., episodic memory) and non-declarative (i.e., Pavlovian and instrumental conditioning) learning processes through frequent contact with motive-specific incentives and disincentives. Because such contact has a strong affective impact, associated learning processes will be enhanced and help the individual develop complex competencies and thus refine her or his ability to obtain motive-related rewards and avoid aversive outcomes. Motive-congruent goals thus open up opportunity structures by allowing individuals to spend more time engaged in activities furnished with motive-specific incentives and to learn from their experiences provided by these activities. The outcome will be increased intuitive, sophisticated know-how and competencies that in turn facilitate future setting, pursuit, and attainment of motive-congruent goals. In contrast, motive-incongruent goals fail to provide such opportunity structures, thereby preventing the swift, affect-driven learning

processes necessary for intuitive and efficient goal pursuit. Thus, while Brunstein's (2010) GAMEs model clearly states that the pursuit of motive-congruent goals can cut both ways – entailing blissful happiness if goal progress is high and deep frustration if it is low –, Schultheiss and Köllner's (2014) argument suggests that in the long run the scales are tipped towards happiness, because motive-congruent goals lead to faster learning of whatever it takes to speed up progress on motive-congruent goals.

Achieving motive-goal congruence

The statistical and functional independence of motives and goals as two key domains of personality as well as their between-domain interactions described in the previous section raise two questions: First, is there something that people can do to increase their chances of pursuing motive-congruent goals? And second, are there some people who are chronically – and for a reason – better than others at keeping their goals congruent with their motivational needs?

Experimental studies

Schultheiss (2001, 2008) argued that a key reason why motives do not substantially correlate with the goals people set and pursue is that whereas motives are rooted in nonverbal, experiential processing of the immediate perceptual world and its incentives, goals represent verbally encapsulated references to actions and objectives that lie in the future. He therefore proposed that in order to check whether a potential goal is compatible with one's motives, goals need to be translated into a representational format that can be “read” and responded to by motives. Drawing on research on mental imagery (reviewed in Schultheiss, 2001), which suggested that the picture-like mental simulation of objects and events engages the same brain areas normally involved in perception, he argued that vividly imagining the pursuit and attainment of a goal – a process termed *goal imagery* (Schultheiss & Brunstein, 1999) – should

fulfill this purpose and allow motives to provide a valid affective evaluation of the goal, enabling the individual to intuitively recognize a goal as motive-congruent or motive-incongruent. This argument is further buttressed by recent research demonstrating that vivid mental imagery of rewarding and aversive motivational incentives robustly engages the nucleus accumbens (part of the striatum) the amygdala (Costa, Lang, Sabatinelli, Versace, & Bradley, 2010), and the OFC (Bray, Shimojo, & O’Doherty, 2010), three key structures of the motivational brain.

Schultheiss and colleagues conducted a series of studies in which individuals either engaged in imagery related to an experimenter-assigned task goal (Schultheiss & Brunstein, 1999, 2002) or an identity-relevant goal (Rawolle, Schultheiss, Strasser, & Kehr, 2017, Study 2) or were assigned to a no-goal-imagery control condition (e.g., relaxation; unrelated imagery). In all studies, the goal imagery scripts used by the experimenters asked participants to pay attention to their affective responses to the imagined scenarios, but did not prescribe the intensity or valence of such responses. Afterwards, participants’ commitment to the goal or performance on a goal-related task were assessed. Across studies, results supported the notion that goal choice and performance reflected participants’ motive dispositions only after participants had had an opportunity to mentally simulate the goal and get a sense of their affective responses to the goal. Without such imagery, goal commitment and task performance were independent of participants’ motives. Similar results were also reported by Job and Brandstätter (2009) and Schultheiss, Patalakh, Rawolle, Liening, and McInnes (2011; Study 4) who had participants choose goals based on their responses to affect-focused fantasies (“What would it feel like to pursue this goal?”), self-focused fantasies (“Is this goal suitable for me as a person?”) or a no-fantasy control condition. Across studies, participants in the affect-focus condition were more likely to choose and commit to motive-congruent goals than participants in the self-focus or no-focus conditions.

Taken together, these findings suggest that engaging in an imaginative exploration of the pursuit and attainment of a potential goal and focusing on one's affective responses to such fantasies before deciding about whether to adopt it can help individuals commit to more motive-congruent goals in their lives.

More recently, two studies have tried to increase motivational congruence through other means than goal imagery. Strick and Papies (2017) hypothesized that by increasing individuals' attention to internal signals through a mindfulness intervention, subsequent goal choices would be more motive-congruent than after a control procedure. Using a longitudinal design, Strick and Papies assessed participants' motives during an initial testing session. During a second session ($N = 72$), they had their participants perform a body scan procedure (mindfulness condition) or read magazines for a similar amount of time (control condition) before completing a goal-choice task adapted from Job and Brandstätter (2009). During a third session ($N = 60$ due to attrition), the treatment was reversed such that participants who had previously received the mindfulness intervention were now tested in the control condition and vice versa before choosing from another set of goals. Thus, each participant completed the study in both conditions, although with a 2-month gap between the two treatment sessions. Strick and Papies (2017) found that across both experimental-manipulation sessions, participants in the mindfulness condition always chose affiliation goals in accordance with their affiliation motive, whereas they failed to do so in the control condition. Interestingly, Strick and Papies also tested whether participants would choose more motive-congruent goals in the power domain (i.e., show a preference for power goals if they had a strong power motive), but failed to observe this effect. The authors concluded from these observations that mindfulness increases motive-goal congruence in the affiliation domain, but not in the power domain.

In another study, Roch, Rösch, and Schultheiss (2017) used a rather different intervention and found a complementary pattern of results. These researchers worked with the personal goals that their participants ($N = 74$) already pursued in their daily lives and that they reported on in an initial testing session. During this session, participants' motives were also assessed with a PSE. Participants were then randomly assigned to a no-feedback control group (CG), a feedback group (FB) and a feedback + congruence-enhancement training (FB + CET) group. During a second session, FB participants received feedback on the degree to which their goal commitments in the domains of power, achievement, and affiliation matched their motivational needs and were asked to reflect on this information. FB + CET participants also received feedback and in addition underwent training on how to reduce motive-goal incongruence by, for instance, enriching a goal with additional incentives to make it more motive-congruent or by increasing one's goal commitment in domains with strong motives. After 7 weeks, participants were tested again and their motives and goal commitments were assessed a second time. Roch et al found that although motives and personal goal commitments did not change in terms of absolute levels from the initial assessment session to the follow-up session, the FB and particularly the FB + CET groups elicited an increase in motive-goal congruence measures in the domains of power and achievement, but not in the domain of affiliation. They explained this pattern of results, and its difference from the Strick and Papies (2017) findings, by arguing that their interventions in the FB and particularly the FB + CET groups were rather analytical, hands-on, and instrumental and may therefore have suited the agentic, action-oriented power and achievement motives more than the being-oriented affiliation motive (see Job, Bernecker, & Dweck, 2012; McAdams, 1982). Conversely, the latter motive may be more amenable to the mindfulness approach employed by Strick and Papies (2017).

Taken together, the studies reviewed here suggest that motive-goal congruence can be increased, with the most consistent evidence so far coming from studies employing goal-imagery approaches combined with a focus on affect, and other studies pointing to beneficial effects of mindfulness for congruence in the affiliation domain and feedback and interventions targeting motive-goal (mis)matches perhaps increasing congruence between the personal goals people are already pursuing and their motives in the agentic domain. It must be acknowledged, though, that most of the studies reviewed suffer from low statistical power and substantial heterogeneity in the way motive-goal congruence was operationalized (e.g., one motive or multiple motives; assigned goals versus goal choices; laboratory task versus “real-life” personal goals; derivation of (in)congruence indices versus moderated-regression modeling of motive-goal associations). These studies should therefore be viewed as a starting point for more -- and more rigorous -- research on how motive-goal congruence can be enhanced such that people can set and attain motivationally satisfying goals in their daily lives.

Other moderators of motive-goal congruence

Researchers have also started to examine methodological and dispositional moderators of motive-goal congruence (for an excellent overview of the issues involved, see Thrash, Cassidy, Maruskin, & Elliot, 2010). Two key methodological issues regard the meaning of cross-sectional assessment of motive-goal congruence and the criteria for matching of motives and goals.

With regard to the first issue, it is currently unknown whether individuals who happen to pursue goals that match their motives when they are tested show congruence because of an actual causal process that lets them choose or adapt their goals such that they fit their motives or whether such an observation represents only the random combination of values on two

independent variables that just happen to end up in alignment. A half step towards addressing this issue would be to look at whether individual differences in motive-goal congruence are stable over time, which would suggest that congruence does not change every time people complete old goals and set new ones. A full step towards resolving this issue requires, of course, the measurement -- or better yet: experimental manipulation -- of factors that might conceivably have a substantive influence on motive-goal congruence over time. Although the research reviewed in the previous section starts to address this issue, it is presently unclear to what extent the mechanisms it examines play an actual role in everyday variations of motive-goal congruence.

The second methodological issue concerns the matching of goals to motives that is the foundation for estimating congruence. Typically, this is achieved by asking participants to list personal goals for each motive domain (e.g., achievement, power, affiliation; see Brunstein et al., 1998), by having participants generate free lists of goals and then coding them for thematic content (e.g., King, 1995), or by having participants rate prototypical goal strivings within each motive domain for importance and other attributes (e.g., Hofer, Busch, Bond, Kärtner, Kiessling, & Law, 2010). All three approaches assume that goals can be pigeonholed into specific categories, which then serve as the basis for gauging the degree of congruence by, for instance, comparing an individual's power motive score with how important she or he deems a power goal. But as the previous discussion of goals, their embeddedness in hierarchies and the principles of multifinality (one subgoal can serve more than one superordinate goal) and equifinality (different subgoals can serve the same superordinate goal) suggest (see Fig. 1), it may not be a simple matter to categorize goals into content domains. For instance, a superordinate goal that would be categorized as achievement-related (e.g., "finish my bachelor degree in

economics”) may serve the larger power goal of becoming influential in a society that rewards achievement with social recognition (see, for instance, Ramsay, Pang, Ho, & Chan, 2017) and may entail, at the same time, subgoals related to other motives, such as spending time with friends in a learning and discussion group related to one’s course of studies (i.e., a mixed affiliation/achievement/power goal). For this reason, Schultheiss et al (2008) decided to dispense with the attempt to parse motive-goal congruence into specific domains, working instead with global indices of goal commitment and motives, with each averaged across the domains achievement, power, and affiliation, to examine associations between motive-goal congruence and emotional well-being (see Table 1). So far, however, this methodological issue has not received the attention and discussion in research on motive-goal congruence it deserves.

Despite these unresolved methodological questions, researchers have identified substantive individual-difference factors that are associated with motive-goal congruence. Following up on earlier work by Thrash and Elliot (2002), who had shown that a generalized sense of self-determination predicts greater congruence between PSE and self-report measures of achievement motivation, Hofer et al (2010) examined the relation of the achievement motive and achievement goals across three different cultures (Germany, Cameroon, Hong Kong). They found that variations in a questionnaire measure of self-determination, consisting of items such as “I feel like I am always completely myself”, moderated the degree to which individuals’ rated importance of achievement-related life goals depended on their achievement motive. For individuals high in self-determination, there was a significant positive correlation between the motive and rated goal importance; for individuals low in self-determination, the association between the two variables did not differ from zero. Moreover, this pattern of findings was invariant across the three cultures studied, suggesting a considerable degree of universality. It

should be noted, though, that the role of self-determination as a moderator of congruence appears to be limited to the domain of achievement. It is presently unclear why it does not extend to the domains of power and affiliation, too.

Another line of research has looked at individual differences in the ability to regulate negative affect. Brunstein (2001) observed that individuals high in action orientation, who described themselves as capable of putting past mishaps and failures behind them quickly in the service of the task at hand (see Kuhl, 1981), were particularly likely to commit themselves to personal goals that were not only congruent with their motives, but also reasonably attainable. Individuals low in action orientation, on the other hand, were committed to goals that were unrelated to their motives and characterized by poor attainability. These findings are consistent with a model of personality that views unchecked negative affect as an impediment to accessing implicit aspects of the self (Kuhl, 2001) and suggest that individuals who lack the capability for quickly downregulating negative affect once it has been triggered may be at a particular risk for choosing goals that are incompatible with other aspects of their personality (see also Baumann & Kuhl, 2003; Kuhl & Kazen, 1994). Subsequently, Baumann, Kaschel, and Kuhl (2005) replicated the effect observed by Brunstein (2001). However, their research was based on a motive measure whose sensitivity to aroused motivational states has not been tested and does not correlate with the traditional picture-story measure of motives (Schüler, Brandstätter, Wegner, & Baumann, 2015). It is therefore unclear to what extent their results constitute a direct replication. More research may be needed to get a better sense to what extent self-regulatory abilities are involved in the choice of motive-congruent goals. The experimental goal choice paradigm developed by Kuhl and Kazen (1994) may provide an excellent starting point for this.

A third line of research has examined the role of referential competence in motive-goal congruence. Building on earlier work in cognitive psychology (Paivio, 1986), Schultheiss and Strasser (2012) defined referential competence as a stable disposition for quickly translating verbal codes into nonverbal codes and vice versa. They argued that individuals high in referential competence, relative to those low, show higher motive-goal congruence because they are more efficient at translating verbally represented goals into nonverbal representations that can be “read” by motives and also in translating the affective-emotional responses generated by motives into verbal representations. In other words, referential competence facilitates between-systems communication between goals and motives. In support of this view, Schultheiss and Strasser (2012) review evidence from studies in which referential competence was assessed via the latency difference between naming things and reading words, with larger differences indicative of less efficient nonverbal-verbal translation and thus of lower referential competence. This research shows that referential competence predicts more concrete, image-like language use in picture stories, faster imaging to words, and better self-access as assessed through response latencies on mood judgments (see Baumann, Kazen, & Quirin, 2018). Most importantly, in two studies high referential competence predicted better congruence between motives and personal goal commitments across the domains of power, achievement, and affiliation (Schultheiss et al., 2011, Studies 2 & 3). Thus, corroborating other research that suggests that the strategic translation between verbal and nonverbal forms of representation facilitates motive-congruent goal choices and behavior (see previous discussion of goal imagery effects), this line of inquiry shows that a disposition for automatic, quick translation between representational codes is also associated with better motive-goal congruence.

To conclude, both questions raised at the beginning of this section can be answered in the affirmative. Yes, people can engage in activities that help them to choose and pursue goals that are well-aligned with their motives. These activities include attending to affective responses while imagining the pursuit and attainment of a goal, being mindful in the context of goal choice situations, and actively modifying goal commitments to make them more motive-compatible. And yes, some people are better than others in choosing motive-congruent goals. They view themselves as self-determined (in the case of achievement motive-goal congruence), they may be better at down-regulating negative affect after upsetting events, and they show high referential competence.

Coda: The contributions of motives and goals to well-being

I have started this chapter with a distinction between two modes of behavioral regulation, one that is hedonically oriented and one that is not, and both contributing to dynamic processes in personality. I have then reviewed research on motives and argued that they are built via learning processes around interindividually varying, but intraindividually stable affective evaluations of certain types of incentives and disincentives. I have also reviewed research on goals and made a case that they are primarily about furnishing life with meaning and a lasting sense of purpose, with people differing inter- and intraindividually in the goals they pursue at different life stages, but being similar in terms of the parameters, such as commitment and attainability, that contribute to goal progress. In subsequent sections, I have reviewed theories and evidence suggesting that motives and goals represent independent units of personality. Nevertheless, they can interact with each other such that variations in progress on motive-congruent goals is associated with and predicts emotional well-being, whereas progress on motive-incongruent goals does not (or only indirectly, by hampering motive-congruent goal

progress). This provided an empirical basis for the initial distinction between hedonic and non-hedonic modes of behavioral regulation. Finally, I have also reviewed research on how motive-goal congruence can be enhanced and which individuals, due to what dispositions, are more likely to achieve it than others.

So for the most part, this chapter focused on emotional well-being as an endpoint of the interplay between motives and goals. But what about meaning? I will answer this question, and close this chapter, with two responses to this question. The first response is that research suggests that measures of emotional well-being and measures of meaning, although correlated to some extent, represent distinct dimensions (e.g., McGregor & Little, 1998). Research on motives and goals has mostly focused on the emotional well-being dimension, which has its roots in motives and is moderated by motive-congruent goal progress. But there are some studies that suggest that just like goals can moderate the degree to which motives find expression and satisfaction in behavior, so do motives moderate the degree to which goals contribute to a sense of meaning and purpose in life. As Hofer and colleagues have shown in their cross-cultural research, motive-goal congruence also contributes to a sense of life as being purposeful and well-lived (e.g., Hofer et al, 2010; Hofer & Chasiotis, 2003).

This leads me to my second response: although this issue needs to be explored in future research, I suspect that the hedonic well-being resulting from motive satisfaction and the sense of purpose resulting from the pursuit of meaningful goals may reinforce each other in the case of high motive-goal congruence (for much older, related arguments, see Aristotle, 350 B.C.). It is even conceivable that the suffering caused by obstacles and setbacks in the pursuit of such goals may be experienced as meaningful and can therefore be endured more easily. On the other hand, motive satisfaction that happens outside of the realm of meaningful goals may represent an

unhinged, fleeting pleasure. And the pursuit of goals that are not supported by motives may end up being an exercise in hollow meaning-making, fueled by lofty idealism but lacking proper affective grounding.

References

- Agmo, A. (2007). *Functional and dysfunctional sexual behavior. A synthesis of neuroscience and comparative psychology*. Amsterdam: Academic Press.
- Aristotle. (350 B.C.). Nicomachean ethics. In D. C. Stevenson (Ed.), *The Internet Classics Archive: Web Atomics*.
- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review*, *64*, 359-372.
- Atkinson, J. W., & McClelland, D. C. (1948). The projective expression of needs. II. The effects of different intensities of the hunger drive on thematic apperception. *Journal of Experimental Psychology*, *28*, 643-658.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*, 338-375.
- Baltes, B. B., & Heydens-Gahir, H. A. (2003). Reduction of Work-Family Conflict Through the Use of Selection, Optimization, and Compensation Behaviors. *Journal of Applied Psychology*, *88*, 1005-1018.
- Baumann, N., Kaschel, R., & Kuhl, J. (2005). Striving for unwanted goals: Stress-dependent discrepancies between explicit and implicit achievement motives reduce subjective well-being and increase psychosomatic symptoms. *Journal of Personality and Social Psychology*, *89*, 781-799.
- Baumann, N., & Kuhl, J. (2003). Self-infiltration: Confusing assigned tasks as self-selected in memory. *Personality and Social Psychology Bulletin*, *29*, 487-497.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, *4*, 561-571.

- Berridge, K. C. (2004). Motivation concepts in behavioral neuroscience. *Physiology and Behavior, 81*, 179-209.
- Borsboom, D., Mellenbergh, G. J., & van Heerden, J. (2004). The concept of validity. *Psychological Review, 111*, 1061-1071.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Brandstätter, M., & Lalonde, C. E. (2007). Personal persistence and personal projects: Creating personal and cultural continuity *Personal project pursuit: Goals, action, and human flourishing*. (pp. 271-300). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Brandstädter, J. (2009). Goal pursuit and goal adjustment: Self-regulation and intentional self-development in changing developmental contexts. *Advances in Life Course Research, 14*, 52-62.
- Bray, S., Shimojo, S., & O'Doherty, J. P. (2010). Human Medial Orbitofrontal Cortex Is Recruited During Experience of Imagined and Real Rewards. *Journal of Neurophysiology, 103*, 2506-2512.
- Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology, 65*, 1061-1070.
- Brunstein, J. C. (2000). Motivation and performance following failure: The effortful pursuit of self-defining goals. *Applied Psychology: An International Review, 49*, 340-356.
- Brunstein, J. C. (2001). Persönliche Ziele und Handlungs- versus Lageorientierung: Wer bindet sich an realistische und bedürfniskongruente Ziele? [Personal Goals and Action Versus State Orientation: Who Builds a Commitment to Realistic and Need-Congruent Goals?]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 22*, 1-12.

- Brunstein, J. C. (2010). Implicit motives and explicit goals: The role of motivational congruence in emotional well-being. In O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 347-374). New York, NY: Oxford University Press.
- Brunstein, J. C., Lautenschlager, U., Nawroth, B., Pöhlmann, K., & Schultheiss, O. (1995). Persönliche Anliegen, soziale Motive und emotionales Wohlbefinden [Personal goals, social motives, and emotional well-being]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 16*, 1-10.
- Brunstein, J. C., Schultheiss, O. C., & Grässmann, R. (1998). Personal goals and emotional well-being: The moderating role of motive dispositions. *Journal of Personality and Social Psychology, 75*, 494-508.
- Buckner, R. L., Andrews-Hanna, J. R., & Schacter, D. L. (2008). The Brain's Default Network. *Annals of the New York Academy of Sciences, 1124*, 1-38.
- Cabanac, M. (1971). Physiological role of pleasure. *Science, 173*, 1103-1107.
- Cabanac, M. (1992). Pleasure: the common currency. *Journal of Theoretical Biology, 155*, 173-200.
- Cantor, N., & Blanton, H. (1996). Effortful pursuit of personal goals in daily life. In J. A. Bargh & P. M. Gollwitzer (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 338-359). New York: Guilford.
- Carver, C. S. (1979). A cybernetic model of self-attention processes. *Journal of Personality and Social Psychology, 37*, 1251-1281.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.

- Carver, C. S., & Scheier, M. F. (2011). *Perspectives on personality* (7 ed.). Boston: Allyn and Bacon.
- Clark, R. A. (1952). The projective measurement of experimentally induced levels of sexual motivation. *Journal of Experimental Psychology*, *44*, 391-399.
- Cooper, M. (2018). The psychology of goals: A practice-friendly review. In M. Cooper & D. Law (Eds.), *Working with Goals in Psychotherapy and Counselling* (pp. 35-71). Oxford, UK: Oxford University Press.
- Costa, P. T., & McCrae, R. R. (1988). From catalog to classification: Murray's needs and the five-factor model. *Journal of Personality and Social Psychology*, *55*, 258-265.
- Costa, V. D., Lang, P. J., Sabatinelli, D., Versace, F., & Bradley, M. M. (2010). Emotional imagery: assessing pleasure and arousal in the brain's reward circuitry. *Hum Brain Mapp*, *31*, 1446-1457.
- D'Argembeau, A., Stawarczyk, D., Majerus, S., Collette, F., Van der Linden, M., Feyers, D., et al. (2010). The neural basis of personal goal processing when envisioning future events. *Journal of Cognitive Neuroscience*, *22*, 1701-1713.
- Deacon, T. W. (1997). *The symbolic species: The co-evolution of language and the brain*. New York, NY: Norton.
- Dufner, M., Arslan, R. C., Hagemeyer, B., Schonbrodt, F. D., & Denissen, J. J. (2015). Affective contingencies in the affiliative domain: Physiological assessment, associations with the affiliation motive, and prediction of behavior. *Journal of Personality and Social Psychology*, *109*, 662-676.

- Edelstein, R. S., Stanton, S. J., Henderson, M. M., & Sanders, M. R. (2010). Endogenous estradiol levels are associated with attachment avoidance and implicit intimacy motivation. *Hormones and Behavior, 57*, 230-236.
- Eisenberg, N., Smith, C. L., Sadovsky, A., & Spinrad, T. L. (2004). Effortful control: Relations with emotion regulation, adjustment, and socialization in childhood. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*. (pp. 259-282). New York, NY, US: Guilford Press.
- Elliot, A. J., & Fryer, J. W. (2008). The goal construct in psychology. In J. Y. Shah & W. L. Gardner (Eds.), *Handbook of motivation science* (Vol. 18, pp. 235-250). New York, NY: Guilford.
- Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology, 82*, 804-818.
- Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51*, 1058-1068.
- Emmons, R. A. (1989). The personal striving approach to personality. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 87-126). Hillsdale NJ: Lawrence Erlbaum.
- Emmons, R. A. (2003). Personal goals, life meaning, and virtue: Wellsprings of a positive life. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 105-128). Washington, DC: American Psychological Association.
- Emmons, R. A., & McAdams, D. P. (1991). Personal strivings and motive dispositions: Exploring the links. *Personality and Social Psychology Bulletin, 17*, 648-654.

- Engeser, S., & Langens, T. (2010). Mapping explicit social motives of achievement, power, and affiliation onto the five-factor model of personality. *Scandinavian Journal of Psychology*, *51*, 309-318.
- Epstein, A. N. (1982). Instinct and motivation as explanations for complex behavior. In D. W. Pfaff (Ed.), *Physiological mechanisms of motivation* (pp. 25-55). New York: Springer.
- Frankl, V. E. (1985). *Man's search for meaning*: Simon and Schuster.
- Freund, A. M. (2007). Differentiating and integrating levels of goal representation: A life-span perspective. In B. R. Little, K. Salmela-Aro & S. D. Phillips (Eds.), *Personal project pursuit: Goals, action, and human flourishing* (pp. 247-270). New York, NY: Psychology Press.
- Gollwitzer, P. M., & Schaal, B. (1998). Metacognition in action: the importance of implementation intentions. *Personality and Social Psychology Review*, *2*, 124-136.
- Grant, H., & Gelety, L. (2009). Goal content theories: Why differences in what we are striving for matter. In G. B. Moskowitz & H. Grant (Eds.), *The psychology of goals* (pp. 77-97). New York, NY: Guilford Press.
- Grouzet, F. M. E., Kasser, T., Ahuvia, A., Dols, J. M. F., Kim, Y., Lau, S., et al. (2005). The Structure of Goal Contents Across 15 Cultures. *Journal of Personality and Social Psychology*, *89*, 800-816.
- Hagemeyer, B., Dufner, M., & Denissen, J. J. A. (2016). Double dissociation between implicit and explicit affiliative motives: A closer look at socializing behavior in dyadic interactions. *Journal of Research in Personality*, *65*, 89-93.

- Hall, J. L., Stanton, S. J., & Schultheiss, O. C. (2010). Biopsychological and neural processes of implicit motivation. In O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 279-307). New York, NY: Oxford University Press.
- Heckhausen, H., & Heckhausen, J. (2008). Motivation and development. In H. Heckhausen & J. Heckhausen (Eds.), *Motivation and action* (2 ed., pp. 384-444). New York: Cambridge University Press.
- Hofer, J., Busch, H., Bond, M. H., Kärtner, J., Kiessling, F., & Law, R. (2010). Is Self-Determined Functioning a Universal Prerequisite for Motive–Goal Congruence? Examining the Domain of Achievement in Three Cultures. *Journal of Personality*, 78, 747-780.
- Hofer, J., Busch, H., Bond, M. H., Li, M., & Law, R. (2010). Effects of motive-goal congruence on well-being in the power domain: Considering goals and values in a German and two Chinese samples. *Journal of Research in Personality*, 44, 610-620.
- Hofer, J., Busch, H., Chasiotis, A., Kärtner, J., & Campos, D. (2008). Concern for Generativity and Its Relation to Implicit Pro-Social Power Motivation, Generative Goals, and Satisfaction With Life: A Cross-Cultural Investigation. *Journal of Personality*, 76, 1-30.
- Hofer, J., & Chasiotis, A. (2003). Congruence of life goals and implicit motives as predictors of life satisfaction: Cross-cultural implications of a study of Zambian male adolescents. *Motivation and Emotion*, 27, 251-272.
- Hyland, M. E. (1988). Motivational control theory: An integrative framework. *Journal of Personality and Social Psychology*, 55, 642-651.

- Janson, K. T., Bleck, K., Fenkl, J., Riegl, L. T., Jägel, F., & Köllner, M. G. (2018). Inhibited Power Motivation is Associated with the Facial Width-to-Height Ratio in Females. [journal article]. *Adaptive Human Behavior and Physiology*, 4, 21-41.
- Jaynes, J. (1990). *The origin of consciousness in the breakdown of the bicameral mind* (2 ed.). Boston, MA: Houghton Mifflin.
- Job, V., Bernecker, K., & Dweck, C. S. (2012). Are implicit motives the need to feel certain affect? Motive-affect congruence predicts relationship satisfaction. *Personality and Social Psychology Bulletin*, 38, 1552-1565.
- Job, V., & Brandstätter, V. (2009). Get a taste of your goals: Promoting motive-goal congruence through affect-focus goal fantasy. *Journal of Personality*, 77, 1527-1560.
- Johnson, M. K., Nolen-Hoeksema, S., Mitchell, K. J., & Levin, Y. (2009). Medial cortex activity, self-reflection and depression. *Social Cognitive and Affective Neuroscience*, 4, 313-327.
- Johnson, M. K., Raye, C. L., Mitchell, K. J., Touryan, S. R., Greene, E. J., & Nolen-Hoeksema, S. (2006). Dissociating medial frontal and posterior cingulate activity during self-reflection. *Social Cognitive and Affective Neuroscience*, 1, 56-64.
- Johnston, V. S. (2003). The origin and function of pleasure. *Cognition and Emotion*, 17, 167-179.
- King, L. A. (1995). Wishes, motives, goals, and personal memories: Relations of measures of human motivation. *Journal of Personality*, 63, 985-1007.
- Klinger, E. (1977). *Meaning and void: Inner experience and the incentives in people's lives*. Minneapolis MI: University of Minnesota Press.

- Klinger, E. (2013). Goal Commitments and the content of thoughts and dreams: basic principles. [Review]. *Frontiers in Psychology*, 4.
- Klinger, E., & Cox, W. M. (2011). Motivation and the goal theory of current concerns. In W. M. Cox & E. Klinger (Eds.), *Handbook of motivational counseling: Goal-based approaches to assessment and intervention with addiction and other problems* (2 ed., pp. 3-47). Chichester, UK: Wiley.
- Köllner, M., & Schultheiss, O. C. (2014). Meta-analytic evidence of low convergence between implicit and explicit measures of the needs for achievement, affiliation, and power. *Frontiers in Psychology*, 5.
- Köllner, M. G., & Bleck, K. (in press). Exploratory evidence of sex-dimorphic associations of the Ulna-to-Fibula Ratio, a potential marker of pubertal sex steroid exposure, with the implicit need for power. *Adaptive Human Behavior and Physiology*.
- Kordik, A., Eska, K., & Schultheiss, O. C. (2012). Implicit need for affiliation is associated with increased corrugator activity in a non-positive, but not in a positive social interaction. *Journal of Research in Personality*, 46, 604-608.
- Kuhl, J. (1981). Motivational and functional helplessness: The moderating effect of state versus action orientation. *Journal of Personality and Social Psychology*, 40, 155-170.
- Kuhl, J. (2001). *Motivation und Persönlichkeit: Interaktionen psychischer Systeme [Motivation and personality: Interactions of mental systems]*. Göttingen, Germany: Hogrefe.
- Kuhl, J., & Kazen, M. (1994). Self-discrimination and memory: State orientation and false self-ascription of assigned activities. *Journal of Personality and Social Psychology*, 66, 1103-1115.

- Larsen, R. J., & Buss, D. M. (2013). *Personality Psychology: Domains of Knowledge About Human Nature* (5 ed.). New York: McGraw Hill.
- LeDoux, J. E. (1996). *The emotional brain*. New York: Simon & Schuster.
- LeDoux, J. E. (2002). *The synaptic self*. New York, NY: Viking.
- Lewin, K. (1926). Vorsatz, Wille und Bedürfnis. *Psychologische Forschung*, 7, 330-385.
- Little, B. R., & Gee, T. L. (2007). The methodology of personal projects analysis: Four modules and a funnel *Personal project pursuit: Goals, action, and human flourishing*. (pp. 51-94). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Englewood Cliffs NJ: Prentice Hall.
- Maddi, S. R., & Andrews, S. L. (1966). The need for variety in fantasy and self-description. *Journal of Personality*, 34, 610-625.
- Markus, H., & Ruvolo, A. (1989). Possible selves: Personalized representations of goals. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 211-242). Hillsdale NJ: Lawrence Erlbaum.
- Markus, K. A., & Borsboom, D. (2013). *Frontiers of test validity theory: Measurement, causation, and meaning*. New York, NY: Routledge.
- Matthews, G., Jones, D. M., & Chamberlain, A. G. (1990). Refining the measurement of mood: The UWIST Mood Adjective Checklist. *British Journal of Psychology*, 81, 17-42.
- McAdams, D. P. (1982). Experiences of intimacy and power: Relationships between social motives and autobiographical memory. *Journal of Personality and Social Psychology*, 42, 292-302.

- McClelland, D. C. (1958). Methods of measuring human motivation. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society: A method of assessment and study* (pp. 7-42). Princeton, NJ: Van Nostrand.
- McClelland, D. C. (1980). Motive dispositions. The merits of operant and respondent measures. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 1, pp. 10-41). Beverly Hills, CA: Sage.
- McClelland, D. C. (1984). *Motives, personality, and society. Selected papers*. New York: Praeger.
- McClelland, D. C. (1987). *Human motivation*. New York: Cambridge University Press.
- McClelland, D. C. (1989). Motivational factors in health and disease. *American Psychologist*, *44*, 675-683.
- McClelland, D. C., & Atkinson, J. W. (1948). The projective expression of needs. I. The effect of different intensities of the hunger drive on perception. *Journal of Psychology*, *25*, 205-222.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review*, *96*, 690-702.
- McClelland, D. C., & Pilon, D. A. (1983). Sources of adult motives in patterns of parent behavior in early childhood. *Journal of Personality and Social Psychology*, *44*, 564-574.
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: on doing well and being yourself. *Journal of Personality and Social Psychology*, *74*, 494-512.

- Michalak, J., Heidenreich, T., & Hoyer, J. (2011). Goal Conflicts and Goal Integration: Theory, Assessment, and Clinical Implications *Handbook of Motivational Counseling* (pp. 89-107): John Wiley & Sons, Ltd.
- Miller, G. A., Galanter, E., & Pribram, K. H. (1960). *Plans and the structure of behavior*. New York: Holt, Rinehart and Winston.
- Mischel, W., & Ayduk, O. (2004). Willpower in a cognitive-affective processing system: The dynamics of delay of gratification. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*. (pp. 99-129). New York, NY, US: Guilford Press.
- Mitchell, K. J., Raye, C. L., Ebner, N. C., Tubridy, S. M., Frankel, H., & Johnson, M. K. (2009). Age-group differences in medial cortex activity associated with thinking about self-relevant agendas. *Psychology and Aging, 24*, 438-449.
- Morgan, C., & Murray, H. A. (1935). A method for investigating fantasies: The Thematic Apperception Test. *Archives of Neurology and Psychiatry, 34*, 289-306.
- Morling, B., & Kitayama, S. (2008). Culture and motivation. In J. Y. Shah & W. L. Gardner (Eds.), *Handbook of motivation science* (pp. 417-433). New York, NY: Guilford.
- Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.
- Nelson, R. J. (2011). *An introduction to behavioral endocrinology* (4 ed.). Sunderland MA: Sinauer Associates Inc.
- Nuttin, J. (1984). *Motivation, planning, and action*. Leuven (Belgien): Leuven University Press/Lawrence Erlbaum Associates.
- Paivio, A. (1986). *Mental representations. A dual coding approach*. New York: Oxford University Press.

- Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. New York, NY: Oxford University Press.
- Panksepp, J., & Biven, L. (2012). *The archaeology of mind. Neuroevolutionary origins of human emotions*. New York, NY: W. W. Norton & Company.
- Powers, W. T. (1973). Feedback: Beyond behaviorism. *Science*, *179*, 351-356.
- Pueschel, O., Schulte, D., & Michalak, J. (2011). Be careful what you strive for: the significance of motive–goal congruence for depressivity. *Clinical Psychology and Psychotherapy*, *18*, 23-33.
- Raichle, M. E. (2015). The Brain's Default Mode Network. *Annual Review of Neuroscience*, *38*, 433-447.
- Ramsay, J. E., Pang, J. S., Ho, M.-H. R., & Chan, K. Y. (2017). Need for Power Predicts Career Intent in University Students. *Journal of Career Assessment*, *25*, 389-404.
- Rawolle, M., Schultheiss, M., & Schultheiss, O. C. (2013). Relationships between implicit motives, self-attributed motives, and personal goal commitments. *Frontiers in Psychology*, *4*.
- Rawolle, M., Schultheiss, O. C., Strasser, A., & Kehr, H. M. (2017). The Motivating Power of Visionary Images: Effects on Motivation, Affect, and Behavior. *Journal of Personality*, *85*, 769-781.
- Rheinberg, F. (2008). Intrinsic motivation and flow. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation and action* (pp. 323-348). New York, NY: Cambridge University Press.
- Riediger, M. (2007). Interference and facilitation among personal goals: Age differences and associations with well-being and behavior. In B. R. Little, K. Salmela-Aro & S. D.

- Phillips (Eds.), *Personal project pursuit: Goals, action, and human flourishing* (pp. 119-143). New York, NY: Psychology Press.
- Roch, R. M., Rösch, A. G., & Schultheiss, O. C. (2017). Enhancing Congruence between Implicit Motives and Explicit Goal Commitments: Results of a Randomized Controlled Trial. [Original Research]. *Frontiers in Psychology, 8*.
- Rösch, A. G., Stanton, S. J., & Schultheiss, O. C. (2013). Implicit motives predict affective responses to emotional expressions. *Frontiers in Psychology, 4*.
- Rothbart, M. K., Ellis, L. K., & Posner, M. I. (2004). Temperament and self-regulation. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*. (pp. 357-370). New York, NY, US: Guilford Press.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.
- Schüler, J., Brandstätter, V., Wegner, M., & Baumann, N. (2015). Testing the convergent and discriminant validity of three implicit motive measures: PSE, OMT, and MMG. [Article]. *Motivation and Emotion, 39*, 839-857.
- Schüler, J., Job, V., Fröhlich, S. M., & Brandstätter, V. (2009). Dealing with a hidden stressor: emotional disclosure as a coping strategy to overcome the negative effects of motive incongruence on health. *Stress and Health, 25*, 221-233.
- Schultheiss, O. C. (2001). An information processing account of implicit motive arousal. In M. L. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 12: New directions in measures and methods, pp. 1-41). Greenwich, CT: JAI Press.

- Schultheiss, O. C. (2008). Implicit motives. In O. P. John, R. W. Robins & L. A. Pervin (Eds.), *Handbook of Personality: Theory and Research* (3 ed., pp. 603-633). New York: Guilford.
- Schultheiss, O. C. (2013a). The hormonal correlates of implicit motives. *Social and Personality Psychology Compass*, 7, 52-65.
- Schultheiss, O. C. (2013b). Are implicit motives revealed in mere words? Testing the marker-word hypothesis with computer-based text analysis. *Frontiers in Psychology*, 4.
- Schultheiss, O. C., & Brunstein, J. C. (1999). Goal imagery: Bridging the gap between implicit motives and explicit goals. *Journal of Personality*, 67, 1-38.
- Schultheiss, O. C., & Brunstein, J. C. (2002). Inhibited power motivation and persuasive communication: A lens model analysis. *Journal of Personality*, 70, 553-582.
- Schultheiss, O. C., Frisch, M., Özbe, D., Ossmann, A., Schultheiss, M., Lentz, S., et al. (2019). Implicit motives show sex-dimorphic associations with digit ratio. *Motivation Science*, 5, 326-342.
- Schultheiss, O. C., Jones, N. M., Davis, A. Q., & Kley, C. (2008). The role of implicit motivation in hot and cold goal pursuit: Effects on goal progress, goal rumination, and depressive symptoms. *Journal of Research in Personality*, 42, 971-987.
- Schultheiss, O. C., & Köllner, M. (2014). Implicit motives and the development of competencies: A virtuous-circle model of motive-driven learning. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 73-95). New York, NY: Taylor & Francis/Routledge.
- Schultheiss, O. C., & Köllner, M. G. (in press). Implicit motives. In O. P. John & R. W. Robins (Eds.), *Handbook of Personality: Theory and Research* (4 ed.). New York: Guilford.

- Schultheiss, O. C., & Pang, J. S. (2007). Measuring implicit motives. In R. W. Robins, R. C. Fraley & R. Krueger (Eds.), *Handbook of Research Methods in Personality Psychology* (pp. 322-344). New York: Guilford.
- Schultheiss, O. C., Patalakh, M., Rawolle, M., Liening, S., & MacInnes, J. J. (2011). Referential competence is associated with motivational congruence. *Journal of Research in Personality, 45*, 59-70.
- Schultheiss, O. C., & Schiepe-Tiska, A. (2013). The role of the dorsoanterior striatum in implicit motivation: The case of the need for power. *Frontiers in Human Neuroscience, 7*.
- Schultheiss, O. C., & Schultheiss, M. (2014). Implicit motive profile analysis: An if-then contingency approach to the Picture Story Exercise. *Social and Personality Psychology Compass, 8*, 1-16.
- Schultheiss, O. C., & Strasser, A. (2012). Referential processing and competence as determinants of congruence between implicit and explicit motives. In S. Vazire & T. D. Wilson (Eds.), *Handbook of self-knowledge* (pp. 39-62). New York: Guilford.
- Schultheiss, O. C., & Wirth, M. M. (2018). Biopsychological aspects of motivation. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation and action* (3 ed., pp. 407-451). Heidelberg (Germany): Springer.
- Schultheiss, O. C., & Zimni, M. (2015). Associations between implicit motives and salivary steroids, 2D:4D digit ratio, mental rotation performance, and verbal fluency. *Adaptive Human Behavior and Physiology, 1*, 387-407.
- Schultz, W. (1998). Predictive reward signal of dopamine neurons. *Journal of Neurophysiology, 80*, 1-27.

- Sheldon, K. M. (2014). Becoming Oneself. *Personality and Social Psychology Review*, 18, 349-365.
- Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: two aspects of personality integration. *Journal of Personality and Social Psychology*, 68, 531-543.
- Smith, J. (1999). Life planning: Anticipating future life goals and managing personal development. In J. Brandstädter & R. M. Lerner (Eds.), *Action & self-development: Theory and research through the life span*. (pp. 223-255). Thousand Oaks, CA, US: Sage Publications, Inc.
- Spangler, W. D. (1992). Validity of questionnaire and TAT measures of need for achievement: Two meta-analyses. *Psychological Bulletin*, 112, 140-154.
- Strull, T. K., & Wyer, R. S. (1986). The role of chronic and temporary goals in social information processing. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 1, pp. 503-549). Chichester: Wiley.
- Stanton, S. J., Hall, J. L., & Schultheiss, O. C. (2010). Properties of motive-specific incentives. In O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 245-278). New York, NY: Oxford University Press.
- Stawarczyk, D., & D'Argembeau, A. (2015). Neural correlates of personal goal processing during episodic future thinking and mind-wandering: An ALE meta-analysis. *Human Brain Mapping*, 36, 2928-2947.
- Strick, M., & Papies, E. K. (2017). A Brief Mindfulness Exercise Promotes the Correspondence Between the Implicit Affiliation Motive and Goal Setting. *Personality and Social Psychology Bulletin*, 43, 623-637.

- Swann, W. B., Johnson, R. E., & Bosson, J. K. (2009). Identity negotiation at work. *Research in Organizational Behavior, 29*, 81-109.
- Tellegen, A., & Waller, N. G. (2008). Exploring personality through test construction: Development of the Multidimensional Personality Questionnaire. In G. J. Boyle, G. Matthews & D. H. Saklofske (Eds.), *Handbook of Personality Theory and Assessment: Personality Measurement and Testing* (pp. 261-292). Thousand Oaks, CA: SAGE Publications.
- Thrash, T., & Elliot, A. J. (2002). Implicit and self-attributed achievement motives: Concordance and predictive validity. *Journal of Personality, 70*, 729-756.
- Thrash, T. M., Cassidy, S. E., Maruskin, L. A., & Elliot, A. J. (2010). Factors that influence the relation between implicit and explicit motives: A general implicit-explicit congruence framework. In O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 308-346). New York, NY: Oxford University Press.
- Vygotsky, L. (1986). *Thought and language* (A. Kozulin, Trans.). Cambridge, MA: MIT Press.
- Weinberger, J., & McClelland, D. C. (1990). Cognitive versus traditional motivational models: Irreconcilable or complementary? In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 562-597). New York: Guilford Press.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale NJ: Lawrence Erlbaum.
- Wilson, T. D. (2002). *Strangers to ourselves: Discovering the adaptive unconscious*. Cambridge, MA: Belknap Press.

- Winter, D. G. (1991). Measuring personality at a distance: Development of an integrated system for scoring motives in running text. In D. J. Ozer, J. M. Healy & A. J. Stewart (Eds.), *Perspectives in personality* (Vol. 3, pp. 59-89). London: Jessica Kingsley.
- Winter, D. G. (1994). *Manual for scoring motive imagery in running text* (4 ed.). Department of Psychology, University of Michigan, Ann Arbor: Unpublished manuscript.
- Winter, D. G. (1996). *Personality: Analysis and interpretation of lives*. New York: McGraw-Hill.
- Winter, D. G. (1998). The Contributions of David McClelland to Personality Assessment. *Journal of Personality Assessment*, 71, 129-145.
- Wurf, E., & Markus, H. (1991). Possible selves and the psychology of personal growth. In D. Ozer, J. M. Healy & A. J. Stewart (Eds.), *Perspectives in personality* (Vol. 3, pp. 39-62). London: Jessica Kingsley.
- Young, P. T. (1955). The role of hedonic processes in motivation. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (pp. 193-238). Lincoln, NE: University of Nebraska Press.
- Zivin, G. (Ed.). (1979). *The development of self-regulation through private speech*. New York: Wiley.

Table 1

Overview of studies testing Brunstein's (2010) goal-attainment/motive-satisfaction (GAMeS) model

Authors	Studies	<i>N</i>	Goal measure	Motives	Dependent measure	Effect
Brunstein et al (1995)	--	60 (17♀/43♂)	Content coding of strivings for agency, communion	Affiliation-intimacy, power (difference score)	Retrospective emotional well-being (8 positive, 8 negative adjectives)	Striving agency x motive difference: $sr = -.438, p < .001$ Striving communion x motive difference: $sr = .366, p < .005$
Brunstein et al (1998)	Study 1	98 (48♀/50♂)	Goal progress ratings for agentic, communal goals	Difference between affiliation-intimacy and agentic (power, achievement) motives	Prospective changes in emotional well-being across 6 days and 12 assessments (hedonic tone scale from Matthews et al., 1990)	Agentic goal progress x motive difference: $b = 0.30, p < .01$ Communal goal progress x motive difference: $b = -0.21, p < .01$ $\Delta R^2 = .112, p < .01$
	Study 2	127 (75♀/52♂)	Goal progress ratings for agentic, communal goals	Difference between agentic (power, achievement) and affiliation-intimacy motives	Prospective changes in emotional well-being over 1 semester (augmented hedonic tone scale from Matthews et al., 1990)	Agentic goal progress x motive difference: $b = 0.18, p < .01$ Communal goal progress x motive difference: $b = -0.21, p < .01$
Schultheiss et al (2008)	Study 1	101	Averaged goal progress ratings	Sum score across power,	Retrospective emotional well-being (hedonic tone	Goal progress x motives

	(58♀/41♂; 2 not declared)	(intimacy, affiliation, achievement, power)	achievement, and affiliation-intimacy	scale from Matthews et al., 1990); Beck Depression Inventory (Beck et al., 1961)	EWB: $b = 0.420, p < .01$ (r_{goal} $\text{progress} \times \text{EWB} = .54, p = .00007$ for high motives and $.06, p = .67$, for low motives) Depression: $b = -0.677, p = .002$ ($r_{\text{goal}} \text{progress} \times \text{BDI} = -.55, p = .00006$, for high motives and $-.16, p = .25$, for low motives)
Study 2	100 (48♀/52♂)	Averaged goal progress ratings (intimacy, affiliation, achievement, power)	Sum score across power, achievement, and affiliation-intimacy	Retrospective emotional well-being (hedonic tone scale from Matthews et al., 1990); Beck Depression Inventory (Beck et al, 1961)	Goal progress x motives EWB: $b = 0.330, p = .07$ (r_{goal} $\text{progress} \times \text{EWB} = .50, p = .00003$ for high motives and $.28, p = .06$, for low motives) Depression: $b = -0.543, p = .03$ ($r_{\text{goal}} \text{progress} \times \text{BDI} = -.54, p = .00008$, for high motives and $-.14, p = .34$, for low motives)

Pueschel et al (2011)	--	61 (33♀/28♂)	Goal progress, partitioned according to agency and communion goal ratings	Difference between affiliation-intimacy and agentic (power, achievement) motives	Beck Depression Inventory (Beck et al, 1961)	Agentic goal progress x motive difference: $b = -0.247, p < .05$ Communal goal progress x motive difference: $b = 0.332, p < .01$ $\Delta R^2 = .115, p < .05$
Schultheiss (2013b)	Study 2	100 (49♀/51♂)	Averaged agentic goal progress ratings (achievement, power)	Sum score for agentic motives (power, achievement)	Retrospective emotional well-being (hedonic tone scale from Matthews et al., 1990)	Agentic goal progress x agentic motives on EWB: $b = 0.695, p = .008$ ($r_{\text{goal progress} \times}$ EWB = .53, $p = .0001$ for high motives and $-.02, p = .89$, for low motives)

Note. sr = semipartial correlation coefficient r ; b = regression slope; EWB = emotional well-being; BDI = Beck Depression Inventory.

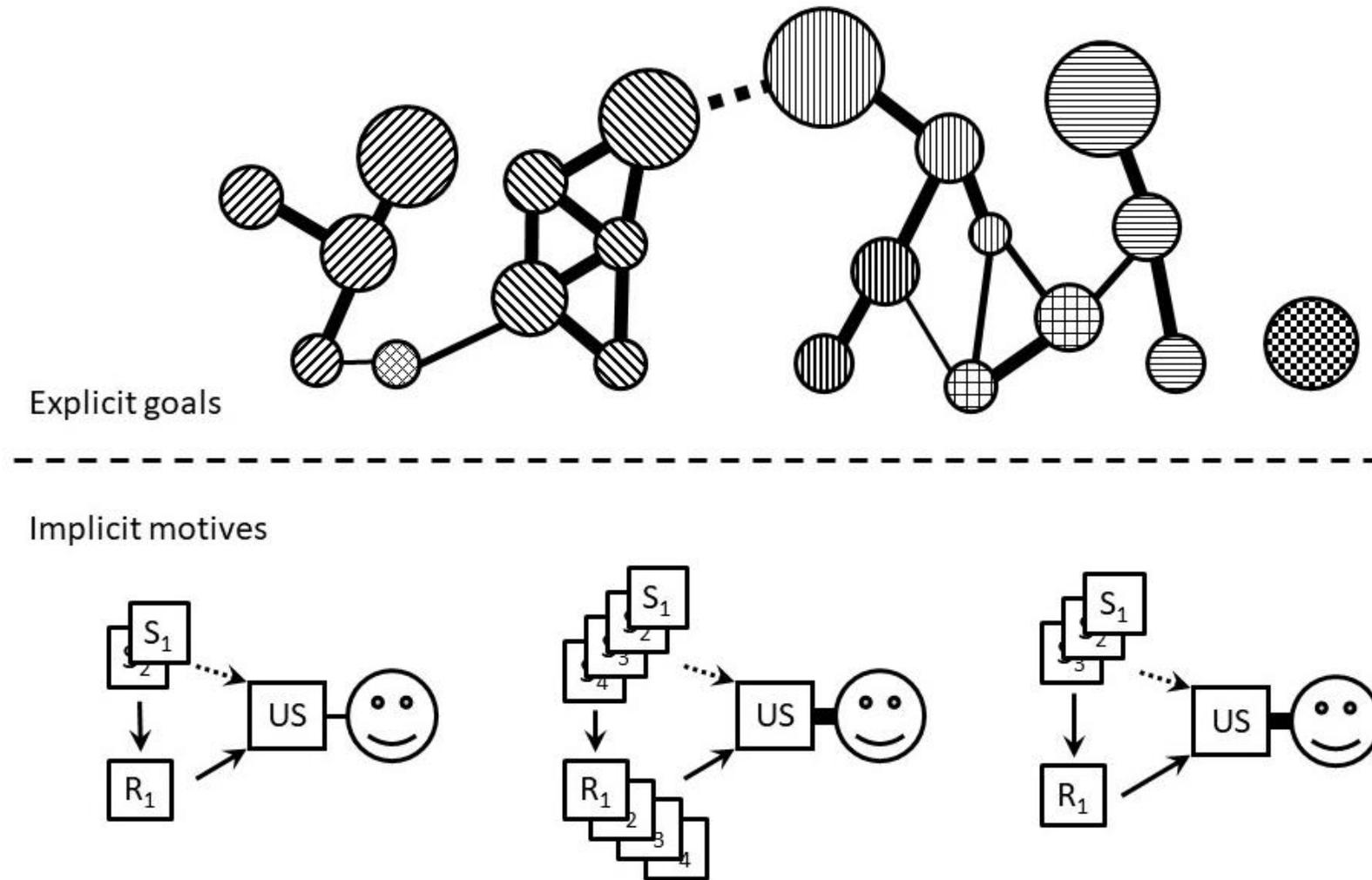


Figure 1. Schematic overview of motive and goal domains of personality.

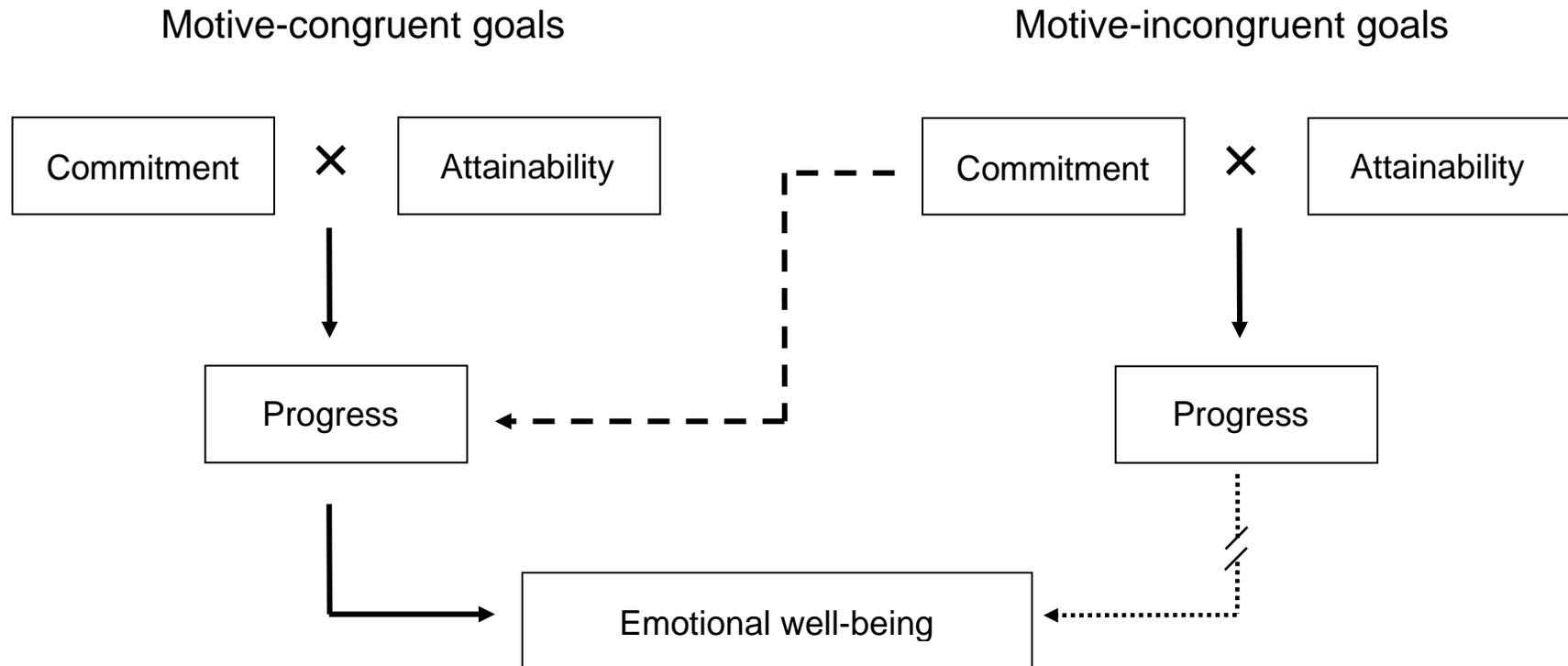


Figure 2. Schematic representation of Brunstein's (2010) goal-attainment/motive-satisfaction (GAMES) model of motive-goal interaction effects on emotional well-being. Striped line = inhibitory effect of pursuit of incongruent goals on motive-congruent goal progress. Dotted line = lacking effect of motive-incongruent goal progress on emotional well-being. Reprinted with permission from Brunstein (2010). Copyright 2010 by Oxford University Press.

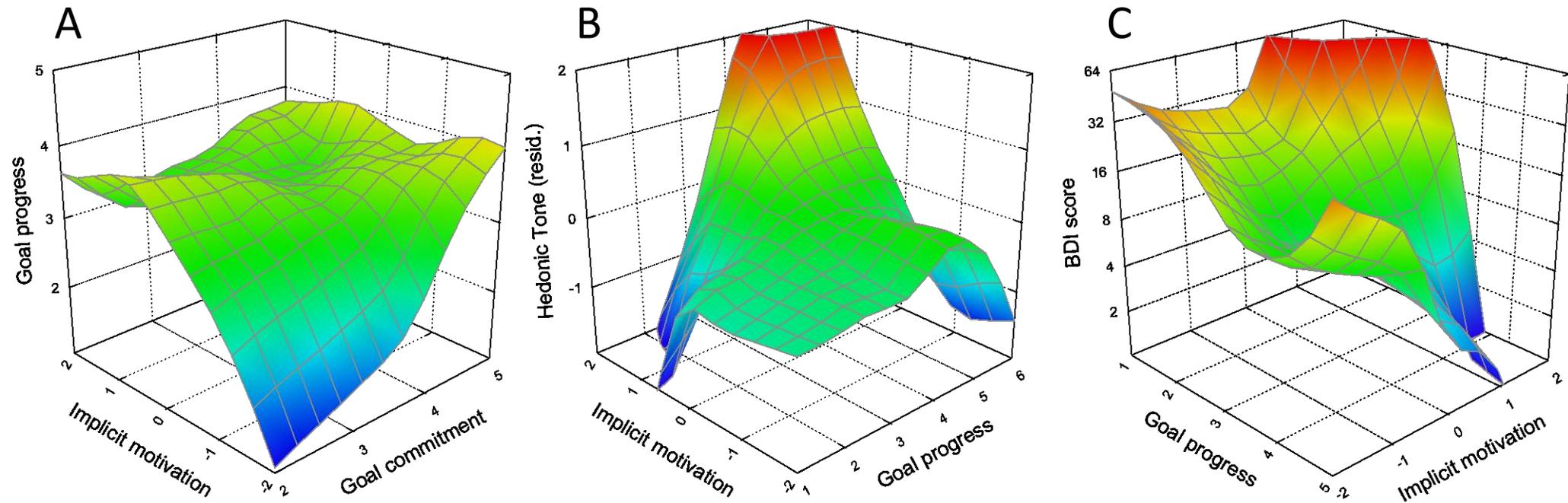


Figure 3. Illustrative findings from Schultheiss et al's (2008) Study 2, rendered from original data using a distance-weighted least-squares smoother. Panel A: Motive x goal commitment interaction effect on goal progress. Panel B: Motive x goal progress interaction effect on hedonic tone (residualized for overlap with trait negative emotionality). Panel C: Motive x goal progress interaction effect on depressive symptoms (Beck Depression Inventory, BDI).

