

## ORIGINAL ARTICLE

# Implicit motives and basic psychological needs

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## Abstract

The present article starts with discussing similarities and differences between conceptualizations of human needs in self-determination theory (SDT; Deci & Ryan [1985], *Intrinsic motivation and self-determination in human behavior*; Deci & Ryan [2000], *Nebraska symposium on motivation: Perspectives on motivation*) and motive disposition theory (MDT; McClelland, *Human motivation*, 1985). The second section focuses on the two-process model of psychological needs (Sheldon [2011], *Psychological Review*, 118: 552), which aims to integrate the two approaches, whereas the third section highlights some aspects of both theories that are still decoupled or even contradictory, but nevertheless still have a high potential to be linked. These three aspects are (a) the noncorresponding concepts of implicit power motive (MDT) and basic need for autonomy (SDT); (b) the differentiation of needs into hope and fear components, which is theoretically embedded in MDT, but not in SDT; and (c) MDT researchers' differentiation into an implicit and explicit motivational system, which is not included in SDT. Particularly, the last section highlights the potential for areas in which further integration is possible, which provides a foundation for comprehensive and exciting research on human motivation.

## 1 | INTRODUCTION

Self-determination theory (SDT; Deci & Ryan, 1985) and motive disposition theory (MDT; McClelland, 1985) both use the concept of human needs to explain human motivation and personality. In order to reconcile the coexistence of these two theories, we are left with three options. First, we could argue that their overlap is so immense that one approach could be replaced by the other with no significant theoretical losses. The second option would be to argue that MDT and SDT take completely different theoretical perspectives, making a theoretical integration impossible. A third option says that the truth lies somewhere in between the two extremes.

In our first section of this article, we will exclude these two extreme options by outlining the obvious similarities and striking differences between MDT and SDT. The second section of this article supports the third option. Here, we

will review an integrative approach and conclude that some aspects of both theories are already very well theoretically integrated. Finally, in the third section, we will outline theoretical and methodological aspects of MDT and SDT that still diverge from each other. We focus on three gaps: (a) the noncorresponding concepts of implicit power motive and basic need for autonomy, (b) the consideration of hope and fear motives, and (c) implicit and explicit motives in MDT that have no corresponding concepts in SDT. We believe that these three issues have the highest potential to be bridged.

These issues address further theoretical considerations and highlight those requiring empirical examination. They are starting points to think further about how the dissimilar aspects of MDT and SDT can be integrated. However, the discussion might even lead the reader to the conclusion that certain aspects might remain contradictory. Nevertheless, these remaining contradictions can hopefully stimulate the process of scientific research.

## 2 | SIMILARITIES AND DIFFERENCES BETWEEN NEED CONCEPTS

Table 1 functions as a leitmotif that leads us through the similarities and key differences between motive disposition theory's (MDT) and self-determination theory's (SDT) concepts of human needs.

At first glance, it seems as though the differences between both approaches clearly outweigh their common ground. To correct this first impression, we would like to focus readers' attention on the significance of the theories' basic assumptions that are, in our opinion, just as important as their distinguishing features. It is highly interesting to note that, although SDT and MDT have developed completely independently from each other (based on different theoretical origins), their core assumptions are remarkably similar. The fact that two independent theories lead researchers to draw very similar conclusions (e.g., that need satisfaction influences assorted aspects of human life; that themes of social relatedness and competence are more important than other themes) supports the relevance and validity of their hypothetical constructs. On the other hand, when it comes to conceptual details, MDT's and SDT's distinguishing features become more apparent. We will critically discuss the compatibility of both approaches. In advance, we want to stress that agreement often needs

less discussion than disagreement, which might then inadvertently contribute to the impression that the distinguishing features outweigh the similarities. This, however, would be misleading, and it is our intention to emphasize the importance of the existing similarities.

To summarize the common ground displayed in the upper part of Table 1, we will briefly go through each line of the table. MDT and SDT both highlight the importance of human needs and share the basic idea that the understanding of psychological needs is essential for understanding human functioning, such as motivation, behavior, and goal pursuit (Deci & Ryan, 1985, 2000; McClelland, 1985; Ryan & Deci, 2000; Schultheiss & Brunstein, 2010). Furthermore, there is agreement between MDT and SDT that satisfaction and thwarting of needs have positive and negative effects on different aspects of health, which include effects on emotional and physical well-being and life satisfaction in general (see Brunstein, 2010; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Hofer, Busch, & Kiessling, 2008; Hofer & Chasiotis, 2003; Loney & Standage, 2007; Reis, et al., 2000).

Both approaches assume that it makes sense to focus on a limited number of psychological needs. Although human behavior might be driven by further needs, a set of three needs exist that are more important than other needs because they already can explain a huge range of human behavior. Murray (1938, pp. 144–145) started with a list of 20

**TABLE 1** Similarities and key differences between motive disposition theory (MDT) and self-determination theory (SDT)

Similarities in core assumptions		
	<ul style="list-style-type: none"> <li>• Importance of human needs for motivation</li> <li>• Effects of need satisfaction on health</li> <li>• Assumption of a limited number of crucial needs</li> <li>• Overlap of themes of needs: achievement/competence and affiliation/social relatedness</li> </ul>	
Differences in need conceptualizations		
	MDT	SDT
<i>Theme of crucial need</i>	Power	Autonomy
Individual differences	Individual differences in motives (differences in “wanting”)	No differences in need strength (no differences in “needing”)
Hypotheses about the effects of need satisfaction	Matching hypothesis: Motive × Environment interaction predicts motivation and well-being	Universality hypothesis: Satisfaction of basic needs has similar (positive) effects for everybody
<i>Implicit vs. explicit</i>	Implicit vs. explicit motives	NA
Access to needs and measurement	Unconscious, indirect assessment: PSE, OMT	Conscious, direct assessment: self-reports
Evolutionary basis	Variation in motive strength through learning	Basic needs are represented within the genome of every human being
Neurohormonal basis	Motives are associated with specific hormones	No explicit assumptions about neurohormonal basis of needs
<i>Hope vs. fear</i>	Differentiation into hope and fear components of implicit motives	NA

Note. PSE = Picture Story Exercise; OMT = Operant Motive Test. Italicized aspects are outlined in the Diverging Aspects of MDT and SDT section of the text.

manifest needs, among them achievement, affiliation, and dominance, but also others like deference, order, play, and superiority. Current research on implicit motives mainly focuses on a need triad consisting of the achievement, affiliation, and power motive (see below). Right from the beginning, SDT posited a parsimonious list of three basic psychological needs as a means of organizing and interpreting a wide range of empirical results (Deci & Ryan, 1985). There is broad consensus that the basic needs for autonomy, competence, and social relatedness (see below) have so many adaptive advantages for individuals and the functioning of their social groups (Ryan, Kuhl, & Deci, 1997) that it is not necessary to focus on other needs.

Besides agreeing on a limited number of needs, MDT and SDT agree with each other on two out of three themes of psychological needs. The first theme relates to *achievement/competence*. According to MDT, individuals with a strong achievement motive have the dispositional concern for doing well according to a standard of excellence (McClelland, Atkinson, Clark, & Lowell, 1953; for reviews about the achievement motive, see Brunstein & Heckhausen, 2008; Pang, 2010). They strive for success (e.g., progress, mastery) in different life domains and aim to avoid failure (e.g., setbacks, stagnation). They have “the capacity to derive satisfaction from the autonomous mastery of challenging tasks” (Schultheiss, 2008, p. 608; see also McClelland et al., 1953). Briefly stated, individuals with a strong achievement motive aim to feel competent, that is, effective in dealing with the environment. This, in turn, is in line with the conceptualization of the basic need for competence according to SDT. Competence represents the desire to master the environment and the outcomes of one’s behavior (Deci & Ryan, 1985). Naturally, the experiences of mastery and effectance (need for competence) do not completely overlap with the desire to exceed standards of excellence in order for someone to feel proud and achieve self-improvement, as is the case with the achievement motive. However, mastery experiences, as the name suggests, imply that one has mastered personal challenges. This is the common core of the need for competence and the achievement motive.

The second common theme is *affiliation/relatedness*. Individuals with a strong affiliation motive are concerned with making friends, spending harmonious time with others, and establishing and maintaining warm and friendly interpersonal relations in general (French & Chadwick, 1956, p. 296; for reviews about the affiliation motive, see Sokolowski, 2010; Weinberger, Cotler, & Fishman, 2010). They have the “capacity to derive satisfaction from establishing, maintaining, and restoring positive relationships with others” (Schultheiss, 2008, p. 605; see also Atkinson, Heyns, & Veroff, 1954). In short, individuals with a strong affiliation motive aim to feel socially related, or, according to the definition of the basic need for social relatedness according to SDT

(Deci & Ryan, 1985), they want to experience reciprocal care and concern for important others (Vansteenkiste, Niemiec, & Soenens, 2010). The disagreement in the third need, which is *power* in MDT and *autonomy* in SDT, will be outlined in the third section of this article. In the following, we outline further differences summarized in Table 1.

Regarding their evolutionary basis, MDT and SDT both assume that the basic needs are innate (for a discussion of different concepts of innateness, see Chasiotis, 2011). However, MDT’s and SDT’s different ways of looking at the development of human needs lead to different assumptions about individual differences. Within MDT, it is assumed that implicit motives are “built on affective experiences with natural incentives early in life” (McClelland, Koestner, & Weinberger, 1989, p. 697). Positive learning experiences with the natural incentives of doing something better, making contact with others, and having impact lead to a strong achievement, affiliation, and power motive, respectively. Although MDT researchers agree that individual differences in motive strengths develop due to differences in early childhood learning (see, e.g., Schattke, Koestner, & Kehr, 2011; Schultheiss, 2008), there is a large empirical gap in this area. Studies that analyze the origin of motives are still very rare (for an exception, see McClelland & Pilon, 1983).

Cross-cultural studies give further insight into the interplay between (cultural) learning processes and motives. Given that cultural contexts can differ substantially in what constraints and affordances are applied to early childhood experiences (Keller, 2007), universalities of psychological mechanisms are not a foregone conclusion. In a cross-cultural study in which a preschooler version of an instrument measuring implicit motives was applied to five-year-olds from Cameroon and Germany, Chasiotis, Bender, Kiessling, and Hofer (2010) demonstrated that implicit motivation in preschoolers is related to sociocognitive abilities like autobiographical memory, mentalistic understanding (theory of mind), and culture-specific self-construals. This result suggests that implicit motivation plays a crucial role in the development of sociocognitive skills in the preschool years. However, due to the cross-sectional character of these studies, causal interpretations have to be taken with care. Furthermore, little is known about the stability of implicit motives or the exact conditions under which implicit motive strengths change across the life span (Denzinger, Backes, Job, & Brandstätter, 2016; Valero, Nikitin, & Freund, 2015; Veroff, Reuman, & Feld, 1984).

In contrast to the assumption of individual differences proposed by MDT researchers (McClelland et al., 1989), Deci and Ryan (2000) assume that the basic needs for autonomy, competence, and relatedness are “psychological nutrients” (p. 229). This means that they are important for the psychological well-being of individuals in the same way that the physical needs hunger and thirst are crucial for

one's physical survival. They are necessary conditions for well-being and personal growth. Individual differences in how much a person seeks out certain experiences are a result of previous learning and developmental processes. For example, if an individual has a one-sided focus on competence experiences (e.g., focusing on one's career) and does not attach importance to the experience of social relatedness and autonomy, then this is not considered to be the result of a stronger basic need for competence, but, instead, the result of previous learning and developmental processes related to competence. It is important to note that from an SDT perspective, people might *want* some experiences more than others, but this *wanting* is independent from what they *need* for personal growth and well-being (Sheldon & Schüler, 2011). In sum, Ryan and Deci (2017) acknowledge differences in need strengths as "wanting," but not as "needing." To return to the example of the careerist, she also needs, for example, to experience social relatedness even if this stands in contrast to her self-concept of being a successful and independent loner who does not need anybody else to be satisfied with life. This last difference can be summarized as MDT's assuming that individuals differ in need strengths due to different learning experiences, whereas SDT assumes that there are neither interindividual nor intraindividual differences in the strengths of basic needs. Deci and Ryan (2000) specify that "there are important individual differences that affect the degree to which people will experience need satisfaction in different contexts" (p. 232), but "these differences do not concern need strengths" (p. 232). They are the results of different regulatory or interactive styles.

Broadly speaking, the abovementioned different views of SDT and MDT on individual differences lead to different focal points in research. Current research guided by MDT focuses on correlates (e.g., cognitive, emotional, behavioral, and hormonal) of motive differences and on the interaction between motives and corresponding incentives within the (social) environment. SDT researchers suggest, *inter alia*, that modifications to environmental characteristics in the family, in school, at the workplace, and in sports occur in such a way that people get what they need (in the sense of "needing" vs. "wanting"; see below).

Taking MDT's Motive  $\times$  Incentive interaction perspective, Hofer and Busch (2011) and Schüler and colleagues (e.g., Schüler, Brandstätter, & Sheldon, 2013; Schüler, Sheldon, & Fröhlich, 2010) tested and empirically confirmed a *matching hypothesis*, which states that the positive effects of basic need satisfaction depend on its fit with a corresponding implicit motive. It is not assumed that some people do not benefit from need satisfaction at all, but that some people benefit more strongly than others because motives function as amplifiers of affects that accompany motive-corresponding incentives. Specifically, the authors showed that individuals with a strong affiliation

motive showed greater benefits in terms of motivation and well-being when their needs for relatedness were satisfied. Likewise, individuals with a strong achievement motive benefit the most from the satisfaction of their need for competence compared to individuals with a weak corresponding motive (Hofer & Busch, 2011; Schüler & Brandstätter, 2013; Schüler et al., 2010, 2013; Schüler, Wegner, & Knechtle, 2014). In contrast, according to SDT, humans have an evolved human nature that includes basic psychological needs (Deci & Ryan, 2000, p. 246) and therefore "the three basic psychological needs are universal and thus must be satisfied in all cultures for people to be optimally healthy."

Another difference displayed in Table 1 is the consideration of implicit and explicit processes in MDT (but not in SDT). It is highlighted in our section about diverging aspects of MDT and SDT. Furthermore, needs in SDT and MDT are measured differently. According to MDT, implicit motives cannot be assessed using self-reports because they operate unconsciously (McClelland et al., 1989). Indirect measures such as the Picture Story Exercise (Morgan & Murray, 1935; Schultheiss & Pang, 2007) and the Operant Motive Test (Kuhl, 2013; Kuhl & Scheffer, 1999) are needed, as they bypass cognitive reflection and conscious self-evaluation (for a critical discussion of implicit motive measures, see Schüler, Brandstätter, Wegner, & Baumann, 2015).

### 3 | THE TWO-PROCESS MODEL OF PSYCHOLOGICAL NEEDS AS AN INTEGRATIVE APPROACH

The analyses of the interaction between implicit motives and basic needs discussed above as well as the consideration of SDT-based concepts as correlates of motive congruence (e.g., self-concordance, self-determination), which we will elaborate in the next section, are encouraging attempts to use concepts from both theoretical sources in order to enhance the predictability of well-being. In this section, however, we go one step further and refer to an "integrative" approach in a narrower sense (e.g., reconciling differences and the intermeshing of facets as a step toward a more singular theory). We assume that integration means creating a consilient bigger picture of human motivation. This is accompanied by more complexity that covers, for example, a larger time sequence and includes more than one process. The two-process model (TPM) of psychological needs (Prentice, Halusic, & Sheldon, 2014; Sheldon, 2011; Sheldon & Schüler, 2015) fulfills these criteria and assumes a global perspective on complex motivational sequences.

The TPM distinguishes between needs that produce adaptive behavior, called the *needs-as-motives perspective* (implicit motives according to MDT), and needs as universally

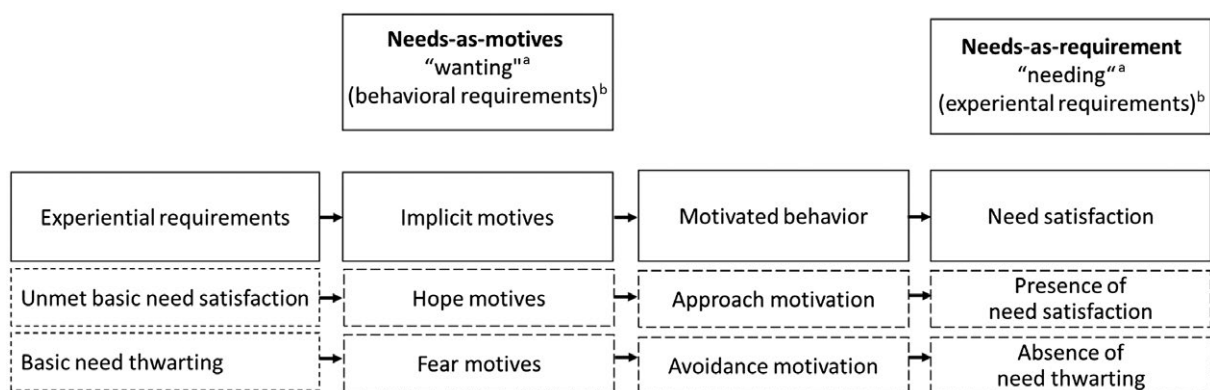


required experiences, called *needs-as-requirements perspective* (basic needs according to SDT). In doing so, this model considers implicit motives to be learned desires to experience certain kinds of experiences as rewarding. Individuals *want* these experiences more than others do and direct their lives toward opportunities that promise these experiences (e.g., an individual with a strong achievement motive who strives for a career). *Wanting* means that people long to strive for motive-specific incentives. It does not necessarily mean that people consciously reflect their “wanting.” In accordance with McClelland’s (1985) assumption that motives energize and direct behavior, individuals initiate behavior that is oriented toward motive satisfaction. This is why the TPM also refers to implicit motives as *behavioral motives*. In the TPM, motives are placed at the front end of a temporal and dynamic sequence of motivation as displayed in Figure 1 (solid lines). They entail motivated behavior that in turn leads to need satisfaction. At this point, SDT’s needs-as-requirements perspective comes into play. Assuming that needs are universal necessities that are an essential condition for motivation, we conclude that everybody *needs* a certain amount of need satisfaction. For a broader discussion of *needing* and *wanting* aspects of motivation, see Sheldon and Schüler (2011).

Basic need satisfaction is located at the back end of the temporal sequence. It is the consequence of motivated behavior and the prerequisite for well-being. However, the basic need concept in SDT cannot explain how the experiential requirements can be met. An autonomy-supportive environment can facilitate basic need satisfaction and avoid basic need thwarting (Adie, Duda, & Ntoumanis, 2008; Ryan & Deci, 2008; for overviews about autonomy support effects, see, e.g., Ryan & Deci, 2008), but the individual itself is relatively ineffective or even counterproductive when it comes to changing states of basic need thwarting. When basic needs are thwarted, people make accommodations that reduce the probability of the satisfaction of their basic

needs (Deci & Ryan, 2000, p. 231). According to Deci and Ryan (2000, p. 231), “thwarting of psychological needs can promote the development of defenses and need substitutes that may, over time, lead to further thwarting of need satisfaction.” However, how then can behavior be spurred that leads to the rewarding positive quality of need satisfaction? TPM closes this gap by postulating that motives function as a source of energy that initiates basic need-satisfying behavior.

Sheldon and Schüler (2011) empirically tested TPM’s assumptions about the front and back ends of the temporal sequence. In four studies, they found that individuals differ in their achievement and affiliation motives. Motives were operationalized using an explicit motive measure (Personality Research Form; Jackson, 1984) in Studies 1–4 and an implicit motive measure (Picture Story Exercise; Morgan & Murray, 1935; Schultheiss & Pang, 2007) in Study 4. In accordance with MDT, participants differed in their *wanting* of certain experiences. Furthermore, motive strength predicted corresponding need satisfaction (assessed by basic need scales; Gagne, Ryan, & Bargmann, 2003; Sheldon & Gunz, 2009). The implicit and explicit affiliation motive predicted the experience of social relatedness. However, for the achievement domain, only the explicit motive predicted the experience of competence. This provides partial empirical support for the phenomenon assumed by the TPM that individuals often *get* what they *want* (Sheldon & Schüler, 2011). Again, as introduced above, *wanting* is meant in terms of an urge to strive for certain experiences that can be more (explicit motives) or less (implicit motives) consciously represented. The results further showed that wanting and getting do not necessarily lead to well-being. An interaction effect between motives and corresponding need satisfaction on general well-being could not be found in any of the four studies (see also Schüler et al., 2013). However, experiencing competence and social relatedness led to



**FIGURE 1** Extended two-process model. Solid lines were adapted from Sheldon (2011, p. 555); dotted lines are model extensions discussed in this article. <sup>a</sup>Sheldon and Schüler (2011). <sup>b</sup>Sheldon (2011)

increased positive and reduced negative affect for everybody. Hence, a *universality hypothesis* was confirmed at the back end of the process model regarding the prediction of general well-being. Furthermore, in two of the studies, the authors found support for a *matching hypothesis*. This was observed, however, at the front end of the model; participants reported greater self-concordance for assigned goals that match their motives. This fits well to the results reported above by Hofer and Busch (2011) and Schüler and colleagues (e.g., 2010, 2013) that Motive  $\times$  Basic Need interactions might regulate short-term and domain-specific motivation and well-being.

In sum, implicit motives at the front end and basic need satisfaction at the back end of the temporal sequence are highly functional with regard to the regulation of behavior. The former initiate behavior due to people's (varyingly strong) urges to experience competence and social relatedness. This represents a continuous power source that also works even when motives are deprived, that is, when individuals have not experienced motive–corresponding need satisfaction for a longer period. Thereby, they guarantee that people actively strive for need satisfaction. Basic needs at the back end, in turn, guarantee intrinsic motivation and well-being. They immediately reward behavior and lead to personal development and growth in the end.

By integrating conceptual details of MDT (e.g., individual differences in need strength) and SDT (e.g., universal beneficial effects of basic need satisfaction), the TPM provides a theoretical framework for phenomena that otherwise could not be easily explained by only one of the two approaches. For example, SDT could not explain why people do not strive with equal conviction for feeling socially related and why some people even deny needing positive social relationships (“I am a loner and I like it”), although the need for relatedness is a *basic* need. One MDT-based answer is that people have learned to value one experience (e.g., feeling competent) more positively than others (e.g., feeling socially related). On the other hand, a question that MDT researchers cannot easily answer without referring to basic needs is why individuals with a strong achievement motive and success in their preferred and freely chosen areas of performance (e.g., a meteoric rise in career, high performance in sports) are sometimes still not happy. Why do they feel that something important is missing in their lives even though they behave in accordance with their strong achievement motive? One SDT-based answer is that overall life satisfaction and well-being require a balanced satisfaction or at least a minimum satisfaction of all three basic needs (Sheldon & Niemiec, 2006). In sum, the TPM is a unifying theoretical approach that allows researchers to explain complex phenomena of motivation and well-being within one framework.

## 4 | DIVERGING ASPECTS OF MDT AND SDT

In the following, we will discuss three aspects (highlighted in Table 1) that still diverge in MDT and SDT and aim to suggest a theoretical and empirical starting point to decide whether they can be connected.

### 4.1 | Power versus autonomy

The results by Sheldon and Schüler (2011), Hofer and Busch (2011), and Schüler and colleagues (2010, 2013) reported above have shown that motives and basic needs interact to predict short-term and domain-specific motivation and well-being. Thus, empirical data exist that already support our claim that basic need satisfaction acts as a kind of incentive, which triggers responses varying in strength in individuals with more or less strong corresponding motives. However, these studies refer to the contentual interlinked themes of achievement/competence and affiliation/social relatedness, respectively. However, with regard to the third need, which is power in MDT and autonomy in SDT, the two theoretical need approaches disagree: Simply put, MDT and SDT do not have comparable counterparts.

People with a strong power motive have the desire to impact and influence others, to feel superior to others, and to demonstrate reputation and prestige (for reviews about the power motive, see Fodor, 2010; Schmalt & Heckhausen, 2010; Winter, 1973). They have “the capacity to derive pleasure from having physical, mental, or emotional impact on other individuals or groups of individuals, and to experience the impact of others on themselves as aversive” (Schultheiss, 2008, p. 606). In brief, individuals with a strong power motive aim to feel strong by influencing others or, using an SDT term, by *controlling* others. Thus, the power motive, as measured using the Picture Story Exercise and Winter's (1994) scoring system, is not an appropriate dispositional counterpart of the basic need for autonomy, which is the desire to be the origin of one's behavior (Deci & Ryan, 1985). In contrast, the power motive represents “power over others” (using scoring categories such as “strong forceful actions which inherently have impact on other people or the world at large”; Winter, 1994, p. 15) rather than “power over oneself,” which might be a definition of *autonomy*. In summary, in the original need approaches, there is neither a dispositional counterpart of the basic need for autonomy (e.g., an “autonomy motive”) nor a basic need counterpart of the implicit power motive (e.g., a “basic need for power”).

However, at the beginning of MDT research and in recent years, a few approaches aimed at identifying an autonomy disposition. For example, Murray (1938) described an autonomy motive as a desire “To resist influence or coercion.

To defy an authority or seek freedom in a new place. To strive for independence” (p. 82). In addition, McClelland (1975) identified power over oneself as an important aspect of power in his model of power stages (see second stage: target and source of power are both the self). Interestingly, current motive researchers also explicitly refer to the “double-facedness of the power motive” (Schultheiss, 2008) and thereby distinguish between power over others (desire to dominate others) and power over oneself (desire to self-determine one’s actions and free oneself from being controlled by others). However, despite this, an implicit autonomy disposition has rarely been empirically considered in current motive research (for an exception, see Alsleben, 2008, 2017; Alsleben & Kuhl, 2011).

Schüler, Sheldon, Prentice, and Halusic (2016) started to fill this research gap and used two operationalizations of the “autonomy motive” in their studies. The first is based on DeCharms’s “origin concept” (1968/1983), according to which individuals differ in their preferences for origin experiences through personal causation (see also origin scoring system; DeCharms & Plimpton, 1992). The second operationalization was the freedom motive, which is theoretically embedded in Kuhl’s personality systems interactions theory (Kuhl, 2001) and is conceptually close to the autonomy motive. The freedom motive is defined as the desire for self-integration that comprises self-definition, self-preservation, and self-growth, as well as free internal experience of self (Alsleben & Kuhl, 2011). The freedom motive is assessed using Kuhl’s (2013) Operant Motive Test (OMT). Using the OMT freedom and the origin scoring systems as operationalizations of an autonomy disposition, Schüler and colleagues (2016) confirmed the assumed autonomy disposition–basic need for autonomy moderation hypothesis in different settings (academic learning context, exercise promotion). Undergraduate students and physically inactive people with a strong autonomy disposition benefited more strongly from the basic need for autonomy satisfaction in terms of flow experience and well-being. Sieber, Wegner, and Schüler (2016) extended this result pattern by testing intrinsic motivation of students in a physical education class in school. Again, supporting the matching hypothesis, students with a strong autonomy motive (assessed using DeCharms and Plimpton’s 1992 scoring system) showed significantly higher intrinsic motivation in an autonomy-supportive group than in an autonomy-restrictive group or in a control group, and compared to participants with a weak autonomy disposition. Sieber, Schüler, and Wegner (2016) continued this line of research and tested physiological stress as a further indicator of well-being. In an experiment with a student sample, the authors tested whether the autonomy disposition (DeCharms and Plimpton’s scoring system) moderates the effect of different teaching styles (controlling, autonomy-supportive, and neutral; experimentally induced using vignettes) on the acute physiological stress response (salivary alpha-amylase).

In accordance with the matching hypothesis, participants with a high implicit autonomy disposition displayed lower salivary alpha-amylase responses when exposed to autonomy-supportive vignettes as compared to when they were exposed to controlling or neutral teaching styles. The opposite pattern was found in students with a low implicit autonomy disposition.

In sum, a few studies have already shown that an autonomy disposition moderates the effects of the basic need for autonomy satisfaction on different outcome variables and thus supports the abovementioned matching hypothesis, stating that some people are more in need of need satisfaction—in this case, autonomy—than other people. The results fit well into our theoretical considerations and are in accordance with a series of previous studies conducted to test the Affiliation Motive  $\times$  Need for Relatedness and Achievement Motive  $\times$  Need for Competence interactions. Whereas the authors’ analyses in the domains of affiliation and achievement have focused on self-reported facets of motivation (e.g., intrinsic motivation, flow) and well-being (e.g., affect; Schüler & Brandstätter, 2013; Schüler et al., 2013), the studies in the autonomy domain are broader and additionally include objectively assessed physiological stress responses (Schüler et al., 2016; Sieber, Schüler, et al., 2016; Sieber, Wegner, et al., 2016). Empirical support for physiological responses in the affiliation and achievement domains has yet to be provided, and long-term effects of Motive  $\times$  Need Satisfaction interactions on physiological responses still need to be tested.

Previous studies and theoretical considerations also raise many more questions that challenge future research. To name but a few examples, MDT researchers still have to empirically show that the autonomy disposition we assessed using the DeCharms and Plimpton (1992) Origin scoring system and the OMT scoring system, respectively, is appropriately described as an implicit motive. Does it share characteristics that constitute an implicit motive? Does it, for example, stem from affectively charged preferences for certain kinds of incentives that are learned in early childhood (McClelland et al., 1989)? Does it remain relatively stable across the life span (Denzinger et al., 2016)? Does it influence information processing (memory, attention) as other implicit motives do (Bender & Woike, 2010)? Is its arousal associated with a specific hormone (Schultheiss, 2013)? Are implicit autonomy measures unrelated to questionnaire measures of autonomy, and what does implicit and explicit motive congruence predict (Spangler, 1992; Thrash, Elliott, & Schultheiss, 2007)?

Another potential avenue is to think about power as a basic need that then corresponds to the implicit power motive. The implicit power motive is defined as the desire to influence or direct the behavior of others, and this also includes prosocial modes of realization (Schmalt & Heckhausen, 2010; Winter, 1973; see also Winter’s 1973 differentiation into personalized and socialized power). Implicit power motivation

has, for example been shown to be linked to helping behavior and volunteering (Aydinli, Bender, Chasiotis, Van de Vijver, & Cemalcilar, 2014, 2015) and parenting (caregiving and nurturing behavior as pro-social realization of the power motive; Chasiotis, Bender, & Hofer, 2014; see Chasiotis & Hofer, 2017, for a recent overview). In this sense, exercising power is highly compatible with positive, growth-oriented development that SDT researchers assume to be a characteristic of basic needs (Deci & Ryan, 1985). It has to be theoretically considered whether a basic need for power fulfills further criteria of a basic need as, for example, defined by Vansteenkiste and colleagues (2010, p. 134). These criteria are that need satisfaction should promote humans' thriving and optimal functioning and leads to well-being, that basic needs are innate, and that the thwarting of basic needs leads to maladaptive ways of coping.

## 4.2 | Hope and fear components of implicit motives

The differentiation of implicit motives into hope and fear components has a long research tradition (e.g., McClelland et al., 1953). The hope and fear components of implicit motives (achievement: hope of success and fear of failure; affiliation: hope for closeness and fear of rejection; power: hope of power and fear of weakness; McClelland, 1985) explain, for example why people respond differently in terms of emotions, cognition, behavior, and physiology to the same motive-relevant situation. Individuals with a strong fear of rejection, for example, want to feel close to other people and enjoy harmonious times as much as people with a strong hope for closeness. However, due to their expectancy that others do not like and will probably reject them, they feel (fear, worries) and act (insecure and clumsy social interactions) differently as compared to individuals without this fear.

The affiliation motive was originally even conceptualized as a "fear motive." From an evolutionary perspective, it can be traced back to phenomena such as brood care (Bowlby, 1958). Being close to others provides nurturance, protection, and security, whereas being rejected and expelled from the group can ultimately lead to death. Thus, affiliation is more about a fear of being alone and/or rejected than about the pleasure of being with others (Boyatzis, 1973). The first scoring manual for affiliation (Heyns, Veroff, & Atkinson, 1958) was mainly established in situations that arouse fear of rejection, such as when college students had been rejected by a fraternity (Shipley & Veroff, 1952) or expected to be socially evaluated by their peers (Atkinson et al., 1954). Thus, Heyns and colleagues' (1958) measure of affiliation focuses on fear of rejection. In research applying their coding system, affiliation correlates with a higher *quantity* of contacts (Lansing & Heyns, 1959) and the tendency to avoid conflicts (Exline,

1962)—both behaviors may help to avoid being alone or rejected. Furthermore, developmental findings indicate that affiliation is rooted in experiences of relationship deprivation: Mothers' self-rated unresponsiveness toward their children at age 5 predicts children's affiliation motives at age 31 (McClelland & Pilon, 1983); second children receive less parental affection and have stronger affiliation motives than firstborn and only children (Connors, 1963); teenagers institutionalized from early childhood on have stronger affiliation motives compared to teenagers living at home with their parents (Youngleson, 1973).

Some decades later, McAdams (1989) developed the intimacy motive, defined as the "experiencing of a warm, close, and communicative exchange with another (other) person(s)—as an interpersonal encounter, which is non-instrumental and experienced as 'good' in and of itself" (McAdams, 1980, p. 430). In contrast to affiliation, intimacy marks a "hope motive" focused on mutual sharing of one's inner life in close dyadic interactions rather than social contact of any sort. Intimacy correlates with a higher *quality* of contacts as indicated by better memory for contents of conversations and mutual liking (McAdams, Healey, & Krause, 1984; McAdams & Powers, 1981). Developmental findings indicate that intimacy is rooted in positive relationship experiences, such as the extent to which the mother used praise as a technique in child-rearing (McClelland & Pilon, 1983).

The hope for success and fear of failure components of the achievement motive were established after arousing the motive through confrontation with difficulty and experimental manipulations of success, failure, and success–failure sequences (Heckhausen, 1963). Developmental findings show that adults with strong achievement motives had mothers who recalled scheduling feeding and being strict about toilet training (McClelland & Pilon, 1983). Scheffer (2005) views the emphasis on independently regulating autonomous physiological functions as an early expression of achievement pressure (i.e., control of children's progress toward standards of excellence) that Trudewind (1975) identified as a source of fear of failure. Hope for success, in contrast, is rooted in parental support of children's independence, such as freedom of movement without a playpen (Trudewind, 1975; Winterbottom, 1958). The finding that individuals with strong (vs. weak) hope for success depict their mothers as smaller in a figure placement test (i.e., an indirect test of family structure during childhood) further supports the assumption that less hierarchy (control, protection) stimulates children's need to master tasks on their own (Scheffer, 2005).

The power motive also bifurcates into fear of weakness (Veroff, 1957) and hope for influence (Uleman, 1972). Adler (1927) conceptualized power motives as originating in feelings of inferiority (e.g., due to small body height) that people try to compensate. Consistent with this notion, lower socioeconomic status (e.g., lower education) has been associated



with higher fear of weakness (Veroff, Depner, Kulka, & Douvan, 1980).

From the very beginning, McClelland (1975) and Winter (1973) made another important distinction by emphasizing the dual nature of power one can have over others: People realize their implicit power motive either in an antisocial or pro-social direction. The latter aims at guiding and supporting others (McAdams, 1985) and is a distinct way to enact hope for influence in Kuhl's (2013) OMT coding system (see below). Empirical findings show that the pro-social enactment of power develops in childhood contexts characterized by higher parental socioeconomic status and greater number of siblings. It also predicts diverse outcomes such as parenthood, generativity, helping behavior, and sustained volunteering (for an overview, see Chasiotis & Hofer, 2017). Fear, in contrast, does not always give power an antisocial direction but may also activate integrative, responsible enactment strategies (Kuhl, 2013).

This review shows that hope and fear are important distinctions in implicit motives, with some empirical evidence for different developmental origins and different psychosocial outcomes. However, the PSE (Picture Story Exercise) has the disadvantage that most coding systems either assess hope and fear components of just one motive (e.g., achievement; Heckhausen, 1963) or assess all three motives without differentiating into their hope and fear components (Winter, 1994). Thus, for a long time, researchers who were interested in the hope and fear components of all three motives had to apply multiple coding systems. To overcome these disadvantages, two research groups have developed alternative measures that allow capturing the hope and fear components of the achievement, affiliation, and power motive simultaneously. The Multi-Motive Grid (MMG; Sokolowski, Schmalt, Langens, & Puca, 2000) is a semi-projective measure in which pictures are presented along with a set of statements (for further details about the MMG, see Sokolowski et al., 2000). Using the MMG, Puca, Rinkenauer, and Breidenstein (2006) found, for example, that stronger dispositional fear across motives predicts more forceful avoidance movements (i.e., withdrawing the forearm from the computer screen; Puca et al., 2006).

The Operant Multi-Motive Test (OMT; Kuhl, 2013; Kuhl & Scheffer, 1999) has methodologically extended the PSE in many aspects (people briefly answer three questions in response to 15–20 pictures; e.g., “What is important for the person in this situation and what is the person doing?” rather than writing whole stories). The most important theoretical innovation is that, for each motive, five implementation strategies for enacting the motive are distinguished: self-regulated and incentive-driven *approach* (Strategies 1–2), self-regulated and incentive-driven *approach-to-avoid* (Strategies 3–4), and *avoidance* (Strategy 5). Researchers interested in approach and avoidance can measure these dimensions either on a behavioral level (Strategies 1–4 vs. 5, indicating classical hope

vs. fear components) or on a motivational level (Strategies 1–2 vs. 3–5). The OMT coding system considers theoretical advances derived from the integration of self-regulatory processes into motivation psychology (Elliot & Church, 1997; Elliot & McGregor, 2001; Heckhausen, 1991; Kuhl, 1981, 2000). In the achievement domain, for example, the four hope components have some overlap with the  $2 \times 2$  framework of achievement goals by Elliot and McGregor (2001; see also Thrash & Hurst, 2008). Extensive research on the OMT has been published by Baumann et al. (Baumann, Kaschel, & Kuhl, 2005; Baumann, Kazén, & Kuhl, 2010), Chasiotis and Hofer (2017), and Scheffer (2005).

The MDT concept of dispositional hope and fear is entwined with the approach and avoidance dimension of motivation (Gable, 2006; Thrash & Hurst, 2008) and therefore links MDT with one of the most influential approaches in motivation psychology (Elliot, 2008). It is astonishing that, although approach and avoidance motivation is a fundamental, basic, and evolutionarily based distinction, SDT has not handled it more directly. SDT postulates a natural tendency for all human beings to strive for personal fulfillment and development. A fear or avoidance component of basic needs might contradict the concept of an innate positive growth tendency. SDT theoretically considers how forms of regulation affect approach and avoidance behavior. For example, introjected regulation bifurcates into approach and avoidance subtypes, such as the pressure to avoid negative feelings versus approach positive feelings (Assor, Vansteenkiste, & Kaplan, 2009). Furthermore, studies tested fear and anxiety as consequences of lack of basic need satisfaction (Laurin, Joussemet, Tremblay, & Boivin, 2015; Yu, Li, Wang, & Zhang, 2016). However, SDT does not conceptualize the avoidance of undesired outcomes as an important source of human motivation in terms of an innate basic need to avoid.

Despite the previously discussed issues, for some years now, SDT researchers have made greater allowance for negative motivational outcomes. They argue that, for understanding the relationship between the social contextual environment and a person's well-being and ill-being, it is not sufficient to only consider the degree of basic need *satisfaction*; they acknowledge that basic need *thwarting* has an independent influence on well-being (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Rocchi, Pelletier, Cheung, Baxter, & Beaudry, 2017). Low scores on psychological need satisfaction mean that a person is unsatisfied with the degree to which basic needs are met, but they do not indicate that needs are thwarted. Need thwarting is defined as “the perception that need satisfactions are being obstructed or actively frustrated within a given context” (Bartholomew, Ntoumanis, Ryan, Bosch, et al., 2011, p. 5). Especially in the domain of sport and exercise, it has been shown that an environment that makes people feel ineffective (e.g., a supercritical coach who is demeaning of an

athlete's abilities), controls people (e.g., unexplained instructions, controlling reward and punishment), and makes people feel lonely and left out (training style that leads to envy and ill will among team players) leads to emotional exhaustion (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011), burnout (Belaguer et al., 2012), depression, and unhealthy eating behavior (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011).

If basic need satisfaction and thwarting are indeed two independent sources of well- and ill-being, is it not then plausible that they are linked with different forms of motivation? One form is directed at the achievement of need satisfaction—an approach component—whereas the other is aligned with the avoidance of need thwarting.

If we take this one step further and use the terms of the TPM (Sheldon, 2011), we extend the experiential requirement perspective by suggesting two forms of “needing”: People need to have their basic needs satisfied, and they need their basic needs not to be thwarted. With regard to MDT, the hope and fear components of motives have in common that they are forms of “wanting.” On one hand, there is *wanting to approach* a desired outcome (e.g., wanting autonomy, social relatedness, and competence) and, on the other hand, *wanting to avoid* undesired outcomes (e.g., frustration of autonomy, social relatedness, and competence). From the behavioral motive perspective, they energize behavior that leads to need satisfaction and avoidance of need thwarting. Extending the TPM (see dotted lines in Figure 1), hope and fear motives can easily be integrated at the front end of the motivational sequence. The hypotheses associated with this assumption have to be tested empirically. Do, for example, fear of rejection and fear of failure give rise to behaviors that indeed avoid the thwarting of the basic need for relatedness and competence? Moreover, do experiences of thwarting of the basic need for relatedness and competence give rise to fear of rejection and fear of failure?

Some of the developmental antecedents, arousal conditions, and behavioral outcomes of implicit motives reviewed above seem to be in line with the bifurcation in Figure 1. Contexts that actively thwart needs (e.g., parental control through strict toilet training) seem to fuel fear components (e.g., fear of failure), whereas contexts that influence the degree of need satisfaction seem to fuel hope components. Note that not only high but also low degrees of need satisfaction may fuel hope components. An avoidant attachment style, for example, originates in a developmental context in which relatedness needs are not adequately met (Mikulincer, Shaver, & Pereg, 2003). Baumann and Scheffer (2010, 2011) found that avoidant attachment style predicts more flow codings in the OMT (i.e., intrinsic, flow-oriented enactment of the implicit achievement motive; Strategy 1) when participants have the ability to restore positive affect (e.g., mastery orientation). Thus, need dissatisfaction sometimes stimulates

personality development (e.g., the active search and detection of opportunities for flow) if people have sufficient coping potential. In contrast, traits associated with increased negative affect (e.g., neuroticism) did not contribute to flow codings in the OMT. Future studies may test whether neuroticism has need-thwarting effects and fuels implicit fears in a similar way as it fuels explicit fears (Engeser & Langens, 2010).

If basic need thwarting should indeed fuel fear components and avoidance, we ask whether it fuels only passive avoidance (e.g., fear of rejection, fear of failure) or also avoidance-motivated approach behavior (e.g., affiliation; pressure to achieve/social standards of excellence). Findings from Thrash and Hurst (2008) suggest that people who set many performance-approach goals are characterized by latent fear of failure. On a behavioral level, they appear approach oriented (e.g., striving for gold), whereas, on a motivational level, they are driven by avoidance. Do need thwarting and need (dis)satisfaction have a stronger influence on behavioral or motivational levels? Furthermore, does the fear component of the power motive, fear of weakness, also contribute to the avoidance of need thwarting? Alternatively, is it, due to a lack of a conceptual overlap with the basic need for autonomy (see above), independent from basic need for autonomy thwarting? Do MDT researchers have to differentiate the autonomy motive into a hope and fear components (although empirical support for an autonomy motive itself is still weak)?

Taken together, the distinction between hope and fear components has a long tradition in MDT, makes meaningful predictions, and is more applicable through recent measurement advances (MMG and OMT). SDT researchers have just begun to consider this fundamental distinction in their concepts of need (dis)satisfaction and need thwarting but show promising dissociations so far. The present extension of the two-process model (Sheldon, 2011) displayed in Figure 1 shows how the hope and fear distinction can be considered in the integration of MDT and SDT. The model makes testable predictions and may inspire future researchers from both traditions.

### 4.3 | Implicit and explicit motivational systems

A further theoretical concept of MDT researchers for which no comparable SDT-based concept exists is the differentiation into an implicit and explicit motivational system (McClelland et al., 1989). Having found that motives measured using picture story exercises (e.g., thematic apperception test; Morgan & Murray, 1935; see also Schultheiss & Pang, 2007) are only weakly or not at all correlated with motives measured using self-reports (e.g., questionnaires), McClelland et al. (1989) proposed a model of two motivational systems, which operate independently. The explicit motivational system consists of *explicit motives*, which represent a part of people's

self-concept, and *goals* that people strive for in their lives. Both are based on conscious and cognitive processes. Included in the explicit motive system are, for example, an individual's conscious reflections about his or her values and goals, cognitive beliefs, and rational choices of what is important to strive for in one's life. The cognitive schemas associated with the explicit motivational system reflect cortical elaborations that are evolutionarily younger (McClelland et al., 1989). In contrast, implicit motives act outside conscious awareness. They are not completely inaccessible to awareness, but they are automatically elicited by natural incentives without conscious reflections. Without specific self-examination (e.g., imagery techniques; see below), they cannot be fully consciously articulated. Implicit motives are based on affects that have their origin in evolutionarily older parts of the brain (e.g., amygdala; for biopsychological aspects of motivation, see Schultheiss & Wirth, 2008).

McClelland and colleagues' (1989) assumed duality of the motivational system is supported by studies showing that implicit and explicit motives indeed differ in important aspects (Brunstein, 2008; McClelland et al., 1989) and predict different outcomes (Brunstein & Maier, 2005; Spangler, 1992; Woike, Mcleod, & Goggin, 2003). Implicit motives predict spontaneous behavior and behavioral trends over time, whereas explicit motives are associated with immediate responses to specific situations that are often based on cognitive decisions. In contrast to implicit motives, which tend to be aroused by affective incentives promising rewarding emotions, explicit motives are elicited by rational incentives including social expectations, demands, and external rewards (Koestner, Weinberger, & McClelland, 1991). Whereas implicit motives are formed starting in the first few years of life based on preverbal, affect-based experiences in socialization, explicit motives are formed starting in middle childhood and are based on verbal experiences with the social environment. Due to their inherent differences in conscious accessibility, they have to be measured using self-reports (explicit motives and goals) or indirect assessment (e.g., picture story exercises; for a more detailed description of differences between implicit and explicit motives, see Brunstein, 2008; McClelland et al., 1989).

The duality of motivational systems is highly adaptive because implicit motives provide a general orientation toward certain classes of incentives (e.g., "doing something better" goals). These incentives promise satisfaction of motive-specific affects (e.g., proud) and thus energize behavior. Explicit motives and goals, in turn, are on a more concrete level of abstraction that is closer to real behavior in terms of adjusting one's wishes and needs to the social reality. Thus, as McClelland and colleagues (1989, p. 699) stated, "When implicit and explicit motivational systems work in coalition, they are highly functional and support goal-attainment and motive satisfaction."

Whereas MDT researchers highlight the implicit character of motives and their assessment (McClelland et al., 1989; for a summary, see Schüler et al., 2015), SDT researchers do not focus on implicit processes with regard to basic needs. Also, SDT researchers might agree that implicit processes accompany explicit processes (e.g., when organismic integration happens, when the self-concept is formed, when people set goals), but, when it comes to the assessment of basic need satisfaction, SDT researchers exclusively use self-reports (e.g., Chen et al., 2015; Deci & Ryan, 2000; Gagne et al., 2003; Sheldon & Hilpert, 2012). Self-reports imply, however, that people have conscious access to their need satisfaction. Using the terms of MDT researchers (McClelland et al., 1989), the SDT measures exclusively address the explicit motivational system.

### 4.3.1 | Motive incongruence in MDT

The abovementioned statistical independence of both motivational systems (Köllner & Schultheiss, 2014; Spangler, 1992) implies that the implicit and explicit motivational system can be more or less overlapping. This is particularly thought-provoking because it paves the way for research on motive congruence and incongruence (Baumann, Kaschel, & Kuhl, 2005; Brunstein, 2010; Thrash et al., 2007). Many studies have shown that a lack of congruence between one's implicit motives and the explicit motivational system (e.g., explicit motives, goals) impairs motivation, well-being, and performance (Baumann et al., 2005; Brunstein, 2008; Hofer & Chasiotis, 2003; Hofer, Busch, Chasiotis, & Kiessling, ; Hofer, Chasiotis, & Campos, 2006; Kehr, 2004; Schüler, 2010; Thrash et al., 2007). Although incongruence may have had evolutionary functions, because it maximizes human beings' flexibility to act, it has, as reported above, severe costs, particularly for one's emotional well-being. The diametrical affective consequences have been explained by the missing rewarding quality in the goal-striving process (McClelland et al., 1989). The pursuit of motive-congruent goals (e.g., a person with a strong affiliation motive appreciates social careers, which enables them to care for others and build social relationships) allows individuals to receive motivationally relevant rewards (e.g., feeling happy when being socially related and being liked). In contrast to this *motivational gratification* (Schultheiss, Jones, Davis, & Kley, 2008, p. 972), the pursuit of motive-incongruent goals (e.g., a person with a strong affiliation motive who strives for a power-related goal) functions as a *motivational frustration* (Schultheiss et al., 2008, p. 972) because the affective experiences during goal striving are adverse to the person's real needs. Motive incongruence leads to incompatible behavioral tendencies (McClelland et al., 1989), creates a psychological conflict, works as a source of stress (see also Baumann et al., 2005), and requires volitional regulation (Kehr, 2004).

### 4.3.2 | Motive incongruence approaches in SDT

Although, as mentioned above, SDT does not include a concept that is comparable to implicit motives, a few approaches exist that directly address motive incongruence. Three SDT-based approaches provide fruitful contributions to MDT's research on motive incongruence. These are (a) the concept of self-concordance (Sheldon, 2009; Sheldon & Elliot, 1999), (b) the analysis of trait self-determination as a moderator in the implicit–explicit motive relationship (Thrash & Elliot, 2002), and (c) the assumption that basic need satisfaction in childhood leads to a better fit between implicit and explicit motives (Schattke et al., 2011).

Regarding the first approach, the self-concordance concept (Sheldon, 2009; Sheldon & Elliot, 1999) states that goals that do not fit to one's deeper personality have detrimental effects. This concept is based on the assumption that motivated behaviors vary in their degree of feeling caused by forces outside of the self (low self-concordance) or feeling caused by internal forces (high self-concordance). Self-concordance is defined as the degree to which stated goals express enduring interests and values (Sheldon & Elliot, 1999, p. 482) or, in short, whether goals fit to the “self.” According to Sheldon and Elliot (1999), the subject-oriented concept of “the self” refers to the center of agentic activity (Deci & Ryan, 1991) and therefore is a “more-or-less-stable mental construction that has the potential to take control of the biocognitive machinery in such a way as to maximize organismic need satisfaction” (p. 483). Similar to motive congruence, self-concordance is also associated with greater well-being (Sheldon, 2014).

How do self-concordance and motive congruence relate to each other? Sheldon and Schüler (2011) examined whether the congruence between motives and goals feels more self-concordant. In two of their studies, they found that participants indeed reported greater self-concordance for motive-congruent goals, which, in turn, also predicted greater attainment of those goals and well-being in one of the studies. In other words, self-concordance indicated motive–goal congruence and predicted outcomes that are well-known consequences of motive–goal congruence. However, in these studies, explicit motives (self-reports) rather than implicit motives were assessed. Sheldon, Prentice, Halusic, and Schüler (2015) found that the congruence between implicit affiliation motive and affiliation-related goals predicted greater felt self-concordance. The effects were weaker for achievement, and effects for power were not assessed. According to these studies, it indeed seems that people can feel and report that their explicit goals do not reflect their implicit motives.

Does this mean that the phenomenon of motive incongruence per se could be assessed using self-reports? MDT researchers often assess the *consequences* of motive

incongruence using self-reports (e.g., well-being questionnaires; Brunstein, 2010) and assume that at least the consequences of incongruence become conscious. However, as far as we know, there are no attempts to test whether the onset of conscious reflections occurs earlier in the temporal sequence—in other words, when the phenomenon of incongruence occurs. A related question asks how exactly the conflict (incongruence) between implicit and explicit motives is represented in the brain. Is it measurable in brain areas that are known to be associated with monitoring and evaluating cognitive conflicts (e.g., prefrontal cortex), in deeper, phylogenetically older brain structures (e.g., anterior cingulate cortex), or in both?

However, what MDT researchers do know is that the congruence between goals and one's implicit motives can be fostered by goal imagery (the perception-like mental representation of the pursuit and attainment of a goal; see Schultheiss & Brunstein, 1999), by daydreaming about achieving one's goals (Langens, 2002), and by emotion-focused fantasies about prospective goal pursuit (Job & Brandstätter, 2009). These strategies might be examples of “systematic experienced-based self-observations” that McClelland and colleagues (1989) assumed “to bring the two types of motives into alignment” (p. 700). While purely speculative, it might also be the case that asking people to indicate the anticipated self-concordance of a goal *before* goal striving rather than during the process of goal striving might also trigger the experienced-based self-observation mentioned by McClelland and colleagues (1989). It might elicit a similar mechanism (evoking a feeling of fit) that could help to identify goals that match one's personality right from the beginning.

The second SDT-based approach that is fruitful for better understanding the implicit–explicit concept in MDT is to consider trait self-determination as a moderator in the implicit–explicit motive relationship. Thrash and Elliott (2002) explored for whom implicit and explicit motives are congruent and suggested individual differences in self-determination as a moderator. According to SDT's subtheory of organismic integration (Deci & Ryan, 1985; Ryan, 1993), people achieve different degrees to which the self regulates experiences and behavior. People with high trait self-regulation know the needs of the self better and therefore have better evaluations regarding which aspects from outside the self (e.g., expectations, pressure, and learning from the social environment) fit to the self's needs.

Thrash and Elliot (2002) proposed that “individuals who are more self-determined will demonstrate greater concordance between implicit and self-attributed motives as a manifestation of the organismic integration process” (p. 733). In a study that focused on the achievement domain, the authors found that the correlations between implicit and explicit achievement motives differ depending on the degree of self-determination. The correlation for high self-determination



was significant with  $r = .40$  ( $p < .01$ ), whereas it was not significant for low and medium self-determination ( $r = -.07$ ,  $r = .25$ , respectively). In an extension of Thrash and Elliot's (2002) study, Hofer et al. (2010) tested whether the moderation effect is valid in cultures in which differences exist in the extent to which individual needs are constrained by the social environment. They found the moderation to be true in three different cultures (Cameroon, Germany, and Hong Kong).

A limit to this moderation hypothesis is that in Thrash and Elliot's (2002) study, self-determination was not a significant predictor of the avoidance component of the achievement motive (fear of failure). Furthermore, the "self-determination as a moderator" hypothesis was tested for the achievement domain, but not for the affiliation and power motive domains (as also other moderators tested by Thrash et al., 2007). Nevertheless, the implications of the results are highly interesting with regard to a central question in MDT research. This question addresses the processes that are responsible for the development of congruent and incongruent self-concepts and goal setting. From an SDT perspective on motive congruence (Thrash & Elliot, 2002), more or less successful integrative processes (as described in organismic integration theory) account for individual differences in motive congruence. However, another much more fundamental question needs to be answered before research can address the question as to what fosters the integration process proposed by MDT and whether the strategies used by MDT researchers (e.g., imagery techniques; see above) reduce motive incongruence. This fundamental question asks whether the moderation effects in the achievement domain generalize to other domains, such as affiliation and power.

The third and final approach that uses SDT concepts and motive incongruence research was chosen by Schattke et al. (2011). Using archival longitudinal data, the authors explored the early childhood correlates (assessed at age 5) of motive incongruence in adulthood (assessed at age 31). They assumed family environments that support openness and exploration of inner experiences foster motive congruence. In contrast, restrictive family environments, which focus the child's attention too much on social cues and expectations and which encourage children to suppress affective impulses, hinder motive congruence. The authors identified childhood factors (availability of the mother during critical attachment stages, mother's suppression of the child's dependent and sexual impulses, the absence of a harmonious socialization environment, and child dominance) that are correlated with motive incongruence in adulthood. Although basic need satisfaction was not directly assessed in this study, it is obvious that some child-rearing styles (encouragement to explore oneself, social relatedness provided by the presence of caregivers) support the satisfaction of basic needs for autonomy, competence, and social relatedness more than others (suppression of impulses, autonomy-restrictive styles). In accordance with the

organismic integration processes proposed by SDT researchers (Deci & Ryan, 2000), Schattke and colleagues (2011) mentioned that "the social context provides opportunities for the agentic self to create intrapersonal and interpersonal coherence by integrating new experiences and regulatory processes within one's intrinsic self" (p. 308). In other words, contextual boundary conditions affect the possibility of the implicit and explicit motivational systems to align.

In summary, three SDT-based concepts have already been considered as either a correlate of motive congruence (self-concordance; Sheldon & Elliot, 1999), as a moderator (trait self-determination; Thrash & Elliot, 2002), or as an antecedent of motive congruence (need satisfaction in early childhood; Schattke et al., 2011). It seems that the phenomenon of motive incongruence "needs" both the joint consideration and thorough exploration of interrelations of MDT and SDT concepts the most. It is a fruitful area of research on which to focus further attention. Research could include examining how the implicit and explicit motive incongruence concept can be integrated into the TPM (Sheldon, 2011) and why the congruence between implicit and explicit motivational systems predicts facets of general well-being such as life satisfaction (Hofer & Chasiotis, 2003; Hofer, Chasiotis, et al., 2006), whereas the congruence of implicit motives and corresponding basic needs only predicts domain-specific and short-term well-being (Schüler & Brandstätter, 2013; Schüler et al., 2013).

## 5 | SUMMARY AND CONCLUSION

The issues discussed above clearly support one of the three options on how to relate self-determination theory (Deci & Ryan, 1985) to motive disposition theory (McClelland, 1985). We excluded the first option, which stated that one approach could be replaced by the other with no significant theoretical losses, as well as the second option, which postulated that an integration is impossible because the approaches have completely different perspectives. Instead, we conclude that there is high agreement in important main assumptions of both approaches. Furthermore, we outlined that some distinctive characteristics of SDT and MDT are already theoretically integrated (see the TPM above), and we maintained that this integration helps us to understand complex motivational sequences that are at least partly unexplained when consulting only one approach.

In the present article, we argued that, although we are principally optimistic with regard to the integrative potential of both approaches, the theoretical and, in particular, the empirical states of such an integration are still quite thin. Specifically, we first aimed to fill the gap that the motive triad (affiliation, achievement, power) assumption in MDT does not provide a dispositional counterpart for the basic

need for autonomy by suggesting an autonomy disposition (e.g., freedom motive; origin concept). In this research domain, however, future studies showing that the freedom and origin concept indeed fulfill the characteristics of implicit motives are especially needed. Whereas this first issue fills a gap in MDT (so that it is more compatible with SDT), our second issue requires theoretical considerations in SDT. Are, for example, basic need satisfaction and basic need thwarting related to hope and fear and thus closely intertwined with approach and avoidance motivation? Can the bifurcation of motivation into an approach and avoidance motivational sequence (as suggested in Figure 1) somehow theoretically integrate into SDT? Do empirical tests support this model? With regard to the last issue outlined in our “divergent” section—the differentiation into implicit and explicit motives—we showed that the SDT-based concepts of trait self-determination (see Thrash & Elliott, 2002) and self-concordance (Sheldon & Elliot, 1999) provide good starting points to answer the remaining questions of how exactly they are related to each other empirically. Especially from a cross-cultural perspective, explicit motives as self-report measures may be problematic, as contexts may differ in response styles and answering tendencies, or introspective practices may be different (Van Herk, Poortinga, & Verhallen, 2004; Van de Vijver & Leung, 1997). On a more general note, Henrich, Heine, and Norenzayan (2010) resumed that most findings on determinants and consequences of psychological processes and behavior stem from study samples recruited in Western, educated, industrialized, rich, democratic societies (WEIRD). Research across divergent cultural contexts allows one not only to confirm but also to challenge meaningfulness of scientific knowledge by simultaneously looking for culture-specific as well as universal aspects of individuals’ mental processes and behavioral acts (Chasiotis & Hofer, 2017). Thus, if a self-report measure for “motive congruence” (e.g., Sheldon, 2014) shows predictive validity for motive congruence, the interesting question is this: Under which intraindividual, situational, and cultural/contextual circumstances does this self-report measure vary in its ability to predict, and why (see, e.g., Chen et al., 2015; Sheldon, Abad, Omoile, 2009; Zhou, Ma, & Deci, 2009)? We think this is an exciting avenue for further research, which will benefit both perspectives, and has the true potential to integrate research on motivation.

In conclusion, MDT and SDT are unique enough that equating them as the same would result in theoretical losses; however, to cast them as standing completely in contrast to each other would also discount the value of their integration. Although there are several fundamental aspects still distinguishing MDT and SDT that require further research, the ways in which they have already been integrated and the potential for further integration provide a foundation for comprehensive and exciting research on human motivation.

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## CONFLICT OF INTERESTS

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