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Social Motives and Relational Models

Empirical Studies on Drivers and Structures of Social Interaction

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Es ist nicht das Wissen, sondern das Lernen,

nicht das Besitzen, sondern das Erwerben,

nicht das Dasein, sondern das Hinkommen,

was den größten Genuss gewährt.

(Carl Friedrich Gauß)

To my family:

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List of Abbreviations

a) General abbreviations

AR	Authority ranking
CS	Communal sharing
EM	Equality matching
HMRA	Hierarchical multiple linear regression
MP	Market pricing
n Achievement	Implicit need for achievement
n Affiliation	Implicit need for affiliation
n Power	Implicit need for power
RM	Relational model
RMT	Relational models theory
SQRT	Square root
san Achievement	Self-attributed (explicit) need for achievement
san Affillation	Self-attributed (explicit) need for affiliation
san Power	Self-attributed (explicit) need for power

b) Measurement methods

IRM	Ideal Relational Model Scale
PRF	Personality Research Form
PSE	Picture Story Exercise
TAT	Thematic Apperception Test
RPS	Relationship Profile Scale
UMS	Unified Motive Scales

Abstract

The present work draws upon dual-system theories of motivation (Kehr, 2004b; McClelland, Koestner, & Weinberger, 1989; Schultheiss, 2001; Stanton, Hall, & Schultheiss, 2010) and relational models theory (Fiske, 1991, 1992) to empirically examine specific associations between individual motives and relational structures.

The aims of the present studies were (1) to establish conceptual links of specific motives and relational models, (2) to test if individual motives affect relational preferences, and (3) to examine whether different relational models elicit different types of motivation.

Based on a literature review, I analyzed theoretical descriptions of the basic relational models communal sharing (CS), authority ranking (AR), equality matching (EM), and market pricing (MP) regarding their motive content in the domains of affiliation, power, and achievement. Motive content varied significantly across descriptions of different relational models. Specific associations were found between affiliation and CS, between power and AR, and between achievement and MP. These associations supported Fiske's (1991) assumptions and served as basic hypotheses regarding the interplay of motives and models in the subsequent empirical studies.

In a series of laboratory and field studies, I tested specific interrelations between individuals' explicit (declarative) and implicit (non-declarative) motives for affiliation, power, and achievement on the one side, and preferences for the basic relational models on the other side. Across five studies, preferences for CS relations were exclusively predicted by implicit (Studies 4, 5) and explicit (Studies 2, 3, 5) affiliation motives, whereas preferences for AR relations were consistently and specifically affected by power motives, and preferences for MP were associated with agency (Bakan, 1966) motives.

As the basic relational models contain motive-specific incentives, the actual implementation of these models should elicit specific motivation, which is tuned to their respective corresponding motives. In two experiments, I assessed the motivational effects of relational framing manipulations. The results corroborated the findings obtained in

Studies 2-5: Framing relationships as CS structured resulted in affiliation motivation, while AR framing elicited power motivation, and MP framing triggered agentic motivation.

The reported studies have theoretical implications for the motivational structure of relationships, but also for the relational structure of motives. They provide first empirical evidence for specific interrelations of social motives and relational models. Moreover, they demonstrate that (re-)framing and structuring relationships according to distinct relational models motivates people in distinct ways. These framing effects are strong and persistent. Researchers and practitioners concerned with analyzing, creating, and shaping motivated social behavior could benefit from the present results and their implications.

1   Introduction

We all know, from what we experience with and within ourselves, that our conscious acts spring from our desires and our fears. […] At the same time, as social beings, we are moved in the relations with our fellow beings by such feelings as sympathy, pride, hate, need for power, pity, and so on. All these primary impulses, not easily described in words, are the springs of man's actions. (Einstein, 1950, p. 15)

Our social actions are fed by multiple springs. Research has yet to discover and combine many of these springs in order to channel them into meaningful and communicable streams of theories. Meanwhile, some of the fundamental questions regarding social motivation and behavior remain cloudy.

Why do people want to be close to friends and family members? Why do they feel comfortable when they submit to their parents, to the government, or to the will of God? Why do people strive for dominance and control over others? Why do they sometimes strive for independence and personal success? Why do they like, trust, and depend on business partners? And why do they like to make amends and place value on fairness and equality?

Answers to these questions have been given by the various disciplines of the social sciences and the humanities (cf. Bourke, 2009; Collins & Makowsky, 2009; Kruglanski & Higgins, 2007). Some of these answers are valid to date, others are not. Some of them are more universal, others are more specific. None of them is complete. This thesis is another attempt to add to these answers. It is concerned with the springs of social behavior from two integrated perspectives. First, it examines the predispositions and states that drive people to engage in coordinated social action, that is, their social motives. Second, it takes a closer look at the fundamental structures of social relations and their motivating potential. Building on these perspectives, it aims to link drivers and structures of social relations by empirically establishing and testing interrelations between individual social motives (McClelland et al., 1989; Murray, 1938) and relational models

(Fiske, 1991, 1992). Thereby, across seven empirical studies, the units of analysis are individual motives and individual relational preferences.

The goals of the present thesis are threefold: First, to provide an overview on the general associations between the concepts of motives and relational models by reviewing the existing literature. Second, to examine specific associations between distinct human motives and relational models by analyzing quantitative data obtained from a variety of samples and measures. Third, to identify and establish specific relational structures as situational cues, which are able to elicit motivation, by experimentally testing the effects of relational framing manipulations.

The central topic of this thesis is motivation. Therefore, in the first part of Chapter 2, I give an overview on the concepts of motives and motivation by reviewing the dual-systems model of motivation (McClelland et al., 1989), the two-level information-processing model of motivation (Schultheiss, 2001), motivational field theory (Stanton et al., 2010), and the compensatory model of work motivation and volition (Kehr, 2004b). In the course of this I focus on the motivational process, on the distinction between implicit and explicit motives, and on the Big 3 human social motives: the needs for affiliation, power, and achievement (Murray, 1938). In the second part of Chapter 2, I review psychological and sociological theories on the structures of social life with a special emphasis on relational models theory (Fiske, 1991, 1992) and its implications for human motivation. Relational models theory posits that people subjectively structure their social interactions in terms of four basic mental models: Communal sharing, authority ranking, equality matching, and market pricing. At the same time, it provides a framework for the study of social motivation. In the third part of Chapter 2, I integrate the reviewed motivational theories with relational models theory and derive assumptions regarding the interplay of specific social motives and relational models.

This work is the first to empirically link relational structures based on fundamental mathematical axioms to social motives grounded in nearly 100 years of psychological insight. Consequently, it leads to many interesting theoretical implications and further

empirical questions regarding the interaction of motives and models for both motivation and social psychological research and practice as well as for applied psychological disciplines.

2   Theoretical Concepts

2.1   Motivation: An Interaction of Personal and Situational Variables

From early behaviorist approaches (Hull, 1943; Thorndike, 1898; Tolman, 1932) to contemporary theories (Kehr, 2004b; Kuhl, 2001; McClelland et al., 1989; Schultheiss, 2001), the predominant conception of motivated human behavior has been that it is the result of individual dispositions and situational incentives. According to this line of theorizing, behavior is neither a consequence of personal instincts or drives alone (cf. Freud, 1938), nor a reaction to perceived environmental cues which is independent of characteristics of the perceiver (cf. Watson, 1913). Instead, dispositions interact with situational cues to shape motivation and behavior (Lewin, 1946; McClelland, Atkinson, Clark, & Lowell, 1953; Murray, 1938).

Thereby, motivation is conceived of as an actual psychological state which is a function of motives and incentives (Atkinson, 1957). It has been defined as "a recurrent concern for a goal state or condition […] which drives, directs and selects the behavior of the individual" (McClelland, 1985, p. 590) and is variable in its strength over time (McClelland, 1980). In contrast, motives are conceptualized as relatively stable dispositions to react in specific ways to affectively charged incentives (Schultheiss & Brunstein, 1999).

In the domain of human social behavior, research has focused on the "Big 3" motives need for affiliation (*n* Affiliation), need for power (*n* Power), and need for achievement (*n* Achievement), all of which are susceptible to distinct social incentives and lead to distinct classes of social behavior (Kehr, 2004b; see Chapter 2.1.5 for a detailed description of the Big 3 motives). Motive incentives are stimuli which are perceived as affectively rewarding (Beckmann & Heckhausen, 2010; Tolman, 1932). These stimuli cover a wide range of entities, from real or imagined objects to real or imagined persons, from anticipated experiences to sustained internal states. In this thesis, I use the term *relational incentive* in a broad sense for any stimulus which is (1) inherent in a relationship and (2) subjectively affectively charged.

Figure 1 visualizes the concept of the motivation process from the perspective of classic and contemporary motivation theory and research: Individual motives represent dispositions to attend to incentives which elicit specific affective states. Arousal of motives by these real or imagined situational incentives leads to positive or negative affective states which fuel motivation and eventually motivated behavior.

If, for instance, a person with a strong need for affiliation (motive) receives a text message from a close friend (incentive), he is likely to be motivated to visit the friend and talk to her face-to-face. Likewise, a person with a strong need for power (motive) would be motivated to dominate other people when they show signs of deference (incentives). A person with a strong need for achievement (motive) would frequently compare her actual performance with her past performance and to this end attend to performance evaluations, compile statistics, or engage more and more in challenging tasks (incentive).
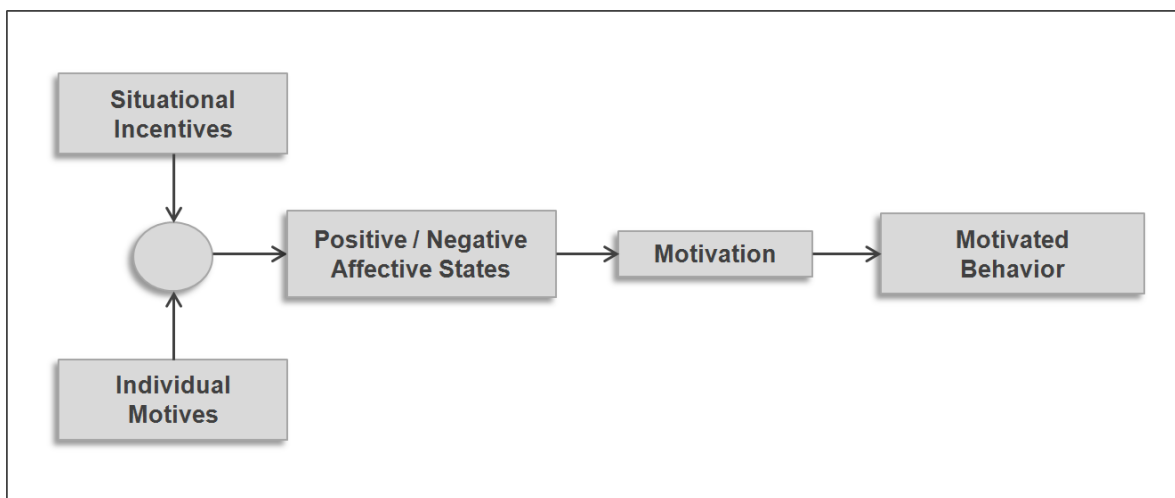
Figure 1. Basic process model of motivation (adapted from Rheinberg, 2008, p. 70).

The concept of motivation as an affectively toned state of activated motives conditioned to incentive cues was introduced by McClelland et al. (1953) in their affect-redintegration model. Recent theorizing in the field of motivation and cognition has advanced the classic motivational concepts in two ways that are important for the present work: First, it has shed light on the processes underlying the interaction of motives and incentives (Brunstein & Maier, 2005; Schmalt, 1996; Toates, 1986). Second, McClelland et al. (1989) and other work groups (Kehr, 2004b; Schultheiss, 2001, 2008; Weinberger & McClelland,

1990) stressed the distinction between explicit motives and implicit motives, which are activated by different incentives and exert effects on different classes of behavior. In the following sections, I review the dual-systems model of motivation (McClelland et al., 1989), the two-level information-processing model of motivation (Schultheiss, 2001), motivational field theory (Stanton et al., 2010) and the compensatory model of work motivation and volition (Kehr, 2004b) with a special emphasis on the interaction of the Big 3 motives and relational incentives.

2.1.1 Dual-systems model of motivation

The basic assumption of the dual-systems model of motivation (McClelland et al., 1989) is that there are two distinct motive systems which respond to different incentives and relate to different classes of behavior. Implicit motives develop in early childhood by means of affective, non-declarative learning. Therefore, they are conceptualized as non-declarative associative networks which link situational incentives and affective reactions (McClelland, 1980). Implicit motives are commonly aroused by activities, such as warm and friendly conversations or challenging tasks. As implicit motives operate outside of conscious awareness, they cannot be assessed by declarative measures of motivation, such as questionnaires and other forms of self-report measures. Instead, their strength can be assessed by analyzing the associative responses to pictorial cues (for more details, see Chapter 2.1.6). Although they are not necessarily consciously accessible, implicit motives have been shown to select, orient, and energize spontaneous behavior and long-term behavioral trends (McAdams & Vaillant, 1982; McClelland, 1965, 1980).

In contrast, explicit motives are self-attributed values, needs, goals, and personality characteristics. They correspond to self-attributed causes of behavior, to short-term choice behavior, to consciously reflected goals, and to the self-concept. They are declarative in the sense that people can reflect on them and communicate them verbally to others. Therefore, as opposed to implicit motives, they can be assessed with questionnaires and other declarative measures. As their development is dependent on the acquisition of language skills, they are shaped later in life than implicit motives

(McClelland et al. 1989; McClelland & Pilon, 1983). Explicit motives are commonly activated by social demands and task-extrinsic incentives. According to McClelland et al. (1989, p. 693), "those who score high on a self-attributed motive measure have been shown to be more influenced by salient external social demands." Based on reported empirical evidence, McClelland et al. (1989) argued that extrinsic incentives and social demands do not serve to arouse implicit motives while activity-inherent (intrinsic) incentives do not serve to activate explicit motives. This claim has been partially supported by findings in the domains of achievement (Brunstein & Maier, 2005), intimacy (Craig, Koestner, & Zuroff, 1994), and power (Koestner, Weinberger, & McClelland, 1991).

The dual-systems model of motivation received additional support from studies demonstrating that implicit and explicit motives are uncorrelated (Koestner et al., 1991; McClelland et al., 1953; Spangler, 1992; Thrash & Elliot, 2002) and that they can operate together to affect subjective well-being (Brunstein, Schultheiss, & Grässmann, 1998; Schüler, Job, Fröhlich, & Brandstätter, 2008) and volitional strength (Kehr, 2004a). The suggested differentiation between explicit and implicit motives is an integral part of recent motivation theories (Kehr, 2004b; Schultheiss, 2001).

Incorporating the dual-systems model of motivation (McClelland et al., 1989), the basic process model of motivation can be extended as follows:
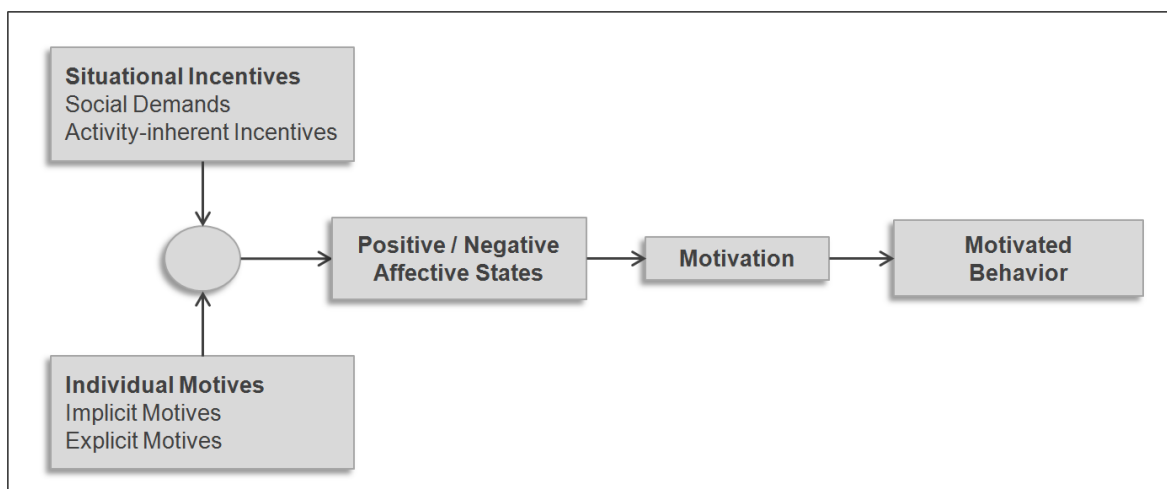
Figure 2. Extended process model of motivation (adapted and modified from Rheinberg, 2008, p. 70).

Although explicit and implicit motives have been shown to operate independently, recent research has suggested that an interaction of the two components yields incremental validity for the prediction of motivational and performance outcomes (Brunstein & Maier, 2005; Lang, Zettler, Ewen, & Hülsheger, 2012). The underlying assumption is that explicit motives channel the expression of implicit motives (Bing, LeBreton, Davison, Migetz, & James, 2007; Winter, John, Stewart, Klohnen, & Duncan, 1998). Thus, implicit dispositions are modulated by explicit traits to shape specific behaviors (Lang et al., 2012). For example, a high implicit need for affiliation could be expressed in many ways, but it is channeled by the belief of a person to "*try to be in the company of friends as much as possible*" (item adapted from the Personality Research Form, PRF; Jackson, 1984; an explicit motive measure). The channeling hypothesis received indirect support from studies on the effects of motive congruence (Brunstein et al., 1998; Kehr, 2004a).

Relationships provide a vast array of incentives for both explicit and implicit motives. On the one hand, they are governed by social rewards, rules and prescriptions, ranging from payments and favors to general taboos to specific sanctions (Fiske, 1992). Thus, relationships encompass social demands and obligations, which should serve as extrinsic incentives and therefore activate explicit social motives. On the other hand, relationships entail many joint activities and tasks which are affectively charged, such as romantic dinners between lovers, competitions among friends, or conflicts between leaders and followers. Thus, certain relational properties and activities should serve as relationship-intrinsic incentives, which are able to arouse specific implicit motives.

However, within the dual-systems model of motivation, the distinction between social-extrinsic incentives and task-intrinsic incentives is not that clear. Schultheiss (2001; Stanton et al., 2010) pointed out that this distinction is only valid for the need for achievement, but not for the needs for affiliation and power, where "social rewards such as smiles and laughter can be powerful incentives" (Stanton et al., 2010, p. 251) for implicit motives.

2.1.2 Two-level information-processing model of motivation

Building on the dual-systems model of motivation (McClelland et al., 1989) and integrating findings from cognitive and biological neuroscience, the two-level information-processing model of motivation (Schultheiss, 2001; see Figure 3) aims at delineating the differences of implicit motives regarding incentives and behavioral consequences more precisely. Its basic assumption is that motive-arousing incentives are represented in two distinct formats.
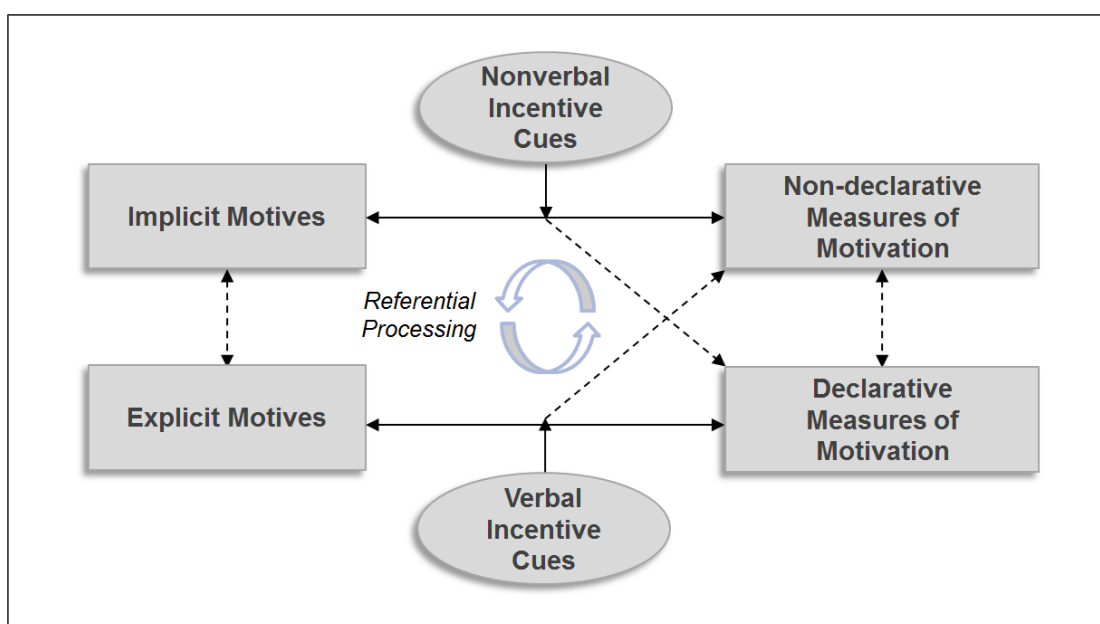
Figure 3. Two-level information-processing model of motivation. Solid lines indicate significant correlation/influence; dashed lines indicate lack of significant correlation/influence. Adapted from Schultheiss (2008).

Incentives that activate explicit motives are stored, processed, and retrieved in a verbal-symbolic format, whereas incentives that arouse implicit motives are represented in a nonverbal format. Support for this assumption comes from empirical studies. Klinger (1967) found increases in affiliation or achievement motivation measured by associative tests after participants watched an experimenter who behaved either affiliation-oriented or achievement-oriented. This increase in motive-specific arousal was present even in a condition where the participants could not hear the verbal instructions of the experimenter. In contrast, studies conducted by Schultheiss and Brunstein (1999, 2002) showed that

experimenters who assigned power goals to their participants were not able to arouse implicit power motives when they conveyed the power goals only verbally. Schultheiss and Hale (2007) demonstrated that the implicit affiliation motive responds to friendly and hostile facial displays, while the implicit power motive is aroused by facial displays signaling dominance and submission. In general, implicit motives exert effects on non-declarative or operant measures of motivation such as hormonal changes, cardiovascular responses, or response speed on performance tasks (McClelland, 1979; Schultheiss & Brunstein, 2002; Schultheiss, Jones, Davis, & Kley, 2008; Schultheiss, Wirth, Torges, et al., 2005). Consequently, tests relying on nonverbal stimulus material like the thematic apperception test (TAT; Murray, 1943), the picture story exercise (PSE; Schultheiss & Pang, 2007), or the operant motive test (OMT; Kuhl & Scheffer, 1999) have been widely used and validated for the arousal of implicit motives as well as for their measurement. Both the aforementioned empirical findings and the data obtained with picture tests do not only show that implicit motives are aroused by nonverbal cues, but also that there are motive-specific nonverbal incentives which are able to differentially arouse certain classes of implicit motives. The most convincing support for the latter comes from analyses of PSE pictures. Schultheiss and Brunstein (2001) as well as Pang and Schultheiss (2005) found distinct motive scores in the domains of achievement, affiliation, and power as a response to different pictures, thus demonstrating that PSE pictures vary in their potential to arouse specific implicit motives (for a more detailed description of picture tests, see Chapter 2.1.6).

According to the two-level information-processing model of motivation, explicit motives respond primarily to incentives provided in a verbal, declarative format. As a consequence, they respond to declarative motive measures, such as questionnaires (Jackson, 1974; Winter et al., 1998) and decisions. For instance, Brunstein and Maier (2005) demonstrated that only the explicit need for achievement affected the conscious decision to continue with an achievement-related speed task, whereas actual performance

on this speed task (non-declarative measure) was predicted only by the implicit need for achievement, which had been assessed with the PSE.

Although implicit and explicit motives are activated by different incentives and have distinct effects on behavior, they can interact with one another depending on the degree of *referential processing* between the systems (Paivio, 1986; Weinberger & McClelland, 1990; see Figure 3), which can be bidirectional: On the one hand, referential processing entails the mental translation of initially verbally processed incentives into nonverbal representations by means of imagery (Paivio, 1971, 1986; Schultheiss, Patalakh, Rawolle, et al., 2011). On the other hand, it encompasses the reverse process, that is, the mental translation of originally nonverbally processed incentives into verbal representations by means of declarative naming or labeling. Referential processing requires the use of cognitive resources (Potter & Faulconer, 1975). The ability to exert referential processing between declarative and non-declarative representations (referential competence) varies across persons (Schultheiss et al., 2011), but also as a function of the representational format: Implicit motives respond to visual cues and imaginations (cf. Rawolle, 2010) Research by Strasser, Rawolle, Schultheiss, and Kehr (2013) demonstrated that non-declarative visualized goals (visions) are aligned with implicit motives. Consequently, when declarative sub-goals are derived from these visualized goals, they are also aligned with implicit motives.

Incorporating the two-level information-processing model of motivation into the extended basic process model of motivation leads to the following conceptual model of two-level motive systems and situational incentives:
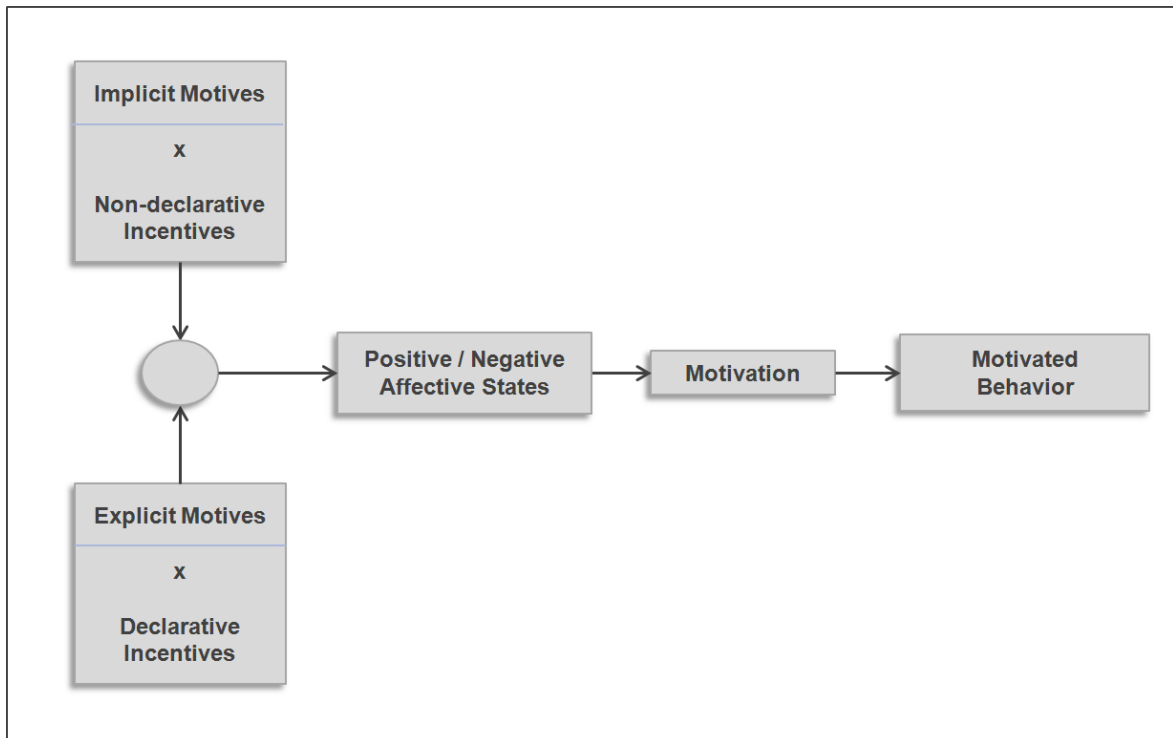
Figure 4. Conceptual model of two-level motive systems and situational incentives (adapted and modified from Rheinberg, 2008, p. 70).

The two-level information-processing model of motivation delineates implicit and explicit motives more precisely than the dual-systems model of motivation (McClelland et al., 1989) by introducing the concepts of declarative and non-declarative incentives and measures. But although incentives are obviously an integral part of the model, their content is not well defined. In other words, despite the existence of a set of established implicit motives (cf. Chapter 2.1.5), which have been examined within the framework of the two-level information-processing model of motivation, their corresponding declarative and non-declarative incentives are not specified.

2.1.3 Motivational field theory

Relationships comprise a variety of verbal and nonverbal incentives. Motivational field theory (MFT; Stanton et al., 2010) addresses the interconnection of these relational incentives and individual motives. It builds on the two-level information-processing model of motivation and on the interpersonal field theory. In the interpersonal field theory (Sullivan, 1953; Wiggins, 1979; Wiggins & Trobst, 1999), social motivation and behavior

are conceptualized as determined by the interdependent relationship of the personalities of two or more people rather than as a function of the personality of only one individual. Sullivan (1953) noted that motive arousal and need satisfaction of a person depend on complementary motivational states and relational behavior of other individuals the person interacts with.

MFT adopts the perspective of motive arousal by relational behavior. It links implicit motives and nonverbal relational incentives based on three hypotheses. First, aroused implicit motives of the sender determine her nonverbal signals. For example, aroused implicit need for affiliation leads to warm and friendly signals such as smiling and looking at the perceiver. Second, the incentive value of nonverbal signals for the perceiver can be located on different dimensions of emotional displays. Stanton et al. (2010) limited their second hypothesis to the dimensions dominant-submissive and friendly-hostile. Whereas the latter is assumed to yield incentives for the implicit need for affiliation, the former is assumed to specifically arouse the implicit need for power. Third, the incentive value of nonverbal signals depends on the implicit motives of the perceiver. For example, both the rewarding nature of friendly signals and the aversive nature of hostile signals are assumed to be moderated by the perceiver's implicit need for affiliation. The predictions of MFT were supported in several empirical studies on facial expressions of emotions (Keltner, Ekman, Gonzaga, & Beer, 2003; Schultheiss & Hale, 2007; Stanton, Wirth, & Schultheiss, 2010; Wirth & Schultheiss, 2007).

Although MFT goes beyond the motivational theories reviewed above by denoting interpersonal signals as specific incentives for social motives, it has a very narrow scope: Regarding the nature of motivational incentives, it is limited to explaining the effects of facial expressions of emotions, which in turn are limited to only two dimensions corresponding to only two social motives. Moreover, while MFT specifies the process of interpersonal motivation by implicit motives, it neglects the role of explicit motives. In addition to the nonverbally transmitted interaction signals addressed by MFT, relationships usually comprise declarative incentives. These declarative incentives include

verbal orders (for example in face-to-face interactions between leaders and followers), written sets of regulations (such as in formal contracts, codes of law, and constitutions), or explicit normative rules of conduct (for example in the Ten Commandments or in the Shari'ah; cf. Fiske, 1991). They correspond to the social demands and prompts in McClelland et al.'s (1989) dual-systems model of motivation. Thus, the motivational field that surrounds the individual consists of both non-declarative and declarative cues for implicit and explicit motives, respectively.

While MFT is not concerned with explicit motives, research in other fields of personality psychology has identified explicit traits that function in a similar way as MFT's implicit motives. For instance, self-ascribed personality traits modulate people's responses to interpersonal cues (c.f. Costa & McCrae, 1988; Kehr, 2004b; Tett & Burnett, 2003; Wiggins & Trobst, 1999). Based on empirical evidence, McCrae and Costa (1989) posited that the explicit traits extraversion and agreeableness "determine directly the amount of social stimulation preferred and the prevailing quality of social interaction" (p. 586). Moreover, in his review of interpersonal circumplex models, Wiggins (1982) identified, among other factors, the dimensions of dominance, affiliation, and achievement orientation as explicit personality traits that affect interpersonal behavior.

In sum, both personality and motivational psychologists acknowledge the interconnectedness of explicit motives (or personality traits), implicit motives, and relational incentives. The motivational field that surrounds an individual in any given situation is determined by both explicit and implicit personality traits of the interacting persons as well as by the nonverbal and verbal signals people exchange or imagine exchanging.

2.1.4 Compensatory model of work motivation and volition

The compensatory model of work motivation and volition (Kehr, 2004b) provides a coherent framework for motivation research and practice by integrating different lines of motivational psychology. Kehr adopted the distinction made by McClelland et al. (1989) between implicit and explicit motives and integrated theory and research that support the

assumption of independence between the two motive systems (Brunstein et al., 1998; Epstein, 1998; Metcalfe & Mischel, 1999). As a consequence of this independence, a person's implicit and explicit motives are either congruent or incongruent within specific motive domains and/or regarding specific activities. The function of volition is to compensate for motivational deficits, which stem from competing implicit and explicit motives: Volition is either needed to restrain inappropriate spontaneous behavioral impulses fueled by implicit motives or employed to uphold the pursuit of explicit goals which are not supported by a person's implicit motives (Kehr, 2004b).

Moreover, Kehr (2004b) further elucidated the motivational process by introducing the concepts of cognitive and affective preferences. According to the model, implicit motives are subconsciously aroused by activity-inherent incentives. Arousal of implicit motives results in affective preferences for activities and tasks which include these incentives. Affective preferences lead to non-conscious behavioral impulses and spontaneous behavior. In contrast, explicit motives are activated by cues extrinsic to the activity or task at hand. Their activation results in cognitive preferences, which lead to consciously represented rational choices and to explicit action tendencies.

To illustrate that the two conceptually independent motivational processes are elicited by different classes of situational incentives and that they lead to independent and often competing behavioral tendencies, Kehr (2004b) provided the example of "a manager high in implicit affiliation motive [who] might enjoy the companionship of a friendly, although unproductive, subordinate (intrinsic), but still defer to the social demands of his or her supervisor to increase productivity by dismissing the subordinate (extrinsic)" (p. 482). This example also illustrates that motives activated within interpersonal relationships are either explicit in nature or implicit or both, depending on the strength of a person's individual explicit and implicit motive dispositions. Thus, the model applies a similar, although broader perspective than MFT (cf. Chapter 2.1.3), as it is not limited to nonverbal interpersonal signals. Finally, it shows that the arousal of motives within interpersonal relationships can indeed lead to competing behavioral tendencies within a person.

In sum, the compensatory model of work motivation and volition was the first to differentiate two motivational systems on both the distal level of implicit and explicit motives and the proximal level of affective and cognitive preferences. Moreover, it specifies the functional relationship of motives and incentives by considering the pivotal role of individual preferences.

Incorporating cognitive and affective preferences into the conceptual model of two-level motive systems and situational incentives leads to the following model (Figure 5):
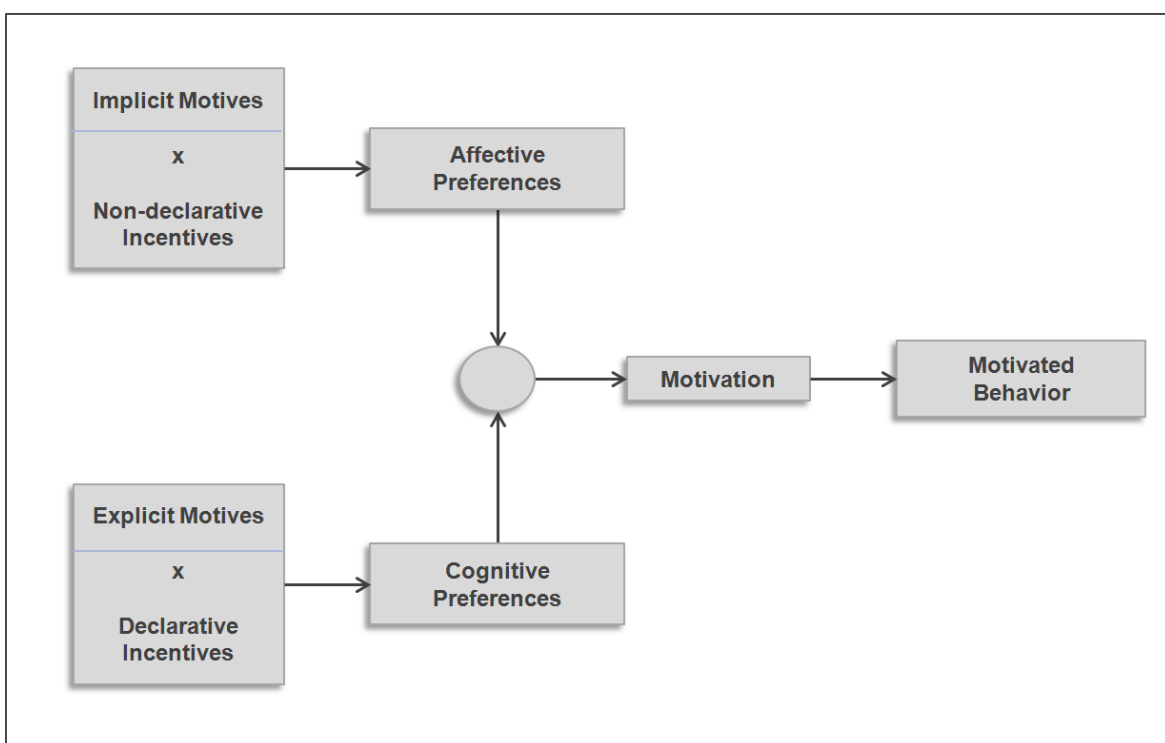
Figure 5. Conceptual model of two-level motive systems and situational incentives (adapted and modified from Rheinberg, 2008, p. 70).

For the sake of clarity and consistency, in the remainder of this thesis I will use the terminology introduced by Kehr (2004b) by denoting preferences stemming from the arousal of implicit motives as *affective preferences* and labeling preferences caused by the activation of explicit motives as *cognitive preferences*.

The compensatory model of motivation and volition is more comprehensive than the theories reviewed before. Still, they all contain different detailed aspects that serve to

explain some of the findings in the present studies. I will therefore revisit them in the discussion.

2.1.5 The Big 3 motives

Since the installment of the TAT as a device for measuring unconscious needs (Morgan & Murray, 1935), associative stories written or told in response to pictorial cues have been interpreted as a means to both arouse and assess distinct implicit motives. Although the TAT was initially used as a measure of implicit hunger motivation (Atkinson & McClelland, 1948), research interests soon moved to the realm of social motives (Atkinson, Heyns, & Veroff, 1954; McClelland et al., 1953; Winter, 1973), which are aroused by nonverbal social incentives (Schultheiss, 2008). In the domain of implicit processes, research has mainly focused on three basic motives: the need for affiliation, the need for power, and the need for achievement. Despite the abundance of empirical studies on these three motives, their corresponding specific incentives have not been given much attention yet (Stanton et al., 2010). However, one possible way to approach this unresolved issue is to draw on pictures and scoring systems developed for measuring specific implicit motives as well as on items of questionnaires developed for the assessment of corresponding explicit motives. The rationale behind this approach is that if motives orient attention to certain classes of incentives (Schultheiss & Brunstein, 2001), these incentives should be frequently described in associative thought. The scoring categories of specific implicit motives were either derived from the difference in motive content of stories between people scoring high vs. low in baseline conditions (e.g., DeCharms, Morrison, Reitman, & McClelland, 1955) or they represent refined second generation measures that combine earlier coding systems into one consistent pattern of implicit motive assessment (e.g., Winter, 1994). Moreover, pictures of second generation implicit motive measures such as the PSE have been selected and analyzed as to their potential to arouse implicit motives, which means that they are expected to contain motive-specific incentives (Kuhl & Scheffer, 2002; Pang & Schultheiss, 2005). Therefore, picture cues which consistently trigger a specific motive at the expense of triggering other

motives most likely contain strong incentives for this specific motive. In the domain of explicit motives, questionnaires in the tradition of the trait concept (Allport, 1937) have been designed to assess self-attributed motives (e.g., Jackson, 1974; Raven, 1988) and consequently the items of these questionnaires are likely to comprise declarative incentives which trigger responses that reflect explicit motives. Therefore, the same logic that applies to picture cues and scoring systems in the domain of implicit motives is also valid for verbal cues and questionnaires in the domain of explicit motives: Questionnaire items entail motive-specific incentives that hint to the specific conditions under which explicit motives are activated. In the following sections I review the Big 3 motives and provide sample incentives for both implicit and explicit motives derived from the categories and items of various assessment tools.

The need for affiliation is conceptualized as the desire to establish, maintain, or restore warm relationships with other people (Atkinson et al., 1954). It entails the desire to be loved and accepted by interaction partners and people in general (Langner & Winter, 2001; Winter et al., 1998). Persons high in *n* Affiliation gain more satisfaction from their social encounters and engage more often and more readily in friendly conversations with others than persons low in *n* Affiliation (McClelland, 1985). In addition, high *n* Affiliation individuals are better at maintaining social relations by writing, phone calling, and face-to-face conversations than people low in *n* Affiliation (Atkinson et al., 1954). Within scoring systems for implicit motives, the primary incentives for *n* Affiliation are warm and friendly emotional displays by people, joint activities accompanied by intimate feelings, negative feelings about disruption of friendly relationships, and friendly nurturant acts (Winter, 1991). Pang and Schultheiss (2005) analyzed PSE pictures as to their incentive values, thereby assigning each picture mean motive scores in the Big 3 motive domains. The assigned motive scores reflect the average frequency of domain-specific motive imagery across all persons in a validation sample. PSE pictures with the highest mean values of *n* Affiliation motive imagery (*Nightclub scene* and *Couple by river*) show relational scenes, where two or more people interact (Pang & Schultheiss, 2005). Questionnaire items

measuring explicit need for affiliation (*san* Affiliation) also consistently entail relational aspects, for example "*I try to be in the company of friends as much as possible*" (PRF; Jackson, 1984), or "*give sympathy and love to other people*" (GOALS inventory; Pöhlmann & Brunstein, 1997). Some authors argue that *n* Affiliation consists of several motive systems (McAdams, 1980; Murray, 1938; Siegel & Weinberger, 1998), the most prominent besides *n* Affiliation being *n* Intimacy (McAdams, 1980, 1989), the oneness motive (OM; Weinberger, 1992), and Murray's (1938) needs for succorance and nurturance. Research has given special attention to *n* Intimacy, which is conceptualized as a recurring preference or readiness for experiences of warmth, closeness, and communicative interactions with others (McAdams, 1992). As compared to *n* Affiliation motivated individuals, *n* Intimacy motivated persons have been shown to be more focused on close, intimate dyadic relationships (McAdams, Healy, & Krause, 1984), to listen and self-disclose more, and to be less interested in dominating others (McAdams & Powers, 1981).

The need for power is conceptualized as the "desire to have impact on others by influencing, persuading, helping, arguing with, or attacking them" (McClelland et al., 1989, p. 694; cf. Winter, 1973). Persons high in *n* Power are more likely to be promoted to high levels of management (McClelland & Boyatzis, 1982; McClelland & Burnham, 1976) and to follow successful career paths (McClelland & Franz, 1992). The implicit power motive has been differentiated into socialized and personalized power (Magee & Langner, 2008; McClelland & Burnham, 1976). The first aims at attaining and maintaining power and status and to influence others by being strong and coercive. In contrast, the latter is associated with helping, educating, fostering, and empowering other people. However, both subcategories can only be satisfied in social contexts. They are inherently relational and respond to social incentives. Within scoring systems for implicit motives, the primary incentives for *n* Power are pursuit of and failure to reach goals which have an impact on other people (Winter, 1973), forceful actions which have impact on others, control or regulation of other people, interpersonal persuasion, impressing others, and giving help

that is not explicitly solicited (Winter, 1991). The PSE picture with the highest mean value of *n* Power imagery (*Ship captain)* shows two persons (one of them in a uniform) interacting (Pang & Schultheiss, 2005). Questionnaire items measuring explicit need for power (*san* Power) also consistently entail relational aspects, for example "*I try to control others rather than permit them to control me."* (PRF; Jackson, 1984), or "*Opportunities to influence others"* (Personal Values Questionnaire, PVQ; McClelland, 1991).

The need for achievement is conceptualized as a preference for affectively rewarding experiences related to improving one's performance (Atkinson, 1957). It differs somewhat from *n* Affiliation and *n* Power in that it is not necessarily social in nature. Both *n* Achievement and the explicit need for achievement (*san* Achievement) entail social and relational aspects, but in its core, the achievement motive is elicited by situational cues which signal opportunities for doing something better, attaining self-set standards of excellence, improving efficiency and effectiveness, or avoiding personal failure (McClelland et al., 1953; Schultheiss & Brunstein, 2005). Empirical studies showed that people high in *n* Achievement choose tasks with moderate subjective levels of difficulty (Atkinson, 1957), as these tasks provide maximum information regarding the degree of one's own task-specific abilities. In addition, individuals high in *n* Achievement are more focused on goals than on people and consequently tend to converse less with interaction partners than individuals high in *n* Affiliation and individuals high in *n* Power. But they also frequently express impatience with people who lack efficiency and are to some extent dependent on task-related feedback provided by their social environment (Andrews, 1967; Jacobs & McClelland, 1994; McClelland & Boyatzis, 1982). Within scoring systems for implicit motives, *n* Achievement is often divided into the components *hope of success (HS)* and *fear of failure (FF).* The primary incentives for *HS* are predominantly non-social: Positive self-set achievement goals, expectations of success, instrumental activities to succeed (Brunstein & Heckhausen, 2008), and goals or performances that are described in ways that suggest positive evaluation (Winter, 1991). However, they also comprise social activities: Praise and rewards for good performances delivered by other persons

(Brunstein & Heckhausen, 2008), mentions of winning or competing with others, and unique achievements unprecedented by other people (Winter, 1991). Similarly, incentives for *FF* are on the one hand non-social intentions and instrumental activities to avoid failure, expectations of failure (Heckhausen, 1980), and negative feelings directed at failure, doing badly, or lack of excellence (Winter, 1991), but on the other hand socially relevant cues such as being criticized by others for bad performance or lack of abilities (Brunstein & Heckhausen, 2008), and negative feelings concerned with social comparisons (Winter, 1991). In accordance with the procedures used by Pang and Schultheiss (2005), Pang (2010) tested a series of achievement-arousing pictures taken from different sources with regard to their achievement cue strength. Interestingly, the picture with the highest mean value of *n* Achievement imagery (*Gymnast*) is followed by two pictures showing social interactions (*Soccer duel* and *Skaters*). The PSE picture with the highest mean value of *n* Achievement motive imagery (*Women in laboratory*) also features a social situation. In contrast, questionnaire items measuring *san* Achievement are most often directed at task-related non-social incentives, such as "*personally producing work of high quality*" (PVQ; McClelland, 1991) or "*continuously improve myself*" (GOALS inventory; Pöhlmann & Brunstein, 1997).

In sum, the need for affiliation and the need for power are inherently social motives, which show pervasive effects on social behaviors within relationships and respond primarily to social incentives. This has been shown for both implicit and self-attributed motives. In contrast, the need for achievement responds primarily to task-intrinsic incentives, which are not necessarily social. However, it also entails some social aspects, particularly with regard to competition, criticizing other people and social comparisons. Declarative and non-declarative measures of motive strength show comparable patterns of motive incentives within specific motive domains. As the assessment of implicit and self-attributed motives is important for the interpretation of the empirical results in this thesis, in the last chapter on the motivational foundations I will review the history and state-of-the-art of motive measures.

2.1.6 Assessment of implicit and explicit motives

As evident from the preceding theoretical discussion, implicit and explicit motives are uncorrelated, respond to different categories of incentives and are assessed by different classes of tests. Historically, however, the development of measurement tools and the development of theoretical assumptions concerning implicit and explicit motives have been intertwined (McClelland, 1987; Murray, 1943; Pang, 2010; Schultheiss, 2001; Winter, 1999). Regarding implicit motive measurement, research has relied on content-coding methods in the tradition of Murray's (1938) *TAT*, whereas regarding explicit motive measurement, research has drawn on questionnaires in the tradition of the trait concept (Allport, 1937).

The basic procedure of content-coding methods is that trained coders analyze oral or written responses to questions, pictures, or naturally occurring incentives (Pang, 2010) in terms of motive imagery. Coding categories of motive imagery are either derived from experimental studies (cf. McClelland et al., 1953; McClelland et al., 1989) or through deductive reasoning (cf. Heckhausen, 1963). The main reason for this time consuming and labor intensive procedure is that this methodology is open-ended, nonreactive, and not prone to social desirability effects or demand effects (Pang, 2010), as opposed to questionnaire measures of motives. McClelland summarized the major reasons for the use of content-coding measures as follows: "A scientist cannot believe what people say about their motives" (McClelland, 1987, p.11). Therefore, in order to assess people's implicit motives, researchers have to draw on implicit, non-declarative assessment tools. In contrast, the assessment of explicit motives can be achieved via declarative measures.

The content-coding of associative stories as a means to analyze implicit motives has been criticized for methodological concerns (cf. Lilienfeld, Wood, & Garb, 2000). Specifically, Entwisle (1972) reported low internal consistencies of TAT measures of *n* Achievement. She concluded that TAT measures lack validity and are unable to predict performance outcomes. Fineman (1977) compared different projective tests and questionnaires for the assessment of *n* Achievement. He found low convergent validity

between projective tests and questionnaires as well as between different projective measures. Based on their large-scale multitrait-multimethod analysis of psychological measurement tools, Campbell and D.W. Fiske (1959) criticized the validity of projective tests like the Rorschach test (Rorschach, 1942) and the TAT (Morgan & Murray, 1935) in general. Even McClelland et al. (1953) acknowledged that the TAT showed low reliabilities in their studies, meaning that participants' motive scores differed from one picture to another to a great extent, even though the inter-rater-reliability of different coders analyzing the same picture stories was excellent.

Atkinson (1981) attributed the TAT's low internal consistency to a periodic change in motive satisfaction and motive arousal during the writing process (*dynamics of action model*; Atkinson & Birch, 1970). Atkinson, Bongort, and Price (1977) used the dynamics of action model to simulate motive expression during the TAT writing process. They demonstrated that a participant's motive expression over time is a function of the participant's dispositional motive and the incentives present in the TAT pictures. Thus, part of the low internal consistency of the TAT could be attributed to the natural ebb and flow of motive arousal and motive satisfaction. Schultheiss, Liening, and Schad (2008) demonstrated that participants' motive scores for *n* Affiliation, *n* Achievement, and *n* Power were stable over time and re-test reliability of the Picture Story Exercise (PSE; a picture-based measure of implicit motive strength derived from the TAT; cf. Pang & Schultheiss, 2005; Schultheiss & Brunstein, 2001) was indeed satisfactory ($r = .21$-$.40$), despite low internal consistency of the test. Finally, a meta-analysis of PSE retest-reliabilities by Schultheiss and Pang (2007) showed average stability coefficients of .25 (test-retest interval: ten years) to .71 (test-retest-interval: one day). In their comprehensive review of implicit motive assessment techniques, these authors concluded that ""implicit motive scores are moderately stable over time and that stability decreases with increasing retest intervals at a rate similar to that observed for questionnaire trait measures" (Schultheiss & Pang, 2007, p. 326).

Despite the criticism by early theorists (see above), implicit motives are able to predict a broad range of behavioral outcomes and psychological states, from depressive symptoms (Schultheiss et al., 2008) to subjective well-being (Brunstein et al., 1998), from self-control (Gröpel & Kehr, 2013; Kehr, 2004a) to managerial success (McClelland & Boyatzis, 1982), and from entrepreneurial activities (McClelland, 1965) to political and historical consequences (Winter, 2002). Recent research activities have expanded the field of content-coding methods to hormonal release (Schultheiss et al., 2004; Rawolle, 2010; Schiepe-Tiska, 2013), social cognition and aggression (Zurbriggen, 2000), and conflict escalation (Langner & Winter, 2001). In sum, there is now ample evidence for the predictive validity of implicit motive measures.

In recent years, most of the research on implicit motives has made use of scoring systems which Lang and colleagues (2012) term *second-generation measures* of implicit motives. Like many of the older scoring systems, they still rely on coding motive imagery as a response to pictorial cues, but they avoid some of the major problems of early tests (Pang, 2010): First, they are based on integrated scoring systems which incorporate the Big 3 motives in a single manual, thus allowing for clear-cut distinctions between the major motives. Second, they include or allow for a pre-selection of picture cues which have been analyzed as to the strength of their motive incentives (e.g., Kuhl & Scheffer, 1999; Pang, 2010; Pang & Schultheiss, 2005; Schultheiss & Brunstein, 2001). Third, they are more efficient than first-generation measures, as participants are instructed to write only short descriptions (OMT; Kuhl & Scheffer, 1999), or limit the time frame in which stories should be written (PSE; Koestner & McClelland, 1992; Schultheiss & Pang, 2007). Fourth, the retest reliabilities of these measures are comparable to recently developed explicit trait questionnaires (compare Schultheiss & Pang, 2007; Roberts & DelVecchio, 2000). In the majority of the present research, Winter's (1991) scoring system for motive imagery in running text was administered to the PSE. That is, fantasy stories written in response to pictures taken from Murray's (1943) original TAT set were analyzed as to the Big 3 motives by independent coders following the procedures suggested by Pang and

Schultheiss (2005). In the first study of this thesis (see Chapter 3.2), I had Winter's (1991) scoring system applied to the descriptions of distinct relational structures in a set of scientific papers.

Concerning the Big 3 motives, both motive-specific and broadband content scoring systems have been developed (Smith, 1992). In the domain of achievement motivation, McClelland et al. (1953) developed a coding system based on seven distinct categories, including *nurturant press* (*Nup*), a category that has later been incorporated into *n* Affiliation and *n* Power scoring domains (e.g., Winter, 1991). Heckhausen (1963) created a scoring system for *HS* and *FF,* which has been widely in use ever since. In the domain of power motivation, Winter (1973) created a comprehensive scoring system, which he later integrated into his Manual for Scoring Motive Imagery in Running Text (Winter, 1991; 1994). In the domain of affiliation motivation, the first scoring manual was introduced by Heyns, Veroff, and Atkinson (1958). McAdams (1980) developed a scoring system for the intimacy motive (*n* Intimacy), which he contrasted to *n* Affiliation. With this measure, McAdams sparked a controversy about the duality of *n* Affiliation (McAdams, 1992; McAdams & Constantian, 1983; Weinberger, Cotler, & Fishman, 2010). In recent research on affiliation motivation, *n* Intimacy and *n* Affiliation have been somewhat confounded again, mostly due to the widespread use of Winter's (1991) scoring system (cf. Weinberger et al., 2010).

As explicit motives are consciously represented (see Chapter 2.1.1), they can be assessed by self-report measures, usually in the format of questionnaires in which participants are instructed to respond to statements or questions. In contrast to implicit motive measures, the answer format of explicit questionnaires is closed. In the tradition of classic test theory (Lord & Novick, 1968), the sum scores of several items are supposed to be a reliable and valid proxy of the explicit motives in question. The answer format is either forced choice or continuously modeled by Likert scales. In the present research, I administered the Personality Research Form (PRF; Jackson, 1984) and the Unified

Motive Scales (UMS; Schönbrodt & Gerstenberg, 2012) to assess the explicit motives *san* Achievement, *san* Affiliation, and *san* Power.

The Big 3 motives represent broad, but distinct categories of the individual drivers of human social life. Each of the three motives is in itself an abstraction of a set of more concrete motives. This is especially true for explicit motives, which can manifest themselves in various goals and sub-goals. But it is also true for implicit motives, as evident from the historical development of research on each of the three social motives. Their categorization into implicit and explicit motives has shed a bright light on the causes and consequences of social action. Their measurement has been refined to a point that allows clear-cut distinctions between the two levels as well as between categories and subcategories of implicit and explicit motive dispositions. Considering the widespread knowledge that has been accumulated over the years on both explicit and implicit motives, it is surprising that motivation researchers have paid so little attention to the structures of the domain in which these motives unfold their potential: Social life and the incentives it provides for specific human needs (Stanton et al., 2010). In particular, no attempt has been made so far to empirically test the interrelations between distinct social structures and well-established classes of motives.

In the following sections, I will review interpersonal theories on human personality and motivation, then focus on relational models theory, which has already established some theoretical links between motives and structures of social life, and in the end integrate the theoretical concepts by formulating and testing hypotheses on the interrelations of motives and models.

2.2 Theories on the Structures of Social Life

"Despite the nominal importance theorists have ascribed to motive-specific incentives, their exact properties have remained strangely undefined" (Stanton et al., 2010, p. 245).

2.2.1 Psychological theories on human relationships

While systematic research on incentives for social motives has been scarce (but see Schultheiss & Hale, 2007; Schultheiss, Pang, Torges, Wirth, & Treynor, 2005), psychological theories on the interplay of personality dispositions and interpersonal behavior trace back as far as 1902. In his looking-glass self model, Cooley (1902) regarded the self as a reflection of the particular relationships one actually engages in. "A man will boast to one person of an action - say some sharp transaction in trade - which he would be ashamed to own to another" (Cooley, 1902, p. 183). Cooley theorized that the self, which includes needs and values, is created and modified by social interactions throughout the lifespan.

Karen Horney (1937) posited that people relate and interact with one another by choosing one of three different courses of action: First, they can move towards others, thereby showing dependent and compliant behaviors. Second, they can move against others, thereby trying to dominate others. Third, they can move away from others, thereby searching for autonomy and self-reliance. By incorporating such goal-directed behavior, Horney's three modes of relating to other people show close conceptual proximity to both psychological theories on human motives and sociological theories on human relationships (see Chapter 2.2.2).

In his social learning theory, Rotter (1954) stressed the interaction of social incentives and human needs to shape interpersonal behavior. Out of his six social needs, five clearly refer to relational structures: Affection is learned in friendly and trusting relationships. It is the desire to be accepted and to be held in friendly regard. Protection-dependence refers to authoritarian structures. It is the desire to be kept from harm by others and to be fostered by them. Recognition-status is learned in peer-relationships as well as in

authority relationships. It is the desire to excel and to be recognized by others for what one is and what one has achieved. Dominance is also learned in peer relationships and in authority relationships. It refers to the desire to be in control and to exert power over others. Finally, independence is the desire to be free from the control of others. It is learned by a transition between authoritarian relationships and autonomous decisions. The sixth need, physical comfort, which is the desire to avoid pain and discomfort and to strive for physical security and well-being, is not necessarily relational. Rotter posited that these needs represent preferences for specific classes of incentives. These preferences are learned via positive and negative reinforcement in one's relationships. This conception is in line with Murray (1938), who conceptualized motivation as the product of individual needs and environmental press.

While Rotter's (1954) theoretical focus lied on reinforcement and Murray's (1938) emphasis was on individual needs, Sullivan (1953) stressed the importance of an individual's social context. He assumed that human personality, including needs and learning experience is developed within and by concrete interactions. Based on this concept, Leary (1957) introduced the interpersonal circumplex model. It represents a circular arrangement of personality characteristics that are important in interpersonal behavior. The primary dimensions of this model are hostile-friendly and dominant-submissive. These dimensions were revisited in Stanton et al.'s (2010) motivational field theory of the incentive value of nonverbal signals of emotions, which specifically links implicit motives and relational incentives (see Chapter 2.1.3).

2.2.2 Theories outside the psychological box

Outside of the field of psychology, a vast number of philosophical, economic, and sociological theories have been concerned with antecedents, structures, and consequences of relational structures and their interconnections. It is beyond the scope of this thesis to provide a comprehensive or even balanced account of these theories. Still,

there is a line of modern and postmodern theories which have been explicitly concerned with relational structures and their motivational implications.

For example, Weber (1916) introduced traditional, charismatic, and rational-legal legitimation of social order within human society. He assumed that the individual's preference for traditional legitimation stems from childhood experiences of commensal sharing of resources (e.g., food, shelter) in household communities and actions of other persons which are perceived as affiliative and caring. The preference for power structures based on charismatic leadership is rooted in respect for and loyalty towards people seen as superior. Thus, according to Weber, charismatic leadership is only legitimized if both leader and followers perceive their authority relationship as rightful. Rational-legal legitimacy of social order is rooted in a desire to establish rules by contracts with the corresponding aim of jointly achieving ideal or concrete goals. Although these contracts are mutually binding, all stakeholders enter into them on a voluntary basis in order to jointly promote their common aims.

Specifically in the domain of social exchange, Polanyi (1944, 2001) distinguished four behavioral patterns regarding resource allocation: Householding, redistribution, reciprocity, and market exchange. Householding refers to social systems in which distinct units such as families or municipalities produce goods and distribute them among their members according to individual needs and without the existence of a central authority. Thus, resource allocation is based on solidarity and belonging. In contrast, societies characterized by redistribution include a central entity which controls the flow of resources and distributes goods and commodities according to its judgment. A society that applies the principle of reciprocity attends to exchanges based on symmetry and balanced give and take relations. Finally, in market exchange societies the market governs social exchange processes and the allocation of resources.

A broader perspective was applied in Blau's (1964) social exchange theory. Blau posited that social structures can best be understood by analyzing a set of fundamental associations between people. These fundamental associations are social attraction,

power, and social exchange. Social attraction stems from the need for acceptance in intrinsically rewarding attachments, such as friendship or family. It is closely associated with need for intimacy. Power is conceptualized as both a social reward and a need for control over resources. It leads to differentiation of ranks and hierarchical order of elements (people, departments, organizations, nations) within social structures. Social exchange means associations governed by reciprocity, where people give and take benefits based on mutual trust, ingratiation, the exchange of favors, and equality concerns. Blau contrasted these categories of social associations from strictly economic exchange in arguing that the former aims at creating intrinsically rewarding bonds between people which correspond to their needs for affiliation and control over others, whereas the latter aims at establishing extrinsically valued instrumental associations.

Bakan (1966) distinguished two basic "modalities of existence […]; agency for the existence as an individual, and communion for the participation of the individual in some larger organism in which the individual is part" (Bakan, 1966, p. 14). Accordingly, he differentiated a need for repression, mastering, and dominance from a need for oneness, inclusion, and cooperation. Woike (1994; Woike, Lavezzary, & Barsky, 2001) posited that this distinction corresponds to the Big 3 motives of *n* Power and *n* Achievement on the one side, and *n* Affiliation and *n* Intimacy on the other side, in that "agency refers to the need for autonomy, instrumentality, and dominance in relation to others; communion refers to the need for relationships, interdependence, and connection with others" (Woike et al., 2001, p. 936). Woike and colleagues (2001) thus directly linked modes of relationships to social motives.

Clark and Mills (1979; Mills & Clark, 1982, 1994) built on Bakan's (1966) distinction within their theory on communal and exchange relationships. In communal relationships, individuals tend to their mutual needs without keeping track of costs and benefits. In exchange relationships, individuals are oriented towards expectations of reciprocity and future benefits. In order to assess individual preferences for communal relationships, Clark, Oulette, Powell, and Millberg (1987) developed a scale measuring the (explicit)

need for engaging in communal relationships, which includes items such as "When making a decision, I take other people's needs and feelings into account". In addition, Mills and Clark (1994) developed a scale measuring (explicit) exchange orientation, which comprises items like "It's best to make sure things are always kept 'even' between two people in a relationship". Clark and Mills (1979) thus not only assumed that there are distinct modes or patterns of relating to other people, but that there are also individual preferences or needs for these distinct modes.

2.2.3 Relational models theory

2.2.3.1   Overview

Relational models theory (RMT; Fiske, 1991, 1992) is a framework for research on social cognition and action. It builds on the psychological and social theories described in the previous chapters, but extends the scope of them, while at the same time specifying the processes underlying relationship formation and maintenance. In its core, RMT posits that relationships are initiated, cognized, categorized, maintained, and evaluated in terms of a combination of four basic mental models.

Within the communal sharing (CS) model, people are viewed as undifferentiated and belonging to the same equivalence class. In authority ranking (AR), people are cognized as hierarchically ordered and their status as defined by superior and subordinate positions. In equality matching (EM), people focus on meaningful differences and balanced in-kind reciprocity. In market pricing (MP), relationships are oriented on a common metric, allowing for the assessment of proportionality and cost-benefit analyses.

In any relationship between two or more people, both individual preferences and cultural implementation rules interact to determine which models are applied, which model is predominant, and which kinds of behaviors are seen as appropriate (Fiske, 1992). If implicit (unconscious) and explicit (conscious) preferences for specific relational structures are met by a given relationship, this relationship is seen as intrinsically rewarding. At the same time, the specific incentives of the relational structures given in a relationship evoke

emotions, which fuel affective preferences for or against the relationship. Moreover, culturally prescribed implementation rules for relational structures lead to constant evaluation of the relationship with regard to (a) shared mental models of how one should coordinate social action and (b) norms about moral behavior within the relationship (Fiske & Haslam, 2005; see Figure 6).

Thus, while RMT acknowledges that relationships are complex structures determined by congruent or competing preferences as well as moral and cultural regulations, the theory serves to disentangle this complexity by reducing it to specific combinations of just four basic models. Properties and unique characteristics of these models are reviewed in the following chapters. The process of relationship formation and maintenance can be depicted as follows (see Figure 6).
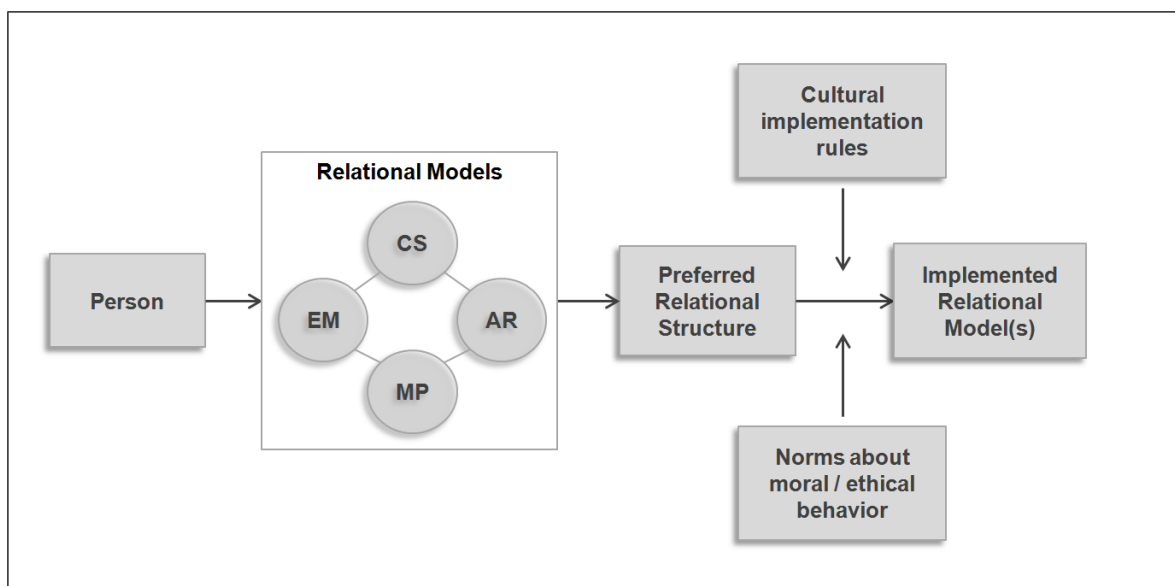
Figure 6. Illustration of the process of relationship formation according to RMT. The combination of implemented relational models in a given relationship is dependent on personal preferences for relational models, on norms, and on cultural rules of conduct. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.

To further illustrate this process, consider a relationship between an employee and her supervisor. The predominant model in this relationship is one of authority and deference.

It is largely prescribed by the organizational culture and the formal labor contract. Consequently, when it comes to business-related decisions and the allocation of work, the supervisor will take precedence over the employee. At the same time, the employee is loyal to the supervisor and respects her decisions (AR).

However, their relationship entails other models as well. For example, both may view themselves as equivalent members of the same department and therefore try to share resources when the other needs them or share secrets whenever possible (CS). The supervisor may even prefer to allocate resources equally and take turns with her employee regarding certain tasks (EM), unless she is forced by company regulations to do otherwise. Thus, whenever there are no clear moral or cultural rules, members of a relationship will try to realize their preferred relational models and shape their relationships according to their personal needs and beliefs.

In addition, company rules may not strictly prescribe an AR model for all interaction situations. Both the employee and her supervisor could have access to a pool of office equipment, which is provided by the organization and distributed according to need (CS). Thus, both the employee and her supervisor share some goods without keeping track of who gets how much and without considering some sort of precedence of the supervisor. Furthermore, an Equality Act may be established in the organization, granting both supervisor and follower the same rights and obligations in many ways (EM). Finally, when the supervisor and her employee engage in salary negotiations, both of them act in their own interest and calculate personal costs and benefits (MP). The order within their authority relation may sometimes even be reversed: The supervisor may consider her employee an expert in a certain domain and consequently respect and follow her decisions within the scope of this domain (AR).

2.2.3.2   Properties of relational models

On the most abstract level, the basic relational models represent formal axiomatic structures between social entities. That is, each relational model can be viewed as a

mathematical set defined by meaningful relations and operations. The formal structures of the basic relational models are easy to grasp for most social scientists as they correspond to the four classic scale types introduced by Stevens (1946). CS exhibits the properties of an equivalence relation and thus resembles Stevens' nominal scale. AR relations are defined by linear ordering of persons or other social entities and therefore can be compared to ordinal scales. EM relations show the properties of an interval scale, whereas MP relations entail features of a ratio scale. The structures of the models are clearly distinct, as operations and relations which are meaningful in one type of model have no meaning in another. For example, in an EM relationship, both size and direction of intervals between people are meaningful. It is important who is indebted to whom and differences in reciprocal benefits are recorded. In contrast, in an AR relationship, the size of the difference between ranks is not crucial. It is only important who is in control and who is not. Likewise, in CS all entities are equivalent, so that ranking them would violate the structure of the relationship and assessing differences would make no sense. Besides these formal properties, the basic relational models entail many other specific features when manifest in interpersonal relationships. These features are described in more details in the following chapters.

As evident from the example in Chapter 2.2.3.1, basic relational models can refer to some relationship as a whole or to some specific aspect or operation of a relationship. For example, a team leader, who has both formal and informal authority over her subordinates (AR as the predominant model defining the relationship) could distribute bonus payments among his team members according to their needs (CS), according to seniority (AR), according to a turn-taking principle (EM), or according to their performance (MP). Whether the subordinates view the chosen distribution strategy as fair or not depends on their relationship to the team leader as well as on the relational models between the team members themselves. In the end, the interpretation of the team leader's behavior as moral and rightful on the one side, or as a moral transgression on the other side depends on each team member's mental comparison of the ideal relational model he or she would

apply in this situation and the perceived implemented relational model (Giessner & Van Quaquebeke, 2010; Rai & Fiske, 2011). This leads to an important characteristic of relational models, which makes them attractive for psychological research.

Relational models are conceptualized as *mental models* of relationships. That is, although observed on the level of social relations, they unfold their motivational potential on the individual level. Evidence for the assumption of the discrete and universal nature of these mental models (Fiske, 1992) comes from many empirical studies in diverse fields of the social sciences. Haslam (1995) as well as Haslam and Fiske (1999) had participants rate their own interpersonal relationships on items measuring relational models. Exploratory (Haslam, 1995) and confirmatory (Haslam & Fiske, 1999) factor analyses revealed a four-factor model of mental organization of personal relationships. These factors represented the basic relational models. Haslam and Fiske (1992) had participants classify their interpersonal relationships by free sorting as well as similarity ratings. They analyzed the classifications according to five different relationship taxonomies: Communal vs. exchange relationships (Clark & Mills, 1979), social motivational orientations (MacCrimmon & Messick, 1976), resource classes (Foa & Foa, 1974), role expectations (Parsons & Shils, 1951) and RMT. RMT predicted the clustering best, exhibiting significant differences in model fit as compared to communal vs. exchange relationships and resource classes. In another study, when the participants freely recalled their acquaintances, relational models predicted the order of recall better than gender, age, and race of the participants' acquaintances did (Fiske, 1993). Fiske, Haslam, and S.T. Fiske (1991) studied social errors in which persons are accidentally substituted (e.g., misnamed, misremembered, or confused with one another). Results showed that people tend to substitute persons with whom they have the same relational model rather than persons with whom they have different relational models. The finding that relationship similarity predicted frequency of social errors held even after regressing out similar age, same sex, same race, and sound-similarity of names. McGraw, Tetlock, and Kristel (2003) used relational framing to endow objects with different relational properties, e.g. a pen acquired

in market exchange with a salesclerk vs. a pen given to participants by one of their closest friends. Relational framing influenced both participants' minimum selling prices for the objects and their emotional reactions to offers to purchase these objects (see also McGraw & Tetlock, 2005). Giessner and Van Quaquebeke (2010) posited that the perception of ethical leader behavior results from expectations and transgressions of what is perceived as appropriate in terms of shared relational models. Vodosek (2009) found correlations between people's personal values of individualism and collectivism (Triandis, 1995) and their preferences for specific relational models. Biber, Hupfeld, and Meier (2008) reported correlations of specific personal values (Schwartz, 1992) with both preferences for relational models and actual construal of relationships conforming to specific relational models.

According to RMT, relationships are perceived as inherently rewarding (Fiske, 1991), independent of their specific structures. Each relationship manifests itself in a variety of behaviors and situations. Features of these behaviors and situations are perceived and interpreted as incentives for motivated action. Likewise, each basic relational model has specific properties that can serve as incentives for motivated behavior. The following sections are concerned with the basic relational models and their unique properties. For each model, I will briefly review its unique formal structure, the nature of exchange processes within the model, the organization of work and social contribution according to the model, social influence within the boundaries of the model, conflict arising from and within the model, and motivational implications of the model. The models are described in more detail by Fiske (1991, 1992) and Haslam (2004).

2.2.3.3   Communal sharing

Communal Sharing is an equivalence relation with the properties reflexivity, symmetry, and transitivity. Individuals or groups in CS relations view each other as undifferentiated and belonging together. Consider, for example, a communal dining activity of a family. Every family member eats with him or herself (reflexivity). In addition, if the father eats

with the son, then the son eats with the father (symmetry). Finally, if the son eats with the father and the father eats with the mother, then the son eats with the mother (transitivity). In CS, resources are pooled and every member of the CS group can freely take what they need and give what they can. Consequently, there is no individual ownership of resources. Everything belongs to all. In order to get one's share in CS, it is sufficient to belong to the group, but it is not necessary to contribute to the group's resources. Work relationships structured according to CS are characterized by collective responsibility for given tasks, absence of individual assignments and individual monitoring, as well as sharing of resources based on the needs of the group members. Conformity is the primary source of social influence. People in CS relationships share a desire for oneness and derive their identity from belonging to the group. Thus, there is a strong urge to conform to group norms and shared values. Conflict within CS groups arises if some people do not share the common values of the group. Thus, pressure on deviants and ingroup-outgroup categorizations are the manifestations of CS conflicts. Extreme cases of CS conflicts are racism, ethnic cleansing, and genocide. Thus, the most abominable criminal acts in human history were carried out in a CS frame. On the other side, CS relations are built on generosity, caring, kindness, and altruism. They are formed and maintained by a need to belong and to affiliate with other persons in a friendly and enduring way. According to Fiske (1991, 1992), the motivation to engage in CS relationships closely corresponds to Murray's (1938) needs for affiliation, succorance, nurturance, and intimacy.

2.2.3.4   Authority ranking

Authority Ranking is a linear ordering in which ranks are defined and all elements can be compared and ordered along some dimension. It therefore must entail the properties reflexivity, transitivity, antisymmetry, and completeness. For example, in a hierarchy of people, Adam's rank is at least as high as his own (reflexivity). If Adam's rank is at least as high as Bernard's rank and Bernard's rank is as least as high as Carl's rank, then Adam's rank is as least as high as Carl's rank (transitivity). Furthermore, if Adam's rank is

as least as high as Bernard's rank and Bernard's rank is as least as high as Adam's, then Adam and Bernard are the same person (antisymmetry), or else not in an AR relation. Finally, for any two of them (Adam, Bernard, and Carl) rank order must be defined, that is any subset of them must be comparable as to their rank (completeness). In AR relations, resource allocation is governed by rank. Superiors take what they want or receive tributes. At the same time, they care for the needs and the protection of their inferiors. AR relations are built on reputation and status. Work relationships structured according to AR are characterized by control processes, directives, obedience, and a clear reporting structure. Social influence is exerted via coercion, prestige, and charisma. Subordinates respect and defer to their leaders. Both leaders and followers acknowledge the legitimate power of some individuals over other individuals and feel the urge to preserve the given order. Conflict and aggression within AR relationships arises when someone challenges the authority of another individual. Extreme manifestations of conflict and aggression within AR relations are tyrannicide as a response to inadequate treatment, assassination of political opponents, and wars to maintain or expend one's own status. On the other side, AR relations are built on responsibility, paternal care, noblesse oblige, loyalty, and respect for authorities. They are formed and maintained by a need for power and a need for deference (Murray, 1938).

2.2.3.5   *Equality* m*atching*

Equality Matching is an Ordered Abelian Group that allows for the assessment of differences between entities. As such, any EM relationship must satisfy the requirements of closure, commutativity, associativity, and order preservation. In addition, it must entail an inverse element and an identity element. If Adam invites David to dinner two times in a row, David's debt to Adam would be two dinner invitations. Zero further invitations from Adam or David would leave the debt unchanged, so zero is the additive identity in this dinner invitation relation. If Adam receives two invitations from David, then they are even. That is, receiving an invitation is the inverse of inviting someone. Every invitation from

either side leads to balance or imbalance in dinner invitations and dinner invitations could not be substituted by pay or by the exchange of other commodities (closure). There is no difference if Adam invites David first and then David invites Adam or the other way round (commutativity). If Adam receives two invitations from David and then one invitation from Elliot and then another invitation from David, the balance (four invitations) is the same as if he received one invitation from David, then one invitation from Elliot, and then two more invitations from David (associativity). Finally, while the total sum of dinner invitations from either side is not important, the total sum of the difference between dinner invitations is significant. It makes a difference if Adam owes one dinner invitation or three. This difference remains the same, even if Adam and David would invite each other to dinner once more. The total amount of the debt remains equal and the direction of the imbalance is unchanged (order preservation). In EM relationships, resource allocation is governed by the principle of equal treatment. Everyone gets the same, regardless of his rank or his needs or the utility of the allocation strategy. In EM work relationships, every contributor matches the workload and the performance of every other contributor. Examples include turn-taking, working in synchrony, and aligning work schedules and tasks. Decisions are made by voting, rotation, or lotteries. Social influence is governed by tit-for-tat rules, the obligation to return favors, and compliance to prescriptions of procedural fairness and equality. EM conflict is manifest in tit-for-tat retaliation, for example in eye-for-an-eye revenge. Extreme examples are honor killings in the course of blood feuds or political vendettas. The motivation to engage in EM relationships could be caused by a general human proclivity for equality (Equality Motive; cf. Rai & Fiske, 2011) or by a mixture of more basic needs. For example, keeping track of imbalances within EM relations and tit-for-tat revenge resemble subcategories of power motivation (Winter, 1973), whereas finding the best and the fairest procedures as well as giving and taking of favors bear elements of achievement and affiliative motives.

2.2.3.6 Market pricing

Market Pricing is an Archimedean Ordered Field in which proportionality and the use of ratios are meaningful. MP relations must exhibit the structures of an ordered Abelian group (see EM) and satisfy the distributive law. For example, in buying and selling relationships addition and subtraction of monetary values are common. Subtraction of money is the inverse of addition of money and the mathematical relation of adding money satisfies both the commutative and the associative law. However, in contrast to EM, people also use multiplication and division to assess values. Four bottles of water at 1€ each cost 4€ in total. If a bottle of water is worth half a bottle of lemonade, then you would get two bottles of lemonade for the price of four bottles of water. Like addition and subtraction, multiplication and division satisfy the requirements of an Ordered Abelian Group. Moreover, these operations can be combined using the distributive law: Multiplication of two elements by the same multiplier and then adding the results up equals the multiplication of the previously built sum of the two elements. If you buy one bottle of lemonade at 2€ and then two more at 2€ each, you spend 6€. You spend the same amount if you add the bottles up first and then buy them. Likewise, if you buy six bottles of water and two bottles of lemonade the total sum would equal the price for four bottles of water and three bottles of lemonade. Thus, the defining feature of MP is that different entities can be reduced to a single metric. The primary metric used in Western society is money, but MP is not limited to the use of money. In fact, every kind of real or imagined object could be used as an MP metric as long as people agree on the metric being used. For example, many indigenous people use salt, shells, hides, or any other kind of natural resources as *currency*. Political economists calculate the utility of large-scale interventions on individual well-being. In social internet games, objects, commodities, and items are traded at values defined by the community. Psychotherapists use token systems to "sell" rewards and benefits to their clients. In general, exchange processes in MP relations are oriented on utilities, prices, wages, and market conditions. Resource allocation is based on performance or merit and decisions are based on cost-

benefit analyses. Accordingly, work relationships governed by MP entail wages oriented on market conditions, bonus payments with regard to individual performance, and individual calculations of contributions in relation to expected compensation (cf. Adams, 1965). Social influence emanates from incentives signaling individual benefits and costs. Examples are special offers, efficiency bonus systems, or penalties for traffic offenses. Conflict in MP relations arises when people compete for markets or customers and when people do not consider or overtly ignore the interests of interaction partners. An extreme case of MP aggression is war strategies based on kill ratios. According to Fiske (1991, 1992), the tendency to structure relationships according to MP principles varies significantly across people and is often, though not always, based on achievement motivation. This perspective is in line with McClelland's reflections on The Achieving Society (1961) and his intervention studies in developing countries (McClelland & Winter, 1969). However, preferences for MP relations are also in line with power motivation (see Chapter 2.1.5).

2.2.3.7   Null and asocial interactions

The aforementioned set of relational categories is exhaustive as to social relations. That is, all social relations can be analyzed and reduced to a single relational model or a combination of relational models. RMT makes the strong theoretical claim that there are no other basic relational models aside from CS, AR, EM, and MP. However, not every interpersonal action is social in nature and most people have no relation to most other people at all. In RMT terminology, the latter case is denominated *null relationship* (NR), whereas the former is referred to as *asocial relationship* (AS).

When people disregard social aspects of their situation, they operate in a null mode. A long-distance runner who avoids physical contact with lampposts, trees, and other runners during a race has NR with most other runners participating in the same race. Or, as Fiske and Haslam (2005) point out, "a soldier under fire who ducks behind a corpse is not acting socially, even if the body turns out to be alive" (p. 269). NR is a sort of autonomy that is

termed *individualistic* in Mead's (1937) classification of societies. In NR, an individual pursues goals without reference to others or awareness of their thoughts and feelings.

In contrast, in AS the individual takes into account other persons' feelings and expectations, but solely for the purpose of exploiting them or using them as a means to the achievement of some non-social goal. A soldier who ducks behind his living comrades and at the same time takes into account that they could get hurt acts asocial (Fiske & Haslam, 2005). Similarly, a company which exploits its workforce without interest in long-term employee retention and job satisfaction or outsmarts an external supplier with no regard to future collaboration opportunities pursues an asocial strategy.

Sometimes it is difficult to distinguish between MP and AS, as both modes include some sort of rational calculation of one's own benefits. However, in an MP relationship, interaction partners coordinate their social actions with regard to a shared model of what is appropriate and what is not. In contrast, an individual in AS mode acts purely individualistic. It may well be the case that in a bargaining situation one of the interaction partners applies MP, whereas the other behaves in AS mode. Thus, if people manipulate other people for their own purposes as if they were tools, their mental model is totally different from people who acknowledge that they share some cost-benefit maximizing model with their interaction partners. The distinction between MP and AS orientation is especially salient in international treaties and constituencies, for example the constituency of the United Nations, where social relations between people are *contractually regulated* in an MP fashion in order to *avoid* AS.

2.2.4 Relational models as motives

Fiske (1991, 1992) conceived of the four basic forms of sociality as intrinsically rewarding activities. He argued that every basic model can be conceptualized as a motive, for "people relate to other people in any of these modes primarily for the sake of relating in that mode, for the sake of experiencing the relationship itself" (Fiske, 1991, p. 99). The strength of these motives varies across situations and across people. Adapting the

terminology introduced by Kehr (2004b), the perception or interpretation of a specific situation as resembling one of the four basic models may lead to cognitive or affective preferences regarding the situation. The strength of these relational preferences varies as a function of the proclivity to engage in this kind of perceived relationship and as a function of the strength of the incentives which are present in the situation.

Although RMT conceives of relational models as autotelic (Fiske & Haslam, 2005) and claims that the basic models are motives in their own right, Fiske (1992) acknowledged that the motivation to engage in prototypical relationships can be predicted by other taxonomies of motives, which have been derived from Murray's (1938) original classification.

Regarding its motive content, CS is attributed to affiliative motives like *n* Intimacy (Fiske, 1992; McAdams, 1980, 1992), *n* Affiliation (Fiske, 1991; Murray, 1938), and a need for unity (Rai & Fiske, 2011). Considering this need for unity and the CS-specific feature of equivalence, the need for CS could also represent what Weinberger termed the *oneness motive* (Siegel & Weinberger, 1998; Weinberger, 1992; Weinberger et al., 2010). This motive is defined as "a need to become part of, [be] at one with, or belong to, a larger whole" (Weinberger et al., 2010, p. 477). CS also entails features of the need to belong (Baumeister & Leary, 1995), a desire to form close interpersonal attachments, and subscales of the Interpersonal Orientation Scale (Hill, 1987), namely the desire for positive affect or stimulation associated with interpersonal closeness and communion. Theorizing by Murray (1938) also suggests that the desire for CS can stem both from a need for succorance, that is the need to be cared for, and a need for nurturance, that is the need to care for others. Thus, the needs for affiliation, intimacy, unity, oneness, succorance and nurturance, as well as the need to belong should be associated with a preference for CS relations.

However, the needs for nurturance and succorance could also drive preferences to engage in relationships dominated by the AR model, which is built on loyal obedience to superiors and protection of followers. In contrast, Fiske (1992) posited that AR can be

attributed to Murray's (1938) needs for deference and power. The need for deference is characterized by a proclivity to "admire, follow, and gladly serve a leader" (Murray, 1938, p. 82), whereas the need for power is defined as the desire to "influence or direct the behavior by suggestion, seduction, persuasion, or command" (Murray, 1938, p. 152). However, both the dimensions of succorance-nurturance and of deference-power imply an asymmetrical relationship between two or more persons, in which some individuals have legitimate control over other individuals. Winter (1973) characterized *n* Power as "capacity to produce (consciously or unconsciously) intended effects on the behavior or emotions of another person" (p. 5). Incentives for the power motive are consequently environmental cues that signal possibilities to exert control, to evoke emotional responses, and to influence behavior in general (Winter, 1973). McClelland (1975) associated *n* Power with the desire for social positions which involve prestige, status, and attention from other people. Fiske (1991) concluded that as people differ in their needs for power and deference, they also differ in their preferences for relationships which are structured in an AR mode. That is, people differ in their need to either actively seek out relationships containing power incentives or passively enjoy the protection and control by others. Thus, the needs for power and deference should be associated with a preference for AR relations.

Whereas CS and AR are distinctively associated with motive classes proposed by Murray (1938), the preference for EM cannot be attributed to any specific motive in the tradition of classic motivational research. However, based on empirical evidence (Lerner, 1974; Morgan & Sawyer, 1967), Lerner (1977) introduced the justice motive (*n* Justice), which is the need for fairness, equality of outcome, balanced reciprocity, and distributive justice (cf. Fiske, 1991). Although EM entails both features of affiliation and power (see Chapter 2.2.3.3) as well as some aspects of achievement motivation (e.g. the desire to get perfectly even with each other or the desire to distribute resources as fair as possible), Fiske (1991, 1992) offered no assumptions as to associations of EM and well-researched social motives. Instead, he suggested the development of projective measures and

scoring systems to analyze the need for equality. Correspondingly, Rai and Fiske (2011) proposed a motive for equal treatment, equal say, and equal chances, which is "directed towards enforcing even balance and in-kind reciprocity" (p. 63). Although it is beyond the scope of this thesis to develop a scoring system for an EM motive in the sense of Lerner's (1977) *n* Justice, the notion of EM being a distinct motive is addressed in the discussions (cf. Chapters 3.3.5 and 4.2.4). Still, the present studies primarily aim at examining links between the Big 3 motives and specific relational models.

Unlike equality matching, MP has a distinct motivational counterpart in the tradition of classic motivation research. Fiske (1991, 1992) assumed that the preference for relationships governed by MP is largely based on *n* Achievement. From both theorizing and empirical studies cited by McClelland (1961) and Brown (1965) he concluded that *n* Achievement is the "need for economic rationality for its own sake, for the satisfaction of making decisions and mobilizing resources in the most effective way possible under the circumstances; that is, for maximizing outcome ratios" (Fiske, 1991, p. 108). Therefore, *n* Achievement is a motive to interact with other persons by bargaining, competing, making contracts, and outwitting competitors. He claims that *n* Achievement is social insofar as it is concerned with social challenges and always entails a social point of reference, be that point another person or another possible self (cf. Markus & Nurius, 1986) at a different time. Assessing one's actual performance in relation to past performance or in relation to the performance of other persons requires not only some point of reference, but also the evaluation of proportions between actual performance and this reference performance. Information is maximal when these proportions or ratios can be calculated on the basis of objective numbers. Calculation of ratios requires the formal structure of a MP relationship. Therefore, people high in *n* Achievement prefer to engage in MP relationships where they can objectively assess their performance.

In sum, Fiske (1991, 1992) attributed the basic relational models to distinct social motives. Although he made no distinction between explicit and implicit motives, his assumptions concern both the explicit and the implicit motive system. In his conception,

preferences for the basic models are on the one hand activated by what McClelland and colleagues (1989) termed *social demands.* On the other hand, he conceptualized the models as inherently rewarding activities comprising motive-specific task incentives (cf. Fiske & Haslam, 2005).

2.2.5 Bidirectional influence of motives and models

In the following, I consider the ontogenetic development of both relational models and social motives, which could shed some light on the potential causal relationships between the two concepts. At the same time, applying an ontogenetic perspective allows for a distinction of potential effects and interconnections of implicit motives, explicit motives, and relational preferences.

Implicit motives are built on associations with natural incentives, developed in early childhood and relatively stable across the lifespan (McClelland, 1958, 1985; McClelland et al., 1989). Since they select, orient, and energize spontaneous behavioral tendencies towards certain classes of affectively charged incentives (Kehr, 2004b; cf. Schultheiss, 2008), they should trigger spontaneous impulses to engage in certain kinds of relationships. Consequently, affective preferences for specific modes of relating to other people should depend on implicit motive formation in early childhood. Furthermore, affective preferences for specific relational models should be formed by early rewarding experiences connecting implicit associative networks to relational schemas.

In contrast, explicit motives are developed later in life, after linguistic skills and conceptualizations have been acquired and "concepts of the self, others, and what is valuable" (McClelland et al., 1989, p. 697) have been learned. Explicit motives determine the self-concept (McClelland, 1985), cognitive choices (Brunstein & Maier, 2005; Spangler, 1992), and goal setting (Brunstein, et al., 1998). As explicit motives vary in their strength across individuals, but also within individuals, the particular pattern of explicit motives of a person should predict cognitive preferences for specific relational models. Roccas and McCauley (2004) recently proposed specific interrelations between

preferences for basic relational models and personal values (Schwartz, 1992). Their assumptions were supported by empirical findings (Biber et al., 2008).

The developmental trajectory of relational models has so far not been the subject of empirical investigations. Fiske (1991) and Goodnow (2004) assumed that the development of different relational models requires different cognitive abilities and that the developmental trajectory of the models follows a sequence of steps similar to the stages of cognitive development introduced by Piaget (1932). That is, although the capacity to apply the models is innate (Fiske, 1992), cognitive development imposes restrictions on their comprehension and adequate enactment. According to Fiske (1991), the increasing structural and operational complexity of the models leads to successive externalization of the models: CS is first externalized in infancy, probably starting with birth. AR is also developed in infancy, but first expressed by age three. EM is externalized by age four and the spontaneous use of MP structures is first expressed by age 9, as it requires the understanding of proportions and ratios. However, Goodnow (2004) applied a different perspective by assuming a continuous sensitivity to occasions to implement the four models. She cited evidence from cross-cultural studies which demonstrated that implementations of interpersonal behavior structured according the four models occur at different ages in different cultures (Bowes, Chen, Li, & Li, 1999; Smetana, 2000). Taken together, CS and AR are most likely developed at a stage in life where implicit social motives are formed. It could well be the case that affective experiences in early childhood within relationships structured according to CS and AR contribute to the formation of associative networks which connect these affective experiences with spontaneous behavioral tendencies, as suggested by McClelland and colleagues (1953). That is, specific relational experiences promote the formation of implicit motives. Likewise, experiences within CS, AR, EM, and MP relationships promote the formation of values, lead to cognitive choices, and ultimately to the emergence of explicit motives.

In sum, both implicit motives and explicit motives could be shaped by relational experiences. Conversely, both implicit motives and explicit motives determine affective

and cognitive preferences for specific relational models. Regarding their development over the lifespan there is maybe a bidirectional influence of motives and relational structures. However, in adulthood, both implicit and explicit motives represent relatively stable dispositions. In addition, the capacity to comprehend and engage in the four basic relational models as well as in complex relationships consisting of RM combinations is fully developed in most adult individuals (Fiske, 1992). As stable explicit and implicit motives lead to cross-situationally stable cognitive and affective preferences for certain classes of incentives and activities, specific individual motives should be able to orient cognition and behavior to certain relational structures comprising certain classes of incentives.

2.2.6 Theoretical integration: The interplay of motives and models

The present research aims at combining classic motivation research in the tradition of Murray (1938) and McClelland (1980, 1985; McClelland et al., 1989) with relational models theory (Fiske, 1991, 1992, 2004). The basic idea is that there are specific interrelations between the fundamental structures of human social life and the motives that drive human social thought and behavior. More specifically, social motives select, orient, and energize behavior towards relationships which exhibit certain relational structures. In sum, relational structures provide affectively charged motive-specific incentives which lead to motive arousal and thus to the motivation to engage in relationships that exhibit these structures. Motive arousal and subsequent motivation should become manifest in preferences for specific relational models. As the engagement in relationships is both an inherently rewarding activity and an obligation governed by social demands and conscious choices, the basic relational models should correspond to both implicit and explicit measures of human motives. The interplay of motives and models is illustrated in Figure 7.
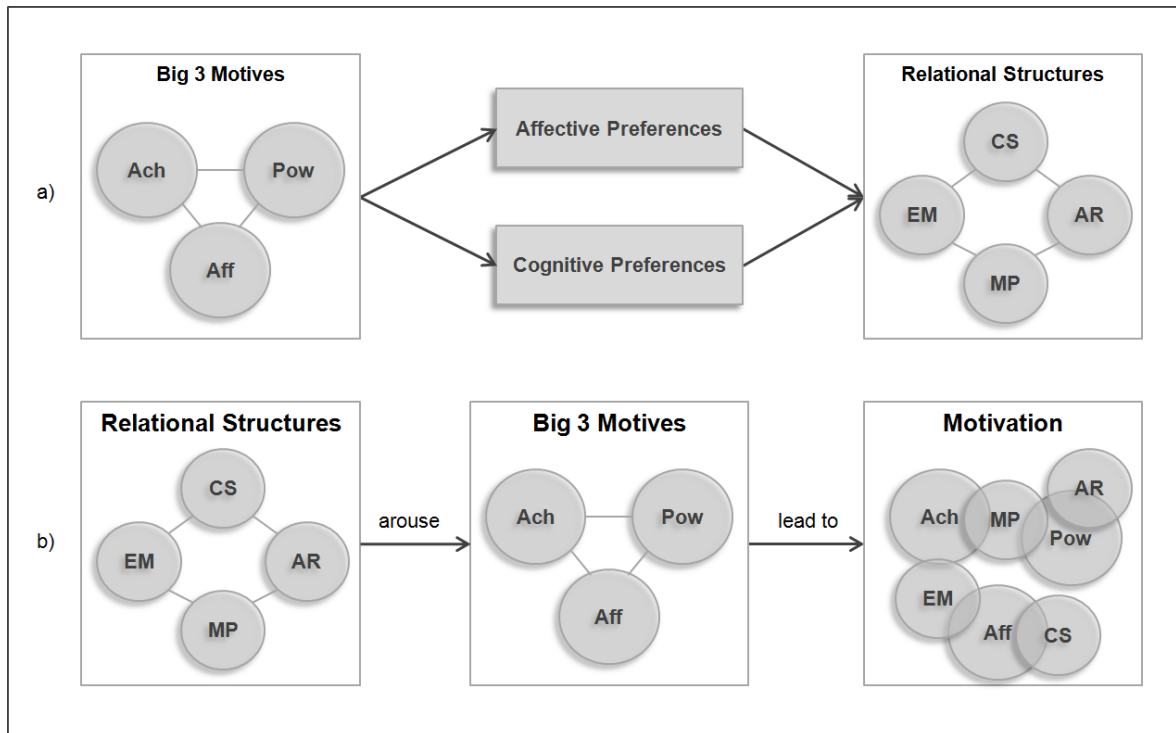
Figure 7. Illustration of the hypothesized interplay of social motives and relational models. a) Motives determine affective and cognitive preferences for distinct relational models (structures). b) Situational incentives within specific relational structures arouse distinct social motives which in turn lead to motivation. Motivation is thus conditioned by specific dispositional motives and corresponding relational incentives. Ach = implicit or explicit need for achievement, Aff = implicit or explicit need for affiliation, Pow = implicit or explicit need for power, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.

There are numerous interesting implications and empirical questions growing out of the hypothesized interplay of motives and models for both motivation and social psychological research and practice as well as for applied psychological disciplines (see Chapter 4.3 for some examples). However, immediately approaching and testing those questions within insular conditions and without empirical support for the basic assumptions could easily lead to patchwork results built on unsteady ground. Consequently, the present work aims at laying the foundations for applied research on motives and models in specific contexts by empirically testing two pivotal elements of this interplay. First, it examines the theoretical assumptions regarding specific links between motives and models (Fiske, 1991) with different measures and methods on both the side of motives and the side of

relational models using cross-sectional data from samples of two different countries in two different languages. Second, it addresses the crucial point of whether specific relational structures indeed elicit specific actual motivation by experimentally testing the effects of relational model framings on the motive content of subsequently written stories.

One theoretical cornerstone of these empirical investigations is the great extent of theory and research on the Big 3 motives *n* Achievement, *n* Affiliation, and *n* Power (see Chapter 2.1.5). These motives represent dispositions to be concerned with and to strive for certain classes of incentives or goals (Emmons, 1989). They operate both on an implicit level and on an explicit level and have been shown to predict social behavior (cf. McClelland et al., 1989; see Chapter 2.1.1). Social incentives responsible for the arousal of implicit motives are represented in a nonverbal format, whereas social incentives responsible for the activation of explicit motives are represented in a verbal-symbolic format (Schultheiss, 2001; see Chapter 2.1.2). Although referential processing between the two formats is possible, the effects of implicit motive arousal are most likely to be observed in operant, non-declarative measures such as protocols of free associations or picture story exercises, whereas explicit motive activation can be assessed with declarative measures such as questionnaires (Brunstein & Maier, 2005; McClelland et al., 1989; Spangler, 1992; see Chapter 2.1.6). Moreover, both implicit and explicit motive arousal should become manifest in preferences for certain stimuli, tasks or activities (Kehr, 2004b; see Chapter 2.1.4). Motivational field theory (Stanton et al., 2010) posits that social motives are aroused by cues present in interpersonal behavior. More generally, social motivation and behavior are elicited by cues inherent to the interdependent relationship of the personalities of two or more people (Sullivan, 1953). Social learning theory (Rotter, 1954) predicts that, in the long run, interpersonal behavior is shaped by the interaction of human needs and social incentives. Taken together, the process of motivation in interpersonal behavior can be viewed as a self-sustaining circle: Arousal of social motives leads to preferences for relationships which comprise incentives that elicit according motivation.

Since the first experiments on social motives (Atkinson et al., 1954; McClelland et al., 1953; Veroff, 1957), the distinguishing features of the Big 3 motives have been that they are aroused by different incentives and lead to different classes of interpersonal behavior. Therefore, one can expect that individual differences in motive strength lead to individual differences in preferences for certain kinds of relationships. Furthermore, the arousal of implicit motives by certain kinds of interpersonal behaviors typical for distinct relationships is likely to elicit specific motivation which is associated with these relationships.

Regarding *n* Affiliation, motivation should occur for and in relationships that are based on friendly, warm, and intimate interactions (Atkinson et al., 1954; see Chapter 2.1.5). Accordingly, people high in *n* Affiliation should prefer relationships that signal them possibilities to initiate such interactions and maintain or repeat them over time. Regarding *n* Power, motivation should occur for and in relationships which are defined by differences in status, by opportunities to influence or dominate others, and by the legitimization of asymmetrical control (cf. Winter et al., 1998). Accordingly, people high in *n* Power should prefer relationships that signal them possibilities to exert control and to have impact on other people. Although little is known about the social implications of *n* Achievement, arousal of this motive should depend on the presence of cues which allow for a comparison of one's own performance or progress with past performance or the progress of other people. Therefore, the likelihood of *n* Achievement arousal should be the higher the more precise information a relationship offers. Consequently, people high in *n* Achievement should prefer relationships which allow for the exact assessment of performance, efficiency, effectiveness, and subjective standards of excellence.

Another theoretical cornerstone of the present empirical investigations is Fiske's (1991, 1992) review of sociological and psychological literature on the structures of social life and his relational models theory. Relationships are complex phenomena consisting of many diverse joint interactions, individual construals and normative prescriptions. RMT provides a framework for the analysis of complex relationships, including motivational drivers and barriers of social interaction, by focusing on the structural relations within relationships and on the mental representations of these structural relations. Based on intercultural

fieldwork, previous categorizations of social relations (e.g., Bakan, 1966; Clark & Mills, 1979; Weber, 1916) and formal measurement theory (Stevens, 1946), RMT distinguishes four basic relational structures which are combined and moderated by individual as well as social factors to constitute complex manifest relationships: communal sharing, authority ranking, equality matching, and market pricing. Regarding their motivational antecedents and consequences, Fiske (1991) explicitly links these basic relational models to motives identified in classic motivation psychology. According to RMT, preferences for CS relations are associated with affiliative motives (see Chapter 2.2.3.1). As CS relations exhibit many characteristics which are important incentives for affiliative needs, such as equivalence, oneness, unity, and intimacy, the possibility to engage in such CS relations should trigger affiliative motives. Consequently, preferences for CS relations and affiliative motives should correlate. In contrast, AR relations comprise many characteristics which constitute incentives for power motives, such as differences in hierarchical positions, dominance, and deference (see Chapter 2.2.3.2). Thus, the possibility to engage in AR relations should trigger power motives. Consequently, preferences for AR relations and power motives should correlate. According to RMT, the preference for EM relations is based on a need for justice (cf. Lerner, 1974) and not specifically linked to any of the Big 3 motives. However, EM entails some characteristics of the Big 3 motives and could be driven at least partly by all of them. Finally, preferences for MP relations are specifically associated with *n* Achievement, as both concepts are based on an orientation towards efficiency and effectiveness, which is concerned with optimizing outcomes of personal challenges and opportunities (Fiske, 1992).

Building on these basic theoretical assumptions, in the next chapter I will first derive specific hypotheses regarding the interconnection of motives and models. Subsequently, I will draw on three different empirical methods to test these hypotheses: An analysis of the relevant RMT literature in light of the Big 3 motives, cross-sectional survey studies with various measures of motives and relational preferences, and relational framing experiments.

3   Present Research

3.1   Overview and Main Hypotheses

In the following empirical studies, I intended to test Fiske's (1991, 1992) assumptions concerning specific interrelations between social motives and relational models. At the same time, I tried to extend the theoretical knowledge on relational models by applying the perspective of motivation psychology. Specifically, I will report four studies linking the Big 3 motives *n* Achievement, *n* Affiliation, and *n* Power to the basic relational models communal sharing, authority ranking, equality matching, and market pricing. In addition, I will report a literature analysis, which shows that theoretical descriptions of the four basic relational models entail specific motive content. Finally, I will report two experimental studies which demonstrate that distinct relational structures lead to different kinds of motivation, probably energized by the arousal and activation of distinct implicit and explicit motives.

Specific hypotheses are presented in Chapters 3.1.1 to 3.1.4. They revolve around four basic assumptions regarding the connection of motives and models: First, the four basic relational models comprise specific motive content (for the corresponding hypotheses see Chapter 3.1.1). I examined this assumption in the literature study. Second, there are correlations between specific models and their corresponding motives (corresponding hypotheses in Chapter 3.1.2). Studies 2-5 were concerned with testing this assumption and the hypotheses that are based on it. Third, the Big 3 motives have distinct effects on relational preferences (Chapter 3.1.3). Studies 2-5 were designed to test this assumption in various settings, with distinct samples, and for different motives. Fourth, distinct motivation by relational structure is possible. That is, relational models elicit motivation and, moreover, the specific properties of the basic relational models elicit specific motivation, which can be measured in the content of associative stories (see Chapter 3.1.4). Studies 6 and 7 were designed to test this assumption.

3.1.1 Specific motive content within descriptions of basic relational models

If the basic relational models relate to the Big 3 motives in the way Fiske (1991) suggested, then these basic models must entail specific features that correspond to distinct motives. These features could then serve as cues or incentives to arouse the motives. The motive-specific features should be observable in theoretical characterizations of the basic models. In the first study, I analyzed relational models descriptions with Winter's (1994) integrated motive coding scheme for *n* Achievement, *n* Affiliation, and *n* Power, and subjected the motive scores of the descriptions to statistical analyses. In accordance with Fiske's (1991) theoretical assumptions, I tested the following general hypothesis:

Hypothesis 1: Thematic motive content differs across descriptions of communal sharing, authority ranking, equality matching, and market pricing.

Furthermore, if relational models and motives are specifically related, relational model descriptions should entail primarily the motive themes which are assumed to be typical for the models:

Hypothesis 1.1: CS descriptions comprise more affiliation content than achievement and power content.

Hypothesis 1.2: AR descriptions comprise more power content than achievement and affiliation content.

Hypothesis 1.3: MP descriptions comprise more achievement content than affiliation and power content.

As EM is not connected to any specific Big 3 motive (Fiske, 1991), I did not expect any differences in motive content within EM descriptions.

Controlling for word count of the motive scores by means of regression analyses (Cohen, Cohen, West, & Aiken, 2003) allows for a comparison of motive values across different models. Thus, it is possible to assess differences in the content of a specific motive between the model that should be specifically related to this motive and the other models.

Hypothesis 1.4: Achievement content is higher in descriptions of MP than in descriptions of CS, AR, and EM.

Hypothesis 1.5: Affiliation content is higher in descriptions of CS than in descriptions of AR, EM, and MP.

Hypothesis 1.6: Power content is higher in descriptions of AR than in descriptions of CS, EM, and MP.

3.1.2 Specific correlations between motives and models

If the basic relational models relate to the Big 3 motives in the way Fiske (1991) suggested and if the theoretical characterizations of the models support these relationships, then there should be empirical correlations between distinct motives and their corresponding relational models. Therefore, in Studies 2-5 I tested the following general hypothesis:

Hypothesis 2: Personal preferences for specific relational models are associated with distinct motives.

Roccas and McCauley (2004) as well as Biber et al. (2008) linked personal motivation to engage in different basic relational models to personal values (Schwartz, 1992), including the explicit values of power, achievement, and universalism. Both relational models and values were measured via questionnaires. Motivational investment in specific relational models was correlated with corresponding personal values (Biber et al., 2008).

Even though Schwartz' (1992, 2007) typology of personal values differs substantially from the typology of explicit motives (see Chapter 3.3.1.1) applied in the present studies, Biber et al.'s (2008) results strongly suggest that relational preferences and explicit motives are systematically related and that these relationships can be detected with declarative measures. Therefore, I expected that explicit motives are specifically associated with relational preferences and that the pattern of associations is congruent to the pattern of Hypothesis 1:

Hypothesis 2.1: Preferences for CS are associated with the explicit affiliation motive (*san* Affiliation).

Hypothesis 2.2: Preferences for AR are associated with the explicit power motive (*san* Power).

Hypothesis 2.3: Preferences for MP are associated with the explicit achievement motive (*san* Achievement).

Implicit motives are relatively stable dispositions to react in specific ways to affectively charged incentives (Schultheiss & Brunstein, 1999). Although they can be categorized according to the same motive themes, implicit and explicit motives are conceptualized as grounded in two independent information processing systems (McClelland et al., 1989). Accordingly, implicit motives show no empirical correlations to explicit motives (e.g., Brunstein et al., 1999; Job & Brandstätter, 2009; Schattke, Koestner, & Kehr, 2011; Spangler, 1992). However, the basic relational models entail specific incentives that correspond to different classes of motives. They have many features that could act as cues for the arousal of implicit motives and thus they comprise many potential affectively charged incentives (Stanton et al., 2010; Sullivan, 1953). Therefore, individuals' preferences for certain basic relational models should correlate with their corresponding implicit motives.

Hypothesis 2.4: Preferences for CS are associated with the implicit affiliation motive (*n* Affiliation).

Hypothesis 2.5: Preferences for AR are associated with the implicit power motive (*n* Power).

Hypothesis 2.6: Preferences for MP are associated with the implicit achievement motive (*n* Achievement).

3.1.3 Implicit and explicit motives affect relational preferences

Beyond mere correlations between motives and models, from a theoretical point of view it is possible to test hypotheses addressing causal relationships between the two concepts. Both implicit and explicit motives are stable dispositions. They shape interpersonal behavior (McClelland et al., 1989) and lead to affective and cognitive preferences for certain classes of incentives and activities (Kehr, 2004b). Thus, preferences for relationships structured according to relational models are likely to be affected by those explicit and implicit motives which correspond to the relational models constituting the relationship.

Hypothesis 3: Preferences for specific relational models are dependent on the strength of their corresponding motives.

Implicit motives are shaped early in life and show various effects on interpersonal behavior (see Chapter 2.2.5). In addition, they result in affective preferences and energize spontaneous behavioral tendencies to engage in certain kinds of relationships (Kehr, 2004b). Therefore, I hypothesized that preferences for specific relational models depend on the strength of their corresponding implicit motives.

Hypothesis 3.1: The strength of the implicit need for Affiliation (*n* Affiliation) predicts preferences for relationships structured according to the relational model CS.

Hypothesis 3.2: The strength of the implicit need for Power (*n* Power) predicts preferences for relationships structured according to the relational model AR.

Hypothesis 3.3: The strength of the implicit need for Achievement (*n* Achievement) predicts preferences for relationships structured according to the relational model MP.

Explicit motives predict cognitive choices (McClelland, 1985; McClelland et al., 1989) as well as the formation of goals (Brunstein et al., 1998; Brunstein & Maier, 2005) and intentions (Gollwitzer, 1999). They lead to cognitive preferences for tasks and activities that are subjectively important (Kehr, 2004b). Thus, explicit motives should affect the formation of cognitive preferences for categories of relationships that are perceived as subjectively important. Therefore, I hypothesized that preferences for specific relational models depend on the strength of their corresponding self-attributed explicit motives.

Hypothesis 3.4: The strength of the explicit need for Affiliation (*san* Affiliation) predicts preferences for relationships structured according to the relational model CS.

Hypothesis 3.5: The strength of the explicit need for Power (*san* Power) predicts preferences for relationships structured according to the relational model AR

Hypothesis 3.6: The strength of the explicit need for Achievement (*san* Achievement) predicts preferences for relationships structured according to the relational model MP.

Note that although implicit motives and explicit motives are expected to be uncorrelated, they should both have effects on relational preferences. This is because both motive systems affect independent aspects of relationships: Explicit motives directly affect conscious decisions to engage in or wish for certain types of relationships, whereas implicit motives unfold their motivating potential via the real or imagined affectively charged incentives inherent in distinctively structured relational activities.

3.1.4 The basic relational models elicit specific types of motivation

Arousal of social motives generates motivation, which can be measured by observing behavior, by means of questionnaires, or by means of associative picture tests (cf. Smith, 1992). I used the latter to examine the assumption that the basic relational models elicit specific social motivation. If the basic relational models correspond to distinct social motives, then structuring social interactions according to distinct basic relational models should elicit distinct social motivation. In an experimental approach using framing techniques (see Chapter 3.4 for a detailed description) I tested the following general hypothesis:

Hypothesis 4: Thematic motive content of associative stories about social interactions is dependent on the framing of these interactions as structured according to distinct relational models.

If relational models and motives are specifically related, associative stories written in response to a specific relational model framing should entail primarily the motive themes that correspond to the framing condition. Moreover, the thematic motive content of stories written in response to distinct social incentives represents actual motivation (McClelland et al., 1953; Smith, 1992). Therefore, the particular motive themes that occur after distinct relational framings should represent the motivation elicited by the relational structures. Thus, I tested the following hypotheses:

Hypothesis 4.1: Framing social interactions as CS structured leads to more affiliation motivation than achievement motivation and power motivation.

Hypothesis 4.2: Framing social interactions as AR structured leads to more power motivation than achievement motivation and affiliation motivation.

Hypothesis 4.3: Framing social interactions as MP structured leads to more achievement motivation than affiliation motivation and power motivation.

In addition, specific motive content should be higher in the relational framing condition that corresponds to the motive than in the other conditions.

Hypothesis 4.4: Framing social interactions as CS structured leads to more affiliation motivation than framing social interactions as AR, EM, or MP structured.

Hypothesis 4.5: Framing social interactions as AR structured leads to more power motivation than framing social interactions as CS, EM, or MP structured.

Hypothesis 4.6: Framing social interactions as MP structured leads to more achievement motivation than framing social interactions as CS, AR, or EM structured.

If there are indeed empirical correlations between specific relational models and social motives and if it is possible to elicit specific motivation by structuring interactions according to different relational models, this could serve as a powerful tool in both research and applied settings. I will discuss the findings of the reported studies regarding their potential use in applied psychological disciplines and provide suggestions for applied research on motives and models in the general discussion section.

3.2   Study 1: Literature Review and Analysis Regarding Motive Content of Basic Relational Model Descriptions

3.2.1 Introduction

The theoretical assumption that the basic relational models entail motive-specific content has not yet been the subject of empirical studies. In a first attempt to close this empirical gap, I analyzed descriptions of relational models published in peer-reviewed journals using Winter's (1994) integrated scoring system for the Big 3 motives (for a similar procedure regarding motive content in characterizations of transformational leadership styles, see Amann & Kehr, 2013).

The analysis of theoretical relational model characterizations is useful for two reasons: First, these characterizations represent the objective theoretical core of the relational model categories without the "noise" of subjective relational model construals and

inseparable combinations of relational models in real-life relationships. Thus, the theoretical relational model characterizations should contain less error variance than subjective accounts of individuals measured by self-report or data received from observations of relational behavior, where in a first step it would be necessary to disentangle the blending of relational models in a given relationship (e.g., Goodnow, 2004; Connelley & Folger, 2004). Second, the results obtained from the analysis of specific motive content in objective characterizations of relational models would corroborate both theoretical assumptions (Fiske, 1991, 1992) and empirical findings obtained from subjective accounts of relational preferences.

To score for motive content in relational model characterizations I made use of a content coding method originally developed to measure motive arousal in individuals (Heckhausen, 1963; McClelland et al., 1953; Uleman, 1971; Veroff, 1957; Winter, 1973). With this method, motive content is extracted from real or imagined narratives by assigning motive categories to designated key words or key phrases while taking into account the overall context of the narrative (cf. Pang, 2010). It has been adapted to score for dispositional motive strength of individuals (Pang & Schultheiss, 2005), motive content of school books (Engeser, Rheinberg, & Möller, 2009; McClelland, 1961) and historical texts (Berlew, 1956; Bradburn & Berlew, 1961), the assessment of motives of political leaders (House, Spangler, & Woycke, 1991; Winter, 2002, 2010), and emerging motives in international relations (Langner & Winter, 2001; Peterson, Doty, & Winter, 1994). Consequently, using this set of content coding methods one can either score for actual motivation or for dispositional motives, or for motive content within documents and texts.

For the present study, I followed the suggestions made by Winter (1994) to score for the Big 3 motives achievement, affiliation, and power in text sections on theoretical concepts. By that, I intended to score the motive content of the underlying concepts. Specifically, I had characterizations of the basic relational models communal sharing, authority ranking, equality matching, and market pricing coded in order to look for differential degrees of motive manifestations in these characterizations, assuming that the

characterizations represent the underlying theoretical structures of the models. In line with the theoretical assumptions brought forward by Fiske (1991), I hypothesized that *thematic motive content differs across descriptions of communal sharing, authority ranking, equality matching, and market pricing* (Hypothesis 1). Theoretically, CS is specifically connected to *n* Affiliation, whereas AR is connected to *n* Power, and MP is connected to *n* Achievement (Fiske, 1991, 1992; see Chapter 2.2.3). Specifying Hypothesis 1, the four basic models should entail primarily the motive themes which are assumed to be typical for the models. That is, *CS descriptions comprise more affiliation content than achievement content and power content* (Hypothesis 1.1); *AR descriptions comprise more power content than achievement content and affiliation content* (Hypothesis 1.2); and *MP descriptions comprise more achievement content than affiliation content and power content*, (Hypothesis 1.3). Finally, motive scores should be higher in characterizations of the motive-specific relational model than in characterizations of the other models. Thus, a*chievement content is higher in descriptions of MP than in descriptions of CS, AR, and EM* (Hypothesis 1.4); *affiliation content is higher in descriptions of CS than in descriptions of AR, EM, and MP.* (Hypothesis 1.5); *power content is higher in descriptions of AR than in descriptions of CS, EM, and MP* (Hypothesis 1.6).

3.2.2 Method

I conducted a literature search within the databases PsycARTICLES, PsycINFO, and MedLine. Search terms were 'Communal Sharing', 'Authority Ranking', 'Equality Matching', and 'Market Pricing'. In all databases, the search was conducted in the titles, abstracts, and full texts of the available documents. In order to limit the range of the results and to ensure comparability of the texts to be analyzed, I restricted the search by the following conditions: First, the search terms were connected by the logical operator ∩. That is, all four search terms had to be present in a single document to qualify for further analysis. Second, I limited the search to documents written in English. Third, since relational models theory was first put forward in 1991, I restricted the search to documents

written from 1991 to the present. Fourth, I included only peer-reviewed journal articles for two reasons: For once, there are numerous dissertations and books on relational models theory, which entail lengthy descriptions of one or more of the basic models. As regressing out the number of words is crucial for the statistical analysis of motive content within the relational models descriptions, I wanted to limit the analysis to a set of comparably brief paragraphs on the models. For twice, I wanted to include only texts which are objectively approved by the psychological scientific community and therefore exhibit a certain standard of excellence and reputation.

With these restrictions, the PsycARTICLES search returned 28 documents. They were manually scanned for descriptions of the relational models. If one or more models were not described, the document was excluded in order to reduce potential error variance stemming from biased presentation of the relational models. In addition, if at least one of the descriptions contained only one sentence, the document was also excluded. After the manual revision, ten articles remained that matched the criteria for scoring. An additional combined PsycINFO/Medline search returned 18 documents. These documents were again manually searched for RM descriptions. After removing duplicates to the PsycARTICLES search and excluding documents according to the criteria of the PsycARTICLES search mentioned above, six additional articles remained, resulting in a total of 16 documents, which were subjected to content analysis. A full account of these documents is provided in Appendix A and in the reference list. Relational models descriptions were extracted from the retrieved articles and listed in random order for the content analysis. Mean length of descriptions was 364.58 words ($SD = 870.74$).

The content analysis was carried out according to the guidelines described in Winter's (1994) *Manual for Scoring Motive Imagery in Running Text*: Achievement is scored whenever a concern with a standard of excellence, as indicated by positive evaluations of goals and performances, winning or competing with others, disappointment about failure, or unique accomplishments is mentioned. Affiliation is scored whenever a concern with establishing, maintaining, or restoring friendly relations, as expressed by positive feelings

towards others, sadness about separation, affiliative activities, or friendly actions is mentioned. Power is scored whenever a concern with having impact on others through strong, forceful actions, controlling, influencing, helping, impressing, or eliciting strong emotions in others is mentioned.

In the first step of the content analysis, two coders who were blind to the hypotheses independently analyzed the relational models descriptions. Previously, they had undergone coding training using the materials contained in Winter's (1994) manual until they had achieved 85% agreement or better with calibration materials pre-scored by experts that are also contained in the manual. The percentage of agreements (denoted inter-rater reliability by Winter, 1994) between the two scorers across all documents was estimated by the index of concordance ([2 × number of agreements between scorers] / [Scorer A's scores + Scorer B's scores]; see Winter, 1994; Schultheiss & Brunstein, 2001). The inter-rater reliability was 90% for achievement content, 90% for affiliation content, and 92% for power content. In the second step, scoring disagreements were discussed and resolved by the two scorers. In the following analyses I used the concordant motive scores from the first step and the agreed-upon motives scores from this discussion.

As the word count of the relational model characterizations was significantly correlated with the obtained motive scores for achievement (r = .58, p < .01), affiliation (r = .62, p < .01), and power (r = .74, p < .01), I controlled for the influence of text length on the motive scores by means of simple regression analyses in the respective motive domains and converted the residuals to z-scores (cf. Cohen et al., 2003). Regressing out word count also allowed for cross-model, cross-motive comparisons. Raw motive scores and word counts of the texts are provided in Appendix A.

3.2.3 Results

Means, standard deviations, and 95% confidence intervals of word count corrected motive scores according to relational model condition are listed in Table 1.

Table 1

Means, Standard Deviations, and Confidence Intervals (95%) of Motive Scores.

Motive theme	Model	*M*	*SD*	95% CI low	95% CI high
Achievement	AR	-.43	.38	-.64	-.23
	CS	-.56	.90	-1.04	-.08
	EM	.28	.78	-.13	.70
	MP	.71	1.22	.06	1.36
Affiliation	AR	-.45	.64	-.79	-.11
	CS	.96	1.32	.25	1.66
	EM	-.04	.34	-.23	.14
	MP	-.46	.71	-.84	-.09
Power	AR	.87	1.41	.12	1.62
	CS	-.43	.78	-.84	-.01
	EM	-.07	.38	-.28	.13
	MP	-.37	.56	-.67	-.07

Note. CS = communal sharing, AR = authority ranking, EM = equality matching, MP = market pricing. Motive scores were corrected for word count and z-standardized prior to the analysis.

I subjected the z-standardized motive scores received from the content analysis of 64 relational model characterizations in 16 different documents to a 4 (relational models: CS, AR, EM, MP) x 3 (motive theme: achievement, affiliation, power) ANOVA, with the second factor repeated. The analysis revealed a significant interaction effect of relational models and motive theme, $F(6, 120) = 10.05$, $p < .01$, $\eta^2 = .33$, $(1-\beta) = 1.00$, indicating that motive theme varied as a function of relational model (see Figure 8) and supporting Hypothesis 1.
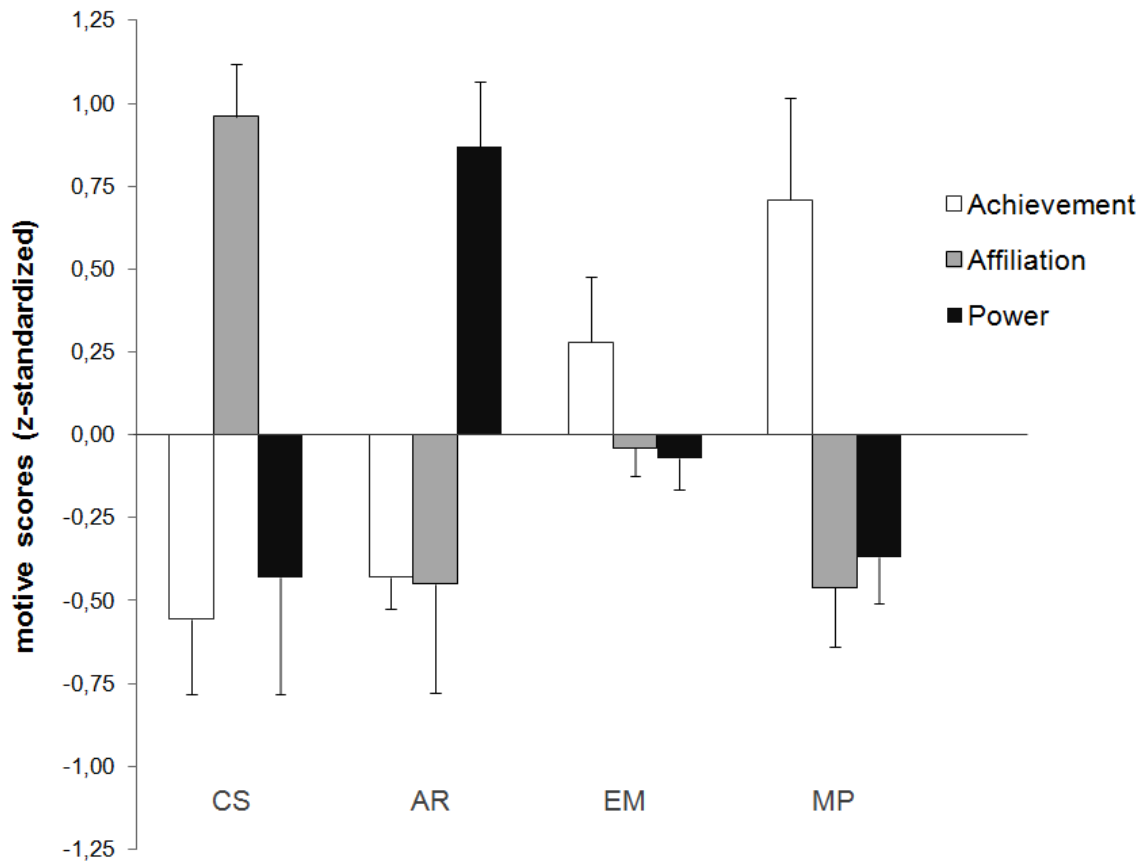
Figure 8. Z-standardized achievement, affiliation, and power motive scores in theoretical texts characterizing the relational models communal sharing (CS), authority ranking (AR), equality matching (EM), and market pricing (MP). Error bars represent standard errors of estimates.

To test Hypotheses 1.1, 1.2, and 1.3, I ran simple main effects and planned contrasts in the single relational model domains. Within CS, the multivariate simple effect of motive theme was significant, $F(2, 59) = 10.83$, $p < .01$, $\eta^2 = .27$, $(1-\beta) = .99$. The difference contrast between achievement and affiliation was significant, $F(1, 15) = 8.55$, $p = .01$, $\eta^2 = .36$, as was the difference contrast between affiliation and power, $F(1, 15) = 2.91$, $p < .01$, $\eta^2 = .44$. Thus, Hypothesis 1.1 was confirmed. Concerning AR, the simple effect of motive theme was also significant, $F(2, 59) = 11.86$, $p < .01$, $\eta^2 = .29$, $(1-\beta) = .99$. The simple contrast between power and affiliation was significant, $F(1, 15) = 6.94$, p = .02, $\eta^2 = .32$, as was the simple contrast between power and achievement, $F(1, 15) = 8.62$, $p = .01$, $\eta^2 = .37$. Thus, Hypothesis 1.2 was also confirmed. As to MP, the result of the ANOVA was also significant, $F(2, 59) = 6.74$, $p < .01$, $\eta^2 = .19$, $(1-\beta) = .90$. The simple

contrast between achievement and affiliation was significant, $F(1, 15) = 6.63$, $p = .02$, $\eta^2 = .31$, as was the difference contrast between power and achievement, $F(1, 15) = 8.32$, p = .01, $\eta^2 = .36$. Thus, Hypothesis 1.3 was also confirmed. Although I had no hypothesis regarding motive differences in EM, for the sake of completeness I conducted the same analysis in the EM domain. The result was not significant, $F(2, 59) = .66$, $p = .52$, $\eta^2 = .02$, $(1-\beta) = .16$.

To test the hypotheses that motive scores are higher in descriptions of the motive-specific relational model than in descriptions of the other models (Hypotheses 1.4, 1.5, and 1.6) I ran simple main effects of relational models within the single motive domains. Regarding achievement content, the univariate simple effect of relational models was significant, $F(3, 60) = 7.57$, $p < .01$, $\eta^2 = .27$, $(1-\beta) = .94$. In order to test Hypothesis 1.4 directly, I calculated a planned contrast (CS = -1.00; AR = -1.00; EM = -1.00; MP = 3.00), which was significant, $t(60) = 3,74$, $p < .01$, confirming Hypothesis 1.4. Scheffé corrected post-hoc tests revealed significant differences ($p < .05$) between MP and CS, and MP and AR, respectively. The difference between MP and EM in the achievement domain was not significant ($p = .60$). Concerning affiliation content, the univariate simple effect of relational models was also significant, $F(3, 60) = 10.34$, $p < .01$, $\eta^2 = .34$, $(1-\beta) = .98$. In order to test Hypothesis 1.5 directly, I calculated a planned contrast (CS = 3.00; AR = -1.00; EM = -1.00; MP = -1.00), which was significant, $t(60) = 5.32$, $p < .01$, confirming Hypothesis 1.5. Scheffé corrected post-hoc tests revealed significant differences ($p < .05$) between CS and AR, CS and EM, and CS and MP, respectively. As to power content, the univariate simple effect of relational models was also significant, $F(3, 60) = 7.61$, $p < .01$, $\eta^2 = .28$, $(1-\beta) = .94$. In order to test Hypothesis 1.6 directly, I calculated a planned contrast (CS = -1.00; AR = 3.00; EM = -1.00; MP = -1.00), which was significant, $t(60) = 4.62$, $p < .01$, confirming Hypothesis 1.6. Scheffé corrected post-hoc tests revealed significant differences ($p < .05$) between AR and CS, AR and EM, and AR and MP, respectively.

3.2.4 Discussion

Study 1 demonstrated that motive content varies significantly across descriptions of specific relational models. This result lends support to Fiske's (1991, 1992) assumption that preferences for basic relational models are attributable to different social motives. Moreover, I found that, at least in theory, CS relations comprise significantly more affiliation content than achievement and power content, respectively; AR relations comprise significantly more power content than achievement and affiliation content; and MP relations comprise significantly more achievement content than affiliation and power content. In addition, corrected t-tests and planned contrasts showed that affiliation content is specific for CS, whereas power content is specific for AR and achievement content is specific for MP.

The implications of the foregoing content analysis are very different from the implications usually obtained from the applied motive measures. Whereas in most cases dispositional motives or actual motivation of present or historical individuals are assessed, in this study I measured the motive content of abstract scientific concepts. Presuming that the applied coding categories for achievement, affiliation, and power reliably and validly represent the abstract concepts of these motive themes, the present study constitutes an analysis of correspondence (in an abstract, non-statistical sense) between two sets of concepts. Specifically, the foregoing analysis suggests that relational models and social motives are conceptually related and that there is at least a theoretical overlap between the motive themes occurring in human interactions and the structures of human interactions themselves. The present analysis suggests that there is differential motive content in relational models. Conversely, it would be interesting to develop a coding scheme for relational models and subsequently analyze the theoretical descriptions of social motives to explore whether differential relational structures are typical for specific motives.

The present study has several limitations. First, motive themes were extracted from scientific texts, which lack the emotional displays usually found in PSE protocols or

narratives of personal biographical events. Still, the integrated scoring system used to score the motive content of relational model descriptions (Winter, 1991) allows for the analysis of a variety of text categories, including historical and political texts (Winter, 2010), in which emotional displays are also sparse as compared to the typical PSE protocols (cf. Pang & Schultheiss, 2005). Furthermore, the fact that two independent scorers reached an initial agreement in motive scores of >90% lends support to the view that this kind of scientific material is indeed reliably codeable.

Second, the analysis included only peer-reviewed articles in scientific journals. This was due to the fact that I wanted to keep text length and scientific reputation of the documents within narrow boundaries to ensure comparability of the materials. Likewise, one could conduct separate analyses with different categories of documents in order to validate the findings of the present study. Finding the same effects with book chapters or dissertations would corroborate the results of the present literature analysis.

Third, the results do not reveal any causal relationships between motives and models. Usually, dispositional motive scores of persons are extracted from biographical accounts or PSE protocols (cf. Pang, 2010) and these scores are then used to predict emotional, motivational or behavioral outcomes. The present analysis alone does neither allow for the conclusion that relational models are driven by social motives nor that relational models cause the formation of social motives. It only implies that there is a conceptual overlap between motives and models. However, it was not the goal of this study to test for any causal relationships. This will be actually tested in the following studies.

Still, the foregoing analysis of theoretical relational model descriptions supports Fiske's (1991, 1992) claim that relational models and the Big 3 motives are related in a systematic manner. Figure 9 illustrates the specific interrelations of the two concepts, as derived from the literature and obtained from the results of the present analysis. These interrelations are the basis of the following empirical studies, which systematically test the specific interrelations between subjective preferences for the basic relational models and individual motive dispositions.
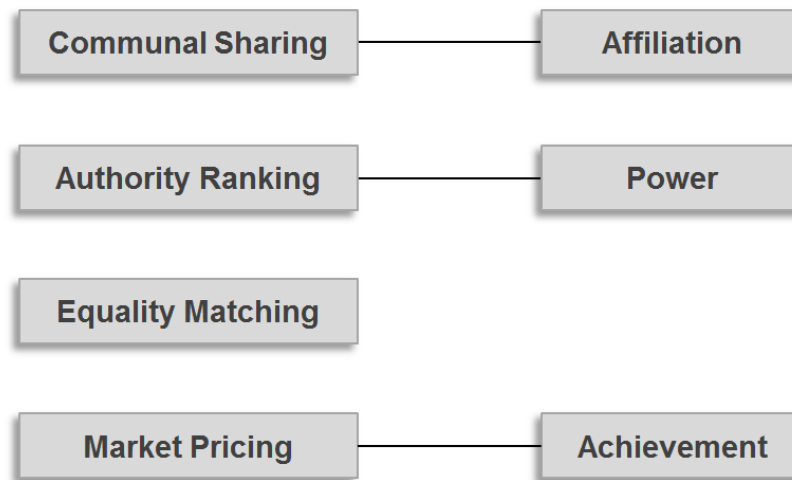
Figure 9. Specific links between relational models and Big 3 motives as derived from the literature on both relational models and social motives and as obtained in Study 1.

Regarding EM, neither the literature review of relational models nor the review of social motives led to hypotheses on connections to specific motives. The fact that I did not find any specific links of EM and distinct social motives in the current study suggests that EM is indeed not specific for any of the Big 3 motives. Still, this does not mean that EM is unaffected by the social motives, or vice versa. In contrast, the finding that there is a general overlap between the concepts of models and motives suggests that there may be an equality matching motive, or that EM may be driven by a set of social motives, or that EM contains incentives that apply to more than one motive or none. I will shed more light on the role of EM in the following studies and discuss the role of EM in the general discussion in light of the need for equality proposed by Lerner (1974) as well as Rai and Fiske (2011).

3.3 Empirical Studies on the Relationship of the Big 3 Motives and the Basic Relational Models

In a series of four studies I tested whether individual implicit and explicit needs for achievement, affiliation, and power correspond to people's desires for certain relational structures. Moreover, I intended to demonstrate that both implicit motive dispositions and self-attributed motives (cf. Chapter 2.1.1; McClelland et al., 1989) predict preferences for relationships which are structured in a way that allows for satisfaction of these motives. The underlying logic is that relationships structured according to distinct patterns and rules comprise relational incentives which are tuned to different motives. That is, people actively prefer and seek relationships that they like (thus corresponding to their implicit motives, cf. Chapter 2.1.4; Kehr, 2004b) and that they perceive as important (thus corresponding to their explicit motives), because these relationships exhibit the right kind of incentives for them. Motive dispositions have been shown to predict a variety of biological (Fodor, Wick, & Hartsen, 2006; McClelland, 1980; Schultheiss & Rohde, 2002; Wirth & Schultheiss, 2006), behavioral (Lang et al., 2012; Mason & Blankenship, 1987; Winter, 2002), emotional (Brunstein, et al., 1998; Weinberger & McClelland, 1990), cognitive (Brunstein & Maier, 2005; McClelland & Libermann, 1949; Schultheiss & Hale, 2007; Woike, 2008), and social (Chusmir & Azevedo, 1992; Langner & Winter, 2001; McClelland, 1961; McClelland & Winter, 1969) outcomes. Still, to my knowledge the present series of studies is the first to directly link social motives and relational structures. In the following, I will introduce the four studies and separately present their methods and results. Regarding the reported statistical analyses, I used SPSS 21 (IBM, 2012) to calculate both descriptive and inferential statistics. Statistical power was calculated with G*Power 3.1.2 (Faul, Erdfelder, Buchner, & Lang, 2009). All inferential tests were two-tailed and the level of significance was set to $\alpha = .05$, unless otherwise specified. A discussion summarizing the empirical findings will conclude this section.

3.3.1 Study 2: Effects of explicit motives on the preferences for basic relational models in a student sample

3.3.1.1   *Introduction*

According to McClelland et al. (1989), explicit motives represent the reasons people self-ascribe to their behavior. They are related to personal values (Rokeach, 1979; Schwartz, 1992) and manifest themselves in cognitive preferences (Kehr, 2004b) and cognitive choices (Brunstein & Maier, 2005). Testing assumptions made by Roccas and McCauley (2004), Biber et al. (2008) correlated personal values (Schwartz, 1992) and preferences for basic relational models, both measured via declarative, self-report measures. They found that CS was positively correlated with the values *universalism* ($r = .27$) and *benevolence* ($r = .34$); AR was positively correlated with power ($r = .33$), achievement ($r = .17$), and conformity ($r = .19$); and MP was positively correlated with achievement ($r = .12$) and power ($r = .18$). EM did not show significant correlations to any of the 10 value categories assessed in the study. Schwartz's (1992) typology of personal values shares some commonalities with the explicit motive system. For example, it conceives of values as desirable, cross-situational mental concepts and beliefs regarding personal goals. This definition comes close to McClelland et al.'s (1989) conception of explicit motives as self-attributed values, needs, goals, and personality characteristics (see Chapter 2.1.1). However, the definition of explicit motives is obviously broader and not limited to values. Furthermore, Schwartz's (1992) values are assumed to be non-independent and dynamically related, whereas explicit motive classes are independent from another. Finally, Schwartz' (1992) value dimensions differ from explicit motive classes regarding their organization as well as their specific content. Personal values are often organized in a circumplex model consisting of ten value categories (cf. Schwartz, 2007) and the principal axes of conservation vs. openness and self-enhancement vs. self-transcendence. In contrast, explicit motives are organized in three broad categories comprising various subcategories. While these subcategories partially overlap with personal values, value features judged important in one typology are neglected in the other. For example, while the explicit need for affiliation entails self-attributed goals to

initiate and maintain friendships (cf. Chapter 2.1.5), a corresponding value category in Schwartz's (1992) typology is missing. However, the personal value of benevolence entails aspects of explicit need for affiliation, namely enhancing the welfare of people with whom one is in frequent personal contact. Personal values are measured with the explicit Personal Values Questionnaire (PVQ; Schwartz, Melech, Lehmann et al., 2001), which so far has not been related to explicit motive measures in a systematic way.

Transferring the methods Biber et al. (2008) used for personal values to the domain of explicit motives, I measured both self-attributed motives and preferences for relational models to test hypotheses concerning specific correlations between the two concepts according to the results of study one (see Chapter 3.2) and the theoretical assumptions made by Fiske (1991, 1992). That is, I hypothesized that *preferences for CS are associated with the explicit affiliation motive (*Hypothesis 2.1*); preferences for AR are associated with the explicit power motive (*Hypothesis 2.2*); and preferences for MP are associated with the explicit achievement motive (*Hypothesis 2.3*).*

Moreover, explicit motives should predict cognitive choices regarding the relational structures individuals prefer (cf. Kehr, 2004b; McClelland, 1985; cf. Chapter 2.1.4), because explicit motives are conceptualized as stable, trait-like individual dispositions (McClelland et al., 1989) and have been shown to affect the formation of cognitive preferences for categories of incentives that are perceived as subjectively important (Brunstein & Maier, 2005; Kehr, 2004b). Therefore, I hypothesized that *the strength of the explicit need for Affiliation (san Affiliation) predicts preferences for relationships structured according to the relational model CS* (Hypothesis 3.4); that *the strength of the explicit need for Power (san Power) predicts preferences for relationships structured according to the relational model AR* (Hypothesis 3.5); and that *the strength of the explicit need for Power (san Power) predicts preferences for relationships structured according to the relational model AR* (Hypothesis 3.5).

3.3.1.2 Method

The present study was part of a larger experiment on the effects of various games, pictures, and measurement tools on flow experience. Prior to this assessment the participants filled out some questionnaires measuring personality and relational variables. 109 undergraduate students (50 female; $M_{age} =$ 23.72, SD_{age} = 4.27; German native speakers) participated in exchange for course credit.

Participants were seated in front of a computer screen. They were told that they would take part in a study on the aptitude of different games for psychological testing and that they should follow the instructions provided on the screen. After they had created a personal ID code they first filled in the adapted German version of the Personality Research Form (PRF; Jackson, 1974; German version by Stumpf, Angleitner, Wieck, Jackson, & Beloch-Till, 1985) and subsequently the adapted German version of the Relationship Profile Scale (RPS; Haslam, Reichert, & Fiske, 2002; German version by Biber et al., 2008). PRF items were presented in random order. RPS descriptions were randomized, but the order of their corresponding items (see below) was fixed.

The PRF assesses the self-attributed needs for achievement, affiliation, and dominance (power) on 16-item scales with a binary answer format. These scales were developed to measure the same motivational themes that are assessed by picture tests, but via direct forced-choice questions. The PRF has been widely used in studies on explicit values and motives (e.g., Brunstein, et al., 1998; Emmons & McAdams, 1991; Kehr, 2004a). Participants are instructed to respond to different statements about personal values, habits, and preferences by indicating if the statements are true or false (1/0). All items of the motive subscales of the PRF (Stumpf et al., 1985) are listed in Appendix B. Explicit motive dispositions are represented by the sum scores of the respective subscales, ranging from 0 (very low disposition) to 16 (very high disposition).

In the RPS (Haslam et al., 2002), participants read brief prototypical descriptions of the basic relational models and subsequently answer four questions regarding the respective relational model on Likert scales ranging from 1 (*Not at all / Never*) to 7 (*Extremely / All*

the time): How satisfied are you with your relationships that are like this? How important is it to you to have relationships of this kind? In this kind of relationship, how often do you find it difficult to know how to behave? How often do you find that you try to have this kind of relationship with someone but it doesn't work? Haslam et al. (2002) state that the RPS assesses "participants' difficulties with, and motivational investment in, the four RMs" (p. 24). In the German Version of the RPS (Biber et al., 2008) there are nine items per relational model: Four items translated from the original scale (Haslam et al, 2002) and five additional German items. Biber et al. (2008) state that the German version of the RPS assesses motivational tendencies to engage in the basic relational models. Participants are instructed to read a particular description and subsequently indicate their agreement with each of the following nine statements concerning this description on Likert scales ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). To avoid the tendency of participants towards mean responses, I adapted the response format of the German RPS to a Likert scale ranging from 1 (*strongly disagree*) to 10 (*strongly agree*). All German RPS items and the German RM descriptions are listed in Appendix C.

In the RPS, AR is split into a description of the participant being in the superior position (AR$^+$) and a description of the participant being in the inferior position (AR$^-$). For several reasons, I decided to combine the two scales to a general AR scale by averaging all AR items. First, I wanted to measure preferences for some type of relational structure, not for some hierarchical position within this structure. The RPS distinguishes hierarchical positions. However, instead of fundamentally changing an established scale, I decided to work with the given items. I expected that the average preference for being part of a hierarchy is determined by individual preferences for both high and low positions in hierarchies. This expectation is in line with Fiske's (1992) reasoning that the desire to be part of AR relations is driven by a set of motives related to Murray's (1938) needs for power and deference. Thus, to map the whole motivational scope of AR, it is important to consider both preferences for superior positions and preferences for inferior positions.

Second, I wanted to align the methods of the present study with the methods of the other studies while at the same time remaining flexible and not losing the original information the RPS is designed to provide. For example, in Study 4 (cf. Chapter 3.3.3) I used the IRM (Vodosek, 2009), which does not distinguish hierarchical positions in AR relations. However, in Study 6 (cf. Chapter 3.4.1) I used the descriptions of the RPS to explicitly distinguish the motivational effects of AR$^+$ and AR$^-$.

Third, combining the items for AR$^+$ and AR$^-$ resulted in a reliable scale ($\alpha = .84$) that probably reflects the desire to be part of an AR relationship better than any of the AR subscales. In sum, the combination of the two subscales serves the purpose of the current studies. However, I will revisit differential motivational effects on AR$^+$ and AR$^-$ preferences with extended analyses in Chapter 3.4.3. There I test the assumption that, at least explicitly, AR$^+$ is more in line with the contemporary conception of power motivation (McClelland et al., 1989; Winter, 1973, 2010) than AR$^-$.

3.3.1.3 Results

After recoding reverse coded items in both questionnaires, I calculated the mean scores of the PRF and RPS subscales. In addition I combined the AR$^+$ and AR$^-$ scales to a general AR scale. Reliabilities (Cronbach's α) and descriptive statistics of the PRF and RPS scales are presented in Table 2. All RPS subscales showed sufficient scale reliabilities ($\alpha > .70$). In contrast, the PRF subscales *san* Achievement ($\alpha = .70$) and *san* Affiliation ($\alpha = .65$) showed (marginally) sub-standard scale reliabilities.

Before calculating bivariate correlations between relational models and explicit motives I tested potential effects of age and gender on all variables presented in Table 2. The results were not significant. The results of the correlational analysis supported hypotheses 2.1 and 2.2: Individual preferences for CS correlated significantly with explicit need for affiliation and individual preferences for AR correlated significantly with explicit need for power. Although there was a tendency for MP preferences to be associated with the

explicit need for achievement, the correlation was not significant. Thus, Hypothesis 2.3 was not supported. Correlations of all variables are presented in Table 3.

Table 2

Means, Standard Deviations, and Confidence Intervals (95%) of Subscales in Study 2.

Subscale	α	*M*	*SD*	95% CI low	95% CI high
san Ach	.70	.63	.19	.60	.67
san Aff	.65	.78	.16	.75	.81
san Pow	.80	.59	.23	.55	.64
AR	.84	4.52	1.26	4.28	4.76
CS	.77	7.45	1.24	7.21	7.68
EM	.93	6.35	2.08	5.96	6.75
MP	.89	2.79	1.63	2,48	3.10

Note. N = 109; *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.

Table 3

Correlations of Explicit Motives (PRF) and Relational Preferences (RPS) in Study 2.

	1.	2.	3.	4.	5.	6.	7.
1. *san* Ach	--						
2. *san* Aff	.07	--					
3. *san* Pow	.18	.22*	--				
4. CS	-.16	**.25****	-.17	--			
5. AR	.04	.06	**.27****	-.01	--		
6. EM	.07	-.03	.02	.04	-.06	--	
7. MP	**.09**	-.19	.10	-.28**	.30**	-.02	--

Note. N = 109. *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent correlations corresponding to Hypotheses 2.1, 2.2., and 2.3. *p < .05; **p < .01.

In order to test Hypothesis 3.4 I conducted a hierarchical multiple regression analysis (HMRA) with preference for CS as the dependent variable. In the first step, I controlled for the effects of AR, EM, and MP on CS preferences[1]. In the second step, I included *san* Achievement, *san* Affiliation, and *san* Power as predictors. Including the other models as predictors in step 1 had a significant overall effect on CS preferences, $F(3, 105) = 3.20$, $p < .05$, corrected $R^2 = .06$, $(1-\beta) = .41$, as had the inclusion of the explicit motives in step 2, $\Delta F(3, 102) = 3.61$, $p < .05$, $\Delta R^2 = .09$, $(1-\beta) = .73$. *San* Affiliation had a significant effect on CS preferences, $\beta = .25$, $t(102) = 2.63$, $p = .01$.

Likewise, to test Hypothesis 3.5 I conducted an HMRA with preference for AR as the dependent variable. In the first step, I controlled for the effects of CS, EM, and MP on AR preferences. In the second step, I included *san* Achievement, *san* Affiliation, and *san* Power as predictors. Including the other models as predictors in step 1 had a significant overall effect on AR preferences, $F(3, 105) = 3.78$, $p < .05$, corrected $R^2 = .07$, $(1-\beta) = .48$. The inclusion of the explicit motives in step 2 had a marginally significant effect, $\Delta F(3, 102) = 2.60$, $p = .06$, $\Delta R^2 = .06$, $(1-\beta) = .52$. *San* Power had a significant effect on AR preferences, $\beta = .25$, $t(102) = 2.58$, $p = .01$.

To test Hypothesis 3.6 I conducted an HMRA with preference for MP as the dependent variable. In the first step, I controlled for the effects of CS, AR, and EM on MP preferences. In the second step, I included *san* Achievement, *san* Affiliation, and *san* Power as predictors. Including the other models as predictors in step 1 had a significant

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[1] Both methodological and theoretical reasons are indicative of this procedure. First, I wanted to assess the unique effects of each motive on each of the preferences for specific relational models. The relational preferences were in part correlated (see Table 3). Thus, regressing the preference for a particular model on the motives could have led to significant regression coefficients for motives which are in fact associated with a preference for some model that is correlated with the dependent variable. Second, in reality, the relational models and individual preferences for their implementation are supposed to act in combination within most interactions and relationships (Fiske, 1991; see Chapter 2.2.3). Most probably, relational preferences are a product of repeated positive experiences within relationships and interactions that include more than one relational model. Thus, relational preferences concerning the basic models should be correlated. However, in the present study, the pattern of results found in step 2 remained the same even without the inclusion of the preferences for the other relational models: CS preferences were predicted by *san* Affiliation only, $F(3, 105) = 4.84$, $p < .01$; $\beta = .30$, $t(105) = 3.17$, $p < .01$. AR preferences were predicted by *san* Power only, $F(3, 105) = 2.70$, $p = .05$; $\beta = .27$, $t(105) = 2.76$, $p < .01$. The effect of *san* Achievement on MP preferences was not significant, $F(3, 105) = 2.28$, $p = .08$; $\beta = .08$, $t(105) = .85$, $p = .40$.

overall effect on MP preferences, $F(3, 105) = 6.83$, $p < .01$, corrected $R^2 = .14$, $(1-\beta) = .86$. The inclusion of the explicit motives in step 2 had no significant effect, $\Delta F(3, 102) = .92$, $p = .44$, $\Delta R^2 = .02$, $(1-\beta) = .18$. *San* Achievement had no significant effect on MP preferences, $\beta = .05$, $t(102) = .55$, $p = .58$.

The results of the hierarchical regression analyses are presented in Tables 4-6. In sum, they show that the explicit motives *san* Affiliation and *san* Power are positively related to CS and AR, respectively. However, no evidence was found for the relationship between MP and *san* Achievement. These results are discussed in Chapter 3.3.5.

Table 4

Standardized Coefficients of Predictors and Explained Variance in an HMRA of CS on AR, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for CS	
Predictor	β Step 1	β Step 2
AR	.08	.10
EM	.04	.06
MP	-.30**	-.23*
san Ach		-.14*
san Aff		**.25***
san Pow		-.17
R^2	.08*	.17**
ΔR^2	.08*	**.09***

Note. $N = 109$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.4. *$p < .05$; **$p < .01$.

Table 5

Standardized Coefficients of Predictors and Explained Variance in an HMRA of AR on CS, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for AR	
Predictor	β Step 1	β Step 2
CS	.08	.10
EM	-.06	-.06
MP	.32**	.31**
san Ach		-.01*
san Aff		.03
san Pow		**.25***
R^2	.10*	.16**
ΔR^2	.10*	**.06[†]**

Note. $N = 109$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.5. [†]$p < .10$; *$p < .05$; **$p < .01$.

Table 6

Standardized Coefficients of Predictors and Explained Variance in an HMRA of MP on CS, AR, and EM (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for MP	
Predictor	β Step 1	β Step 2
CS	-.27**	-.23*
AR	.30**	.30**
EM	.07	.07
san Ach		**.05**
san Aff		-.15
san Pow		.01
R^2	.16**	.19**
ΔR^2	.16**	**.02**

Note. $N = 109$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.6. †$p < .10$; *$p < .05$; **$p < .01$

3.3.2 Study 3: Effects of explicit motives on relational preferences in an online survey

3.3.2.1   Introduction

In Study 2 I analyzed the effects of explicit motives on general relational preferences in a student sample. However, scale reliabilities of the PRF were low and relying on a student sample under laboratory conditions could have restricted both the ecological validity of the results and the variance of the variables. I therefore collected data on explicit motives and relational preferences as part of a larger online survey on team satisfaction, which was made public in several companies and two universities. In addition, concerning the assessment of relational preferences, I increased the efficiency of the RPS by including the four items with the highest item-scale correlations from the original set used in Study 2 and deleting the other items. For the assessment of explicit motives I used the Unified Motive Scales (UMS; Schönbrodt & Gerstenberg, 2012) in order to enhance both generalizability and reliability of the results. Moreover, the UMS distinguishes affiliation and intimacy motivation (cf. Chapter 2.1.5). This distinction is especially interesting for the assessment of interconnections between CS and affiliation tendencies, since CS is theoretically even more in line with preferences for intimate relationships than with general affiliative tendencies (see Chapter 2.2.3.1).

In accordance with Study 2, I tested Hypotheses 2.1, 2.2, and 2.3 concerning the specific correlations of motives and models, as well as Hypotheses 3.4, 3.5, and 3.6 regarding model-specific effects of explicit motives using a sample of persons outside the artificial reality of a psychological laboratory.

3.3.2.2   Method

The study was based on an online survey on team satisfaction. The survey was open to the public and accessible from January 30, 2012 until July 31, 2012 on the website of the Chair of Psychology, TUM School of Management. It was promoted by advertising in several undergraduate lectures and four companies. All questionnaires in the survey were in German. Before the team satisfaction survey, participants completed several

questionnaires concerning personality and social variables. Both UMS and RPS were set at the beginning of the survey, immediately after a short BIG 5 personality questionnaire. From the 263 persons who started the survey, 187 (71.10%) completed both the UMS and the RPS. 84 persons were male, 61 persons were female, 42 persons did not specify their gender. Mean age was 30.76 ($SD = 6.36$). The native language of 82.76% of the persons was German (17.42% other languages). All participants indicated that they speak fluent German. 31.72% were non-students, 68.28% were students.

I applied the 30-item version of the UMS. It includes 18 statements and 12 goals, measuring *san* Achievement, *san* Affiliation, *san* Intimacy, *san* Power, and *sa* Fear on six items each. Participants rate their agreement with the 18 statements on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). In accordance, they rate the subjective importance of the 12 goals on a 6-point Likert scale ranging from 1 (*not important*) to 6 (*extremely important*). I randomized the order of the 30 items and kept the randomized order constant across participants.

Although the RPS version I used in Study 2 showed satisfactory scale reliabilities, I tried to increase the efficiency of the RPS in the online survey by using only the four items with the highest average item-scale correlations. These items were: (item 1) *Es ist sehr wichtig für mich, diese Beziehung zu haben* (average corrected r_{is} = .63); (item 2) *Ich bin mit dieser Art von Beziehung sehr zufrieden* (average corrected r_{is} = .68); (item 3) *Ich bemühe mich aktiv, diese Art von Beziehung einzugehen* (average corrected r_{is} = .68); and (item 4) *Ich finde diese Art von Beziehung angenehm* (average corrected r_{is} = .72). In addition to having the highest average item-scale correlations, these four items represent cognitive preferences (item 1) towards the models, affective preferences (item 4) towards the models, behavioral choices regarding the models (item 3), and satisfaction with the models (item 2). Thus, they are able to efficiently capture a great bandwidth of relational drivers. All German and English RPS items are listed in Appendix C. Analogous to the UMS, I randomized the order of the RPS items before the survey, but kept item order constant across participants.

3.3.2.3   Results

After recoding reverse coded items contained in the UMS, I calculated the mean scores of the UMS and RPS subscales. As in Study 2, I combined the AR$^+$ and AR$^-$ scales to a general AR scale. Reliabilities (Cronbach's α) and descriptive statistics of the UMS and RPS scales are presented in Table 7.

Table 7

Reliabilities, Means, Standard Deviations, and Confidence Intervals (95%) of Subscales in Study 3.

Subscale	α	*M*	*SD*	95% CI low	95% CI high
san Ach	.86	4.50	.90	4.37	4.63
san Aff	.81	4.48	.81	4.37	4.60
san Int	.81	4.84	.85	4.71	4.96
san Pow	.85	3.71	.96	3.57	3.85
sa Fear	.80	3.40	.97	3.26	3.54
AR	.88	4.72	1.79	4.46	4.98
CS	.92	7.82	2.08	7.52	8.11
EM	.94	7.23	2.34	6.89	7.56
MP	.95	4.04	2.43	3.69	4.39

Note. *N* = 187; *san* Ach = explicit need for achievement, *sa* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power, *sa* Fear = self-attributed fear, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.

All RPS subscales showed very good scale reliabilities (α > .85). Reliabilities of the UMS subscales were good (all α's > .80).

Before calculating bivariate correlations between relational models and explicit motives I tested potential effects of age and gender on all variables presented in Table 7. The results were not significant. The results of the correlational analysis supported Hypotheses 2.1, 2.2, and 2.3: Individual preferences for CS correlated significantly with *san* Affiliation and *san* Intimacy. Individual preferences for AR correlated significantly with *san* Power. Individual preferences for MP correlated significantly with *san* Achievement.

Surprisingly, individual preferences for EM showed correlations with *san* Affiliation and *san* Intimacy. Correlations of all variables are presented in Table 8.

Table 8

Correlations of Explicit Motive Scales (UMS) and Relational Preferences (RPS) in Study 3.

	1.	2.	3.	4.	5.	6.	7	8.	9.
1. *san* Ach	--								
2. *san* Aff	.20**	--							
3. *san* Int	.13	.40**	--						
4. *san* Pow	.56**	.04	-.21**	--					
5. *sa* Fear	.02	.12	.29**	. 01	--				
6. CS	.13	**.36**	**.54**	-.03	.17*	--			
7. AR	.27**	-.08	.01	**.32**	.05	.01	--		
8. EM	.17*	.31**	.27**	.06	.16*	.18*	.02	--	
9. MP	**.20**	.00	-.17*	.31**	.07	-.16*	.29**	.06	--

Note. N = 187. *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, *san* Int = explicit need for Intimacy, *sa* Fear = self-attributed fear, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent correlations corresponding to Hypotheses 2.1, 2.2., and 2.3. *p < .05; **p < .01.

Analogous to the statistical analyses in Study 2, I conducted an HMRA with preference for CS as the dependent variable in order to test Hypothesis 3.4. I controlled for the effects of AR, EM, MP, and *sa* Fear on CS preferences in the first step. In the second step, I included *san* Achievement, *san* Affiliation, *san* Intimacy, and *san* Power as predictors. Including the other models and *sa* Fear as predictors in step one had a significant overall effect on CS preferences, $F(4, 182) = 4.23$, $p < .01$, corrected $R^2 = .07$, $(1-β) = .72$, as had the inclusion of the explicit motives in step 2, $ΔF(8,178) = 16.22$, $p < .01$, $ΔR^2 = .24$, $(1-β) = 1.00$. *San* Affiliation had a significant effect on CS preferences, $β = .17$, $t(178) = 2.41$, $p < .05$. The effect of *san* Intimacy on CS was even stronger, $β = .46$, $t(178) = 6.04$, $p < .01$. All other coefficients were not significant.

Likewise, to test Hypothesis 3.5 I conducted an HMRA with preference for AR as the dependent variable. In the first step, I controlled for the effects of CS, EM, MP, and *sa* Fear on AR preferences. In the second step, I included *san* Achievement, *san* Affiliation, *san* Intimacy, and *san* Power as predictors. Including the other models and *sa* Fear as predictors in step one had a significant overall effect on AR preferences, $F(4, 182) = 4.48$, $p < .01$, corrected $R^2 = .07$, $(1-\beta) = .72$ as had the inclusion of the explicit motives in step 2, $\Delta F(8, 178) = 5.23$, $p < .01$, $\Delta R^2 = .15$, $(1-\beta) = 1.00$. *San* Power had a significant effect on AR preferences, $\beta = .22$, $t(178) = 2.58$, $p < .05$.

To test Hypothesis 3.6 I conducted an HMRA with preference for MP as the dependent variable. In the first step, I controlled for the effects of CS, AR, EM, and *sa* Fear on MP preferences. In the second step, I included *san* Achievement, *san* Affiliation, *san* Intimacy, and *san* Power as predictors. Including the other models and *sa* Fear as predictors in step one had a significant overall effect on AR preferences, $F(4, 182) = 6.38$, $p < .01$, corrected $R^2 = .10$, $(1-\beta) = .90$, as had the inclusion of the explicit motives in step 2, $\Delta F(4, 178) = 3.41$, $p = .01$, $\Delta R^2 = .06$, $(1-\beta) = .79$. Contrary to my expectations, but in line with the results of Study 2, *san* Achievement had no significant effect on MP preferences, $\beta = .05$, $t(178) = .54$, $p = .59$. Instead, *san* Power had a marginally significant positive effect, $\beta = .23$, $t(178) = 1.92$, $p = .06$.[2]

I conducted an HMRA for EM. Analogous to the other regression analyses, in the first step, I controlled for the effects of CS, AR, MP, and *sa* Fear on EM preferences. In the second step, I included *san* Achievement, *san* Affiliation, *san* Intimacy, and *san* Power as predictors. Including the other models and *sa* Fear as predictors in step one had a significant overall effect on EM preferences, $F(4, 182) = 2.72$, $p < .05$, corrected $R^2 = .04$, $(1-\beta) = .42$, as had the inclusion of the explicit motives in step 2, $\Delta F(4, 178) = 4.44$, $p < .01$, $\Delta R^2 = 09$, $(1-\beta) = .94$. *San* Affiliation had a significant effect on EM preferences,

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[2] Not controlling for the preferences for the other relational models in the first step did not change the pattern of results. CS preferences were still predicted by *san* Affiliation, $F(4, 182) = 21.30$, $p < .01$; $\beta = .16$, $t(182) = 2.41$, $p < .05$ and *san* Intimacy, $\beta = .49$, $t(182) = 6.85$, $p < .01$. AR preferences were predicted by *san* Power only, $F(4, 182) = 7.38$, $p < .01$; $\beta = .28$, $t(182) = 3.13$, $p < .01$. MP was not predicted by *san* Achievement, $F(4, 182) = 5.85$, $p < .01$; $\beta = .07$, $t(182) = .81$, $p = .42$, but instead by *san* Power, $\beta = .24$, $t(182) = 2.70$, $p < .01$.

$\beta = .22$, $t(178) = 2.71$, $p < .01$. *San* Intimacy had a marginally significant effect on EM preferences, $\beta = .16$, $t(178) = 1.74$, $p = .08$.

The results of the hierarchical regression analyses with CS, AR, and MP as dependent variables are presented in Tables 9-11. With the exception of the *san* Affiliation effect on EM, Study 3 showed the same pattern of results as Study 2. Concerning the included explicit motives, the significant effects of *san* Affiliation and *san* Intimacy on CS and the effects of *san* Power on AR were exclusive as to participants' respective other explicit motives. Thus, in Study 3 I replicated the results of Study 2 using the same theoretical concepts, but different measures with a different sample in a different situation. Thereby, the unique effects of explicit motives on specific relational models were even more pronounced as in Study 2. The results are discussed in Chapter 3.3.5.

Table 9

Standardized Coefficients of Predictors and Explained Variance in an HMRA of CS on AR, EM, MP, and Self-attributed Fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

	Preference for CS	
Predictor	β Step 1	β Step 2
AR	.06	.02
EM	.17*	.00
MP	-.19*	-.11
sa Fear	.15*	.02
san Ach		.01
san Aff		**.17***
san Int		**.46****
san Pow		.09
R^2	.09**	.33**
ΔR^2	.09**	**.24****

Note. $N = 187$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.4. *$p < .05$; **$p < .01$.

Table 10

Standardized Coefficients of Predictors and Explained Variance in an HMRA of AR on CS, EM, MP, and Self-attributed fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

	Preference for AR	
Predictor	β Step 1	β Step 2
CS	.05	.03
EM	-.01	-.02
MP	.30**	.23**
sa Fear	.02	.01
san Ach		.12
san Aff		-.17*
san Int		.13
san Pow		**.22***
R^2	.09**	.19**
ΔR^2	.09**	**.10***

Note. $N = 187$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.5. *$p < .05$; **$p < .01$.

Table 11

Standardized Coefficients of Predictors and Explained Variance in an HMRA of MP on CS, AR, EM, and Self-attributed Fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

	Preference for MP	
Predictor	β Step 1	β Step 2
CS	-.18*	-.14[†]
AR	.29**	.23**
EM	.07	.08
sa Fear	.07	.10
san Ach		**.05**
san Aff		.08
san Int		-.14
san Pow		.17[†]
R^2	.12**	.19**
ΔR^2	.12**	**.06***

Note. $N = 187$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.6. [†]$p < .10$; *$p < .05$; **$p < .01$.

3.3.3 Study 4: Effects of implicit motives on preferences for relational structures in student work teams

3.3.3.1   Introduction

Although they can be categorized according to the same dimensions, explicit and implicit motives are empirically uncorrelated (cf. Brunstein et al., 1999; Spangler, 1992) and operate within different systems (McClelland et al., 1989; see Chapter 2.1.1) or different levels of information processing (Schultheiss, 2001; see Chapter 2.1.2). Explicit motives are verbally represented, activated by social demands and extrinsic rewards, and predictive of conscious choices. In contrast, implicit motives are nonverbally processed, aroused by activity-inherent affectively charged incentives, and predictive of spontaneous, pleasurable behavior. Whereas explicit motives lead to cognitive preferences regarding subjectively important activities and tasks, implicit motives fuel affective preferences for pleasurable activities and tasks (Kehr, 2004b; see Chapter 2.1.4).

On an abstract level, interpersonal relationships consist of a set of relations and meaningful operations between people (cf. Chapter 2.2.3.1). These relations and operations contain many features which can serve as affectively charged incentives for the arousal of implicit motives (Stanton et al., 2010; Sullivan, 1953). Relationships structured according to specific relational models contain motive-specific incentives that are meaningful within these relationships, but not within other relationships containing different relational models. Implicit motives represent associative networks connecting situational incentives with basic affective reactions and arousal of implicit motives is manifest in affective preferences towards these incentives (Kehr, 2004b). Consequently, if relationships structured according to specific relational models contain motive-specific incentives, then affective preferences for specific relational models should correspond to specific implicit motives. Fiske (1991, 1992) hypothesized that there are specific interconnections between relational models and implicit motives (see Chapter 2.2.6). Study 1, in which I applied scoring methods originally used in implicit motive measurement to assess motive content in theoretical characterizations of the basic relational models supported these hypotheses and showed that the theorizing about relational models very

much implies direct linkages between implicit motives and relational models. Moreover, Study 1 lent support to the assumption that the basic relational models comprise incentives that are specifically tuned to certain classes of implicit motives.

After having showed that theoretical characterizations of relational models correspond to specific implicit motives (Study 1) and that explicit measures of motives correlate with specific relational models (Studies 2 and 3), in the present study I intended to test whether these findings can be generalized to implicit motives measures. The present study was conducted with a large sample of Dutch business students. Over the course of one semester, these students were assigned to multinational teams of three or four persons. I expected that their implicit motive dispositions affect their preferences concerning the ideal relational models that should operate in their groups. Therefore, at the beginning of the semester, before students actually started working in teams, I assessed their implicit motive dispositions. At a later point, I measured their preferences for the basic relational models in their work team. According to Hypothesis 2.4, I expected that *preferences for CS in their work team are correlated with their implicit affiliation motive*. Likewise, I expected that *preferences for AR in their work team are correlated with their implicit power motive* (Hypothesis 2.5) and that *preferences for MP in their work team are correlated with their implicit achievement motive* (Hypothesis 2.6). Moreover, in line with Hypothesis 3.1 I expected that *the strength of the implicit need for affiliation predicts preferences for relationships structured according to the relational model CS*; that *the strength of the implicit need for power predicts preferences for relationships structured according to the relational model AR* (Hypothesis 3.2); and that *the strength of the implicit need for achievement predicts preferences for relationships structured according to the relational model MP* (Hypothesis 3.3).

3.3.3.2   Method

Study 4 was integrated in a longitudinal study on teamwork. Participants were business students at the Rotterdam School of Management (RSM), Erasmus University Rotterdam.

Assessment of implicit motives took place from September 12 2012 until September 21 2012. During this time, participants had access to an online survey hosted at the TUM School of Management, Technische Universität München (TUM) as part of course fulfillment. They generated an individual code that later served to match the obtained implicit motive data to the relational model data assessment via an online survey hosted at the RSM from September 26 until October 5, 2012. From the original 456 participants who started the survey on implicit motives, five persons had to be excluded from further analysis, because they finished the survey on September 26, 2012, or later. 415 participants finished the relational models survey at RSM. Unfortunately, due to technical problems, not all codes could be matched. In the end, 379 complete datasets (83.11% of the 456 participating in the TUM survey) could be matched and were available for further analyses. From the remaining participants, 164 (43.30%) were female. Mean age was 18.73 ($SD = 2.24$). Since data were collected in an international business course, the sample comprised people from diverse countries

In order to assess participants' dispositional implicit motives, I administered a standard PSE (Pang & Schultheiss, 2005; Schultheiss et al., 2008). Like in other associative measures of implicit motives (see Chapter 2.1.6), in the PSE participants view pictures of interpersonal situations that are assumed to arouse specific implicit motives. Subsequently they are instructed to write imaginative stories in which they should take into account the emotions and the behavior of the depicted persons, describing what is supposed to be happening in the pictures (Pang & Schultheiss, 2005; Smith, 1992). The resulting stories are then content-coded using established scoring systems. Following suggestions by Pang and Schultheiss (2005) and Pang (2010), in Study 4 I selected the pictures *ship captain, couple by river, women in laboratory,* and *trapeze artists* taken from Smith (1992) for three reasons: First, all four pictures have been used extensively in past research on implicit motives (e.g., King, 1995; Lundy, 1988; Zurbriggen, 2000). Second, these pictures have been pre-tested (Pang & Schultheiss, 2005) and revealed high motive-specific content (*ship captain*: high mean *n* Power scores; *couple by river*: high

mean *n* Affiliation scores; *women in laboratory*: high *n* Achievement scores; *trapeze artists*: both high *n* Power and high *n* Achievement scores at medium *n* Affiliation scores; cf. Schultheiss & Pang, 2007). Finally, they depict social situations including at least two persons. To keep the survey short for both participants and coders, I administered the minimum number of pictures according to Schultheiss and Pang (2007).

Participants followed the standard instructions for computer administration of the PSE (cf. Schultheiss & Pang, 2007). Picture order was randomized for each participant. Each picture was shown for 10 seconds and then replaced by a screen with writing instructions according to Schultheiss et al. (2008) and a text box. After 4 minutes, the following text occurred in the upper half of the screen: "Your time is over in a minute. When you are finished, please press [continue]". In addition, a "continue"-button was provided. After another minute, the text switched to "Time is over. Please finish the sentence and continue with the next picture." However, in line with PSE assessment norms, the screen did not automatically switch to the next picture, so that participants could go on writing as long as they wanted.

The resulting PSE protocols were content-coded by three expert scorers who were blind to the hypotheses. Each scorer coded a subset of the 1516 stories. The scorers coded the PSE stories regarding their *n* Achievement, *n* Affiliation, and *n* Power content using Winter's (1994) *Manual for Scoring Motive Imagery in Running Text*. Mean raw scores of motive dispositions per participant were $M = 1.54$ for *n* Achievement ($SD = 1.19$), $M = 2.06$ for *n* Affiliation ($SD = 1.28$), and $M = 2.01$ for *n* Power ($SD = 1.21$). Average word count per participant was 359.22 ($SD = 139.37$).

As in Study 1, word count was significantly correlated with the obtained raw motive scores for *n* Achievement ($r = .28$, $p < .01$), *n* Affiliation ($r = .29$, $p < .01$), and *n* Power ($r = .33$, $p < .01$). Therefore, I controlled for the influence of text length on the motive scores by means of simple regression analyses in the respective motive domains and converted the residuals to *z*-scores (cf. Cohen et al., 2003).

I measured the preferences for each of the basic relational models in the work team with a scale developed by Haslam and Fiske (1999) and adapted to its current version by Vodosek (2009), which I denote Ideal Relational Models Scale (IRM). The IRM scale directly asks for relational model preferences on a team level and thus matches the purpose of the current study better in comparison to the previously used RPS, where relational preferences are measured on an individual level. The IRM consists of 18 items measuring behavior which is typical for teams structured according to one of the four basic relational models (see Appendix C). Participants were asked to indicate how often a given item should be true in an ideal group on Likert scales ranging from 1 ("*None of the time*") to 5 ("*Always*"). Item order of the IRM was kept constant across participants. I calculated mean scores for each basic relational model in a subjectively ideal group for each participant by summing up the answers to relational model specific items and dividing the sum by the number of items.

3.3.3.3 Results

Mean scores of the IRM subscales were $M = 3.66$ ($SD = .34$) for CS, $M = 2.73$ ($SD = .46$) for AR, $M = 3.40$ ($SD = .45$) for EM, and $M = 2.80$ ($SD = .52$) for MP. Reliabilities of the four subscales were $\alpha = .70$ for CS, $\alpha = .84$ for AR, $\alpha = .81$ for EM, and $\alpha = .72$ for MP.

The results of the correlation analysis supported Hypotheses 2.4 and 2.5. Individual preferences for CS correlated significantly with implicit need for affiliation. Individual preferences for AR correlated significantly with implicit need for power. Individual preferences for MP did not correlate with implicit need for achievement. Therefore, Hypothesis 2.6 was not supported in the present study. Contrary to my expectations, individual preferences for MP correlated significantly with implicit need for power. Individual preferences for EM showed a significant correlation with implicit need for affiliation, thus paralleling the findings of Study 3 regarding EM and explicit need for affiliation. Correlations of all variables are presented in Table 12.

Table 12

Correlations of PSE Scores and Relational Preferences (IRM) in Study 4.

	1.	2.	3.	4.	5.	6.	7.
1. *n* Ach	--						
2. *n* Aff	.04	--					
3. *n* Pow	-.04	.04	--				
4. CS	.02	**.28****	.07	--			
5. AR	.01	.04	**.21****	.00	--		
6. EM	.06	.14**	-.05	.27**	-.18**	--	
7. MP	**.00**	.08	.17**	.14**	.31**	-.03*	--

Note. $N = 379$. *n* Ach = implicit need for achievement, *n* Aff = implicit need for affiliation, *san* Pow = implicit need for power, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent correlations corresponding to Hypotheses 2.4, 2.5., and 2.6. $^*p < .05$; $^{**}p < .01$.

In order to test Hypothesis 3.1 I conducted an HMRA with preference for CS in the ideal future team as the dependent variable. Like in the previous studies, I controlled for the effects of AR, EM, and MP on CS preferences in the first step. In the second step, I included the z-standardized scores for *n* Achievement, *n* Affiliation, and *n* Power as predictors. Including the other models as predictors in step one had a significant overall effect on CS preferences, $F(3, 375) = 13.122$, $p < .01$, corrected $R^2 = .09$, $(1-\beta) = 1.00$, as had the inclusion of the implicit motives in step 2, $\Delta F(3, 372) = 8.08$, $p < .01$, $\Delta R^2 = .06$, $(1-\beta) = .99$. *n* Affiliation had a significant effect on CS preferences, $\beta = .23$, $t(372) = 4.75$, $p < .01$.

To test Hypothesis 3.2 I conducted an HMRA with preference for AR in the ideal future team as the dependent variable. In the first step, I controlled for the effects of CS, EM, and MP on AR preferences. In the second step, I included the z-standardized scores for *n* Achievement, *n* Affiliation, and *n* Power as predictors. Including the other models as predictors in step one had a significant overall effect on AR preferences, $F(3, 375) = 17.74$, $p < .01$, corrected $R^2 = .12$, $(1-\beta) = 1.00$, as had the inclusion of the

implicit motives in step 2, ΔF(3, 372) = 3.81, p = .01, ΔR^2 = .03, (1-β) = .79. *n* Power had a significant effect on AR preferences, β = .16, t(372) = 3.25, p < .01.

To test Hypothesis 3.3 I conducted an HMRA with preference for MP in the ideal future team as the dependent variable. In the first step, I controlled for the effects of CS, AR, and EM on MP preferences. In the second step, I included the z-standardized scores for *n* Achievement, *n* Affiliation, and *n* Power as predictors. Including the other models as predictors in step one had a significant overall effect on MP preferences, F(3, 375) = 15.82, p < .01, corrected R^2 = .11, (1-β) = 1.00. The inclusion of the implicit motives in step 2 had no significant effect, ΔF(3, 372) = 1.36, p = .26, ΔR^2 = .02, (1-β) = .58. *n* Achievement had no significant effect on MP preferences, β < .01, t(372) = .07, p = .95. However, *n* Power had a marginally significant effect on MP, β = .10, t(372) = 1.93, p = .06.[3]

Further analysis: Although initially I had no hypotheses regarding EM, the results of Study 3 and the parallel results of the correlation analysis in the present study led to further analyses of the relationship between EM and affiliation. I conducted an HMRA with preference for EM in the ideal future team as the dependent variable. In the first step, I controlled for the effects of CS, AR, and MP on EM preferences. In the second step, I included the z-standardized scores for *n* Achievement, *n* Affiliation, and *n* Power as predictors. Including the other models as predictors in step one had a significant overall effect on EM preferences, F(3, 375) = 15.09, p < .01, corrected R^2 = .10, (1-β) = 1.00. However, the inclusion of the implicit motives in step 2 had no significant effect, ΔF(3, 372) = 1.36, p > .26, ΔR^2 = .01, (1-β) = .30. A full account of the hierarchical regression analyses is presented in Tables 13-15. The results are discussed in Chapter 3.3.5.

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[3] As in the previous studies, not controlling for the preferences for the other relational models in the first step did not change the pattern of results. CS preferences were still predicted by *n* Affiliation only, F(3, 375) = 5.99, p < .01; β = .21, t(375) = 5.52, p < .01 AR preferences were predicted by *n* Power only, F(4, 182) = 7.38, p < .01; β = .28, t(375) = 4.16, p < .01. MP was not predicted by *n* Achievement, F(3, 375) = 4.24, p < .01; β = .01, t(375) = .15, p = .88, but instead by *n* Power, β = .16, t(375) = 3.22, p < .01. It did, however, change the results for EM preferences, F(3, 375) = 3.31, p < .05, which were predicted by *n* Affiliation, β = .14, t(375) = 2.81, p < .01. This is probably due to the correlation between CS and EM, which could be attributed to a substitution of CS by EM in work relationships (see Chapter 3.3.5)

Table 13

Standardized Coefficients of Predictors and Explained Variance in an HMRA of CS on AR, EM, and MP (Step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for CS	
Predictor	β Step 1	β Step 2
AR	.01	-.01
EM	.28**	.24**
MP	.14**	.12*
n Ach		-.01
n Aff		**.23****
n Pow		.06
R^2	.10**	.15**
ΔR^2	.10**	**.06****

Note. *N* = 379. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.1. *$p < .05$; **$p < .01$.

Table 14

Standardized Coefficients of Predictors and Explained Variance in an HMRA of AR on CS, EM, and MP (step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (step 2).

	Preference for AR	
Predictor	β Step 1	β Step 2
CS	.01	-.01
EM	-.18**	-.17**
MP	.30	.27**
n Ach		.02
n Aff		.04
n Pow		**.16****
R^2	.12**	.15**
ΔR^2	.12**	**.03***

Note. *N* = 379. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.2. *$p < .05$; **$p < .01$.

Table 15

Standardized Coefficients of Predictors and Explained Variance in an HMRA of MP on CS, AR, and EM (Step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for MP	
Predictor	β Step 1	β Step 2
CS	.14**	.12*
AR	.30**	.28**
EM	-.01	-.01
n Ach		**.00**
n Aff		.03
n Pow		.10[†]
R^2	.11**	.12**
ΔR^2	.11**	**.01**

Note. *N* = 379. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.3. [†]$p < .10$; *$p < .05$; **$p < .01$

3.3.4 Study 5: Replication study. Effects of implicit and explicit motives on relational preferences in a laboratory setting

3.3.4.1   Introduction

Study 5 was set up to validate some of the previous results. As in Study 2, I chose a laboratory setting to measure both motives and preferred relational models of the participants. This time, however, I measured both implicit and explicit motives to test Hypotheses 2.1 to 3.6.

3.3.4.2   Method

108 teacher trainees (44 male, 64 female; $M_{age} = 23.67$, $SD_{age} = 3.35$) participated in a study on "teamwork". As the study was conducted in German, participants were required to be German native speakers. They entered the laboratory in pairs to engage in dyadic tasks. However, before the teamwork they were placed separately in cubicles to complete some individual tasks and questionnaires relating to "personality, creativity, and social variables".

Participants first completed the PSE. Administration procedures and picture cues were exactly oriented on Study 4 (see Chapter 3.3.3.1), with the only exception that this time the participants filled in the text boxes under controlled conditions in a lab at the TUM School of Management.

Analyses of the PSE data were oriented on Study 1. In the first step, two independent scorers who were blind to the hypotheses coded the PSE protocols. They received the protocols in random order. Previously, they had undergone coding training using the materials contained in Winter's (1994) scoring manual until they had achieved 85% agreement or better with calibration materials pre-scored by expert scorers. Their inter-rater reliability was 86% for n Achievement, 90% for n Affiliation, and 82% for n Power. In the second step, scoring disagreements were discussed and resolved. In the following analyses I used the concordant motive scores from the first step and the agreed-upon motives scores from this discussion. Mean raw scores of motive dispositions were

$M = 1.45$ for n Achievement ($SD = 1.38$), $M = 1.91$ for n Affiliation ($SD = 1.28$), and $M = 1.55$ for n Power ($SD = 1.24$). Average word count per participant was 349.97 ($SD = 104.50$).

Like in Studies 1 and 4, word count of the stories was significantly correlated with the obtained motive scores for achievement ($r = .19$, $p < .05$), affiliation ($r = .23$, $p < .05$), and power ($r = .36$, $p < .01$). I controlled for the influence of protocol length on implicit motive scores by means of simple regression analyses in the respective motive domains and converted the residuals to z-scores (cf. Cohen, et al., 2003).

Immediately after completing the PSE participants filled out the UMS and subsequently the RPS. The UMS contained the same items in the same previously randomized order as in Study 3. The RPS contained the original 45 items by Biber et al. (2008) used in Study 2.

In sum, Study 5 slightly differed from the previous studies in the following aspects: In Study 2, I used the PRF instead of the UMS. In addition, in the present study I assessed participants' implicit motives. Study 3 was an online survey, whereas the present study was carried out in a controlled laboratory setting. Furthermore, I used the original RPS scale adapted by Biber et al. (2008). Finally, the present study differed from Study 4 in the following ways: First, I assessed both implicit and explicit motives. Second, I examined a sample of German teacher trainees instead of a multinational sample of business students. Third, the study was conducted in German. And fourth, both motives and relational model preferences were assessed in a single session.

3.3.4.3 Results

Reliabilities (Cronbach's α) and descriptive statistics of the UMS and RPS scales are presented in Table 16. The results of the correlation analysis supported Hypotheses 2.1 and 2.2. Individual preferences for CS correlated significantly with implicit need for affiliation. Individual preferences for AR correlated significantly with implicit need for power. Hypotheses 2.4 and 2.5 were also supported. Individual preferences for CS correlated significantly with explicit need for affiliation. Individual preferences for AR

correlated significantly with explicit need for power. Individual preferences for MP correlated marginally significantly with implicit need for achievement ($r = .19$, $p = .054$). Therefore, Hypothesis 2.3 was supported. Although there was a tendency, individual preferences for MP did not correlate significantly with explicit need for achievement ($r = .15$, $p = .12$). Thus, although MP was consistently positively associated with both the explicit and the implicit achievement motive, Hypothesis 2.6 was not supported due to the smaller effect size in the explicit domain.

To test Hypotheses 3.1 to 3.6 I conducted separate hierarchical regression analyses with the relational preferences as dependent variables (for the procedures see Studies 2 to 4). In each hierarchical regression analysis I first included participants' preferences for the other relational models (step 1)[4] and subsequently their motive scores (step 2). The results of these analyses are presented in Tables 17-23.

Table 16

Means, Standard Deviations, and Confidence Intervals (95%) of Subscales in Study 5.

Subscale	α	*M*	*SD*	95% CI low	95% CI high
san Ach	.85	4.01	.84	3.85	4.17
san Aff	.86	4.50	.79	4.35	4.65
san Int	.74	4.96	.69	4.83	5.09
san Pow	.86	3.56	.90	3.38	3.73
sa Fear	.86	3.41	1.02	3.22	3.61
AR	.87	4.26	1.31	4.01	4.51
CS	.82	7.18	1.46	6.90	7.46
EM	.89	6.70	1.78	6.36	7.04
MP	.88	3.02	1.66	2.70	3.34

Note. $N = 108$; *san* Ach = explicit need for achievement, *sa* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power, *sa* Fear = self-attributed fear, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.

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[4] As in Studies 2 and 3, not including them as predictors did not change the pattern of results. Still, for the sake of consistency as well as for the theoretical and methodological reasons described in Chapter 3.3.1.3, I controlled for these preferences in the first step.

Table 17

Correlations of Explicit Motive Scales (UMS) and Relational Preferences (RPS) in Study 5.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. *n* Ach	--											
2. *n* Aff	.07	--										
3. *n* Pow	.14	-.04	--									
4. *san* Ach	.19*	-.13	.08	--								
5. *san* Aff	.06	.25**	-.06	.16†	--							
6. *san* Int	-.03	.15	.05	.06	.55**	--						
7. *san* Pow	.15	-.17	.05	.50**	.08	-.16†	--					
8. *sa* Fear	.03	.21*	-.07	-.26**	.04	.16†	-.16†	--				
9. CS	-.07	**.27***	.11	.04	**.31***	.34**	-.16†	.08	--			
10. AR	.14	-.03	**.26***	.20*	-.07	-.12	**.33***	-.12	-.09	--		
11. EM	.01	.13	.02	-.07	. 14	.15	-.09	.11	.00	.00	--	
12. MP	**.19†**	-.09	.18†	**.15**	-.22*	-.18†	.23*	-.12	-.12	.26**	-.11	--

Note. $N = 108$. *n* Ach = implicit need for achievement, *n* Aff = implicit need for affiliation, *san* Pow = implicit need for power, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, *san* Int = explicit need for Intimacy, *sa* Fear = self-attributed fear, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent correlations corresponding to Hypotheses 2.1, 2.2., and 2.3. $^{†}p < .10$, $^{*}p < .05$; $^{**}p < .01$.

Table 18

Standardized Coefficients of Predictors and Explained Variance in an HMRA of CS on AR, EM, and MP (Step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for CS	
Predictor	β Step 1	β Step 2
AR	-.06	-.10
EM	-.01	-.05
MP	-.10	-.09
n Ach		-.08
n Aff		**.28****
n Pow		.18†
R^2	.02	.12*
ΔR^2	.02	**.10***

Note. N = 108. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.1. *p < .05; **p < .01.

Table 19

Standardized Coefficients of Predictors and Explained Variance in an HMRA of AR on CS, EM, and MP (Step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for AR	
Predictor	β Step 1	β Step 2
CS	-.06	-.10
EM	.03	.01
MP	.26**	.20*
n Ach		.07
n Aff		.02
n Pow		**.23***
R^2	.07*	.13*
ΔR^2	.07*	**.06†**

Note. N = 108. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.2. †p < .10, *p < .05; **p < .01.

Table 20

Standardized Coefficients of Predictors and Explained Variance in an HMRA of MP on CS, AR, and EM (Step 1) and on the Implicit Motives for Achievement, Affiliation, and Power (Step 2).

	Preference for MP	
Predictor	β Step 1	β Step 2
CS	-.09	-.09
AR	.25**	.20*
EM	-.11	-.11
n Ach		**.14**
n Aff		-.05
n Pow		.12
R^2	.09*	.13*
ΔR^2	.09*	**.04**

Note. $N = 108$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 3.3. *$p < .05$; **$p < .01$.

Table 21

Standardized Coefficients of Predictors and Explained Variance in an HMRA of CS on AR, EM, MP, and Self-Attributed Fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

	Preference for CS	
Predictor	β Step 1	β Step 2
AR	-.06	-.01
EM	-.01	-.07
MP	-.09	-.01
sa Fear	.06	.04
san Ach		.09
san Aff		**.21**[†]
san Int		**.19**[†]
san Pow		-.19[†]
R^2	.02	.17*
ΔR^2	.02	**.15****

Note. $N = 108$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.4. [†]$p < .10$, *$p < .05$; **$p < .01$.

Table 22

Standardized Coefficients of Predictors and Explained Variance in an HMRA of AR on CS, EM, MP, and Self-attributed Fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

Predictor	Preference for AR	
	β Step 1	β Step 2
CS	-.06	-.01
EM	.04	.06
MP	.25*	.18[†]
sa Fear	-.09	-.05
san Ach		.05
san Aff		-.05
san Int		-.02
san Pow		**.26***
R^2	.08[†]	.15*
ΔR^2	.08[†]	**.07[†]**

Note. $N = 108$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.5. [†]$p < .10$, *$p < .05$; **$p < .01$.

Table 23

Standardized Coefficients of Predictors and Explained Variance in an HMRA of MP on CS, AR, EM, and Self-attributed Fear (Step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (Step 2).

Predictor	Preference for MP	
	β Step 1	β Step 2
CS	-.09	-.01
AR	.24*	.18[†]
EM	-.10	-.06
sa Fear	-.07	-.04
san Ach		**.06**
san Aff		-.21[†]
san Int		-.01
san Pow		.15
R^2	.09*	.15*
ΔR^2	.09*	**.06**

Note. $N = 108$. AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing, *sa* Fear = self-attributed fear, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Int = explicit need for intimacy, *san* Pow = explicit need for power. Bold numbers represent results corresponding to Hypothesis 3.6. [†]$p < .10$; *$p < .05$; **$p < .01$.

The results of the hierarchical regression analyses supported Hypotheses 3.1, 3.2, and 3.5. Surprisingly, the influence of *san* Affiliation on CS preferences was only marginally significant, $\beta = .21$, $t(99) = 1.87$, $p < .10$, as was the effect of *san* Intimacy, $\beta = .19$, $t(99) = 1.68$, $p < .10$. This result could be due to a suppressor effect of *san* Intimacy. In order to assess the joint influence of affiliation and intimacy on CS preferences I calculated a 3-step HMRA with AR, EM, and MP preferences as well as *sa* Fear in the first step; *san* Power and *san* Achievement in the second step; and *san* Affiliation as well as *san* Intimacy in the third step. The simultaneous inclusion of *san* affiliation and *san* intimacy in the third step had a significant effect on CS preferences, $\Delta F(2, 99) = 6.77$, $p < .01$, $\Delta R^2 = .17$, $(1-\beta) = .99$. I also conducted separate 2-step HMRAs with *san* Affiliation only and *san* Intimacy only (ceteris paribus). When I included *san* Affiliation, its effect on CS was significant, $\beta = .32$, $t(100) = 3.24$, $p < .01$ (overall R^2 in step 2 = .15, $p < .05$). When I included *san* intimacy instead, its effect on CS was also significant, $\beta = .31$, $t(100) = 3.13$, $p < .01$ (overall R^2 in step 2 = .14, $p < .05$). Thus, Hypothesis 3.4 was supported in Study 5.

In general, Studies 2-5 supported my hypotheses concerning empirical interconnections between CS and affiliation, as well as between AR and power (see *Figure 10).* The hypotheses concerning the link between MP and achievement were partly supported. Further analyses revealed that EM showed an inconsistent pattern of relationships to different motives. A summary of the results in Studies 2-5 is provided in Table 24.
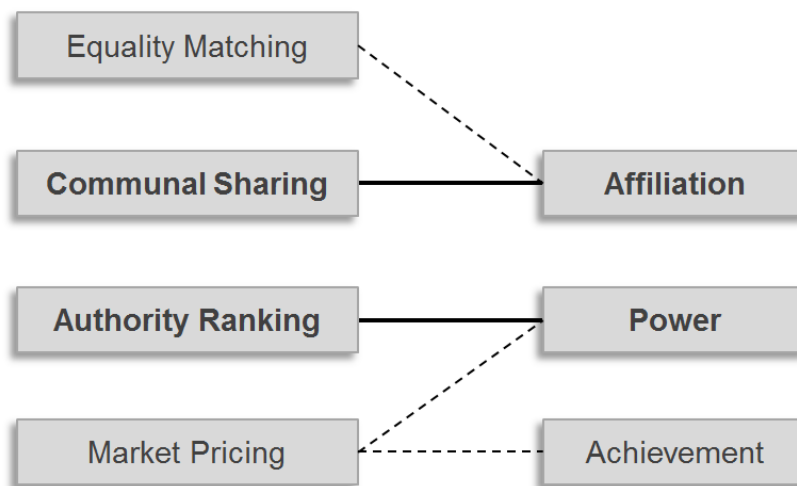
Figure 10. Specific links between relational models and Big 3 motives as found in the empirical Studies 2-5. Solid lines represent findings confirmed in all studies. Dashed lines represent results found in at least one study, but not in all studies.

Table 24

Summary of the Significance Tests in Studies 2-5.

Hypothesis	Correlation (*r*) and regression (*β*) coefficients			
	Study 2	Study 3	Study 4	Study 5
2.1: *r* (CS, *san* Aff / *san* Int)	.24**	.36**/.54**	--	.31**/.34**
2.2: *r* (AR, *san* Pow)	.29**	.32**	--	.33**
2.3: *r* (MP, *san* Ach)	.10	.20**	--	.15
2.4: *r* (CS, *n* Aff)	--	--	.28**	.27**
2.5: *r (AR, n* Pow)	--	--	.21**	.26**
2.6: *r* (MP, *n* Ach)	--	--	.00	.19†
3.1: *β* (*n* Aff → CS)	--	--	.23**	.28**
3.2: *β (n* Pow → AR)	--	--	.16**	.23*
3.3: *β* (*n* Ach → MP)	--	--	.00	.14
3.4: *β* (*san* Aff / *san* Int → CS)	.25*	.17*/.46**	--	.32**/.31**
3.5: *β (san* Pow → AR)	.25*	.22*	--	.26**
3.6: *β* (*san* Ach → MP)	.05	.05	--	.06

Note. *n* Ach = implicit need for achievement, *n* Aff = implicit need for affiliation, *san* Pow = implicit need for power, *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, *san* Int = explicit need for Intimacy, AR = authority ranking, CS = communal sharing, EM = equality matching, MP = market pricing.
$^{\dagger}p < .10$, $^{*}p < .05$; $^{**}p < .01$.

3.3.5 Discussion of Studies 2-5

Studies 2-5 confirmed most of the hypotheses regarding empirical links between motives and models (see Table 24). These results are generally in line with the results obtained in the literature study (Study 1; see Chapter 3.2.3). The link between CS and explicit/implicit need for affiliation was supported by empirical data in all four studies, as was the link between AR and explicit/implicit need for power. Moreover, the regression analyses demonstrate that distinct motives have specific effects on different relational preferences. The effects of affiliation motives on CS preferences were independent of the effects of other models and unique regarding other motives. Similarly, AR preferences were only influenced by explicit/implicit power motives, but not by affiliation or achievement motives. However, as evident from Studies 3-5, the power motives tended to influence MP preferences to some extent.

Regarding MP, the results of Studies 2-5 did not fully support the hypotheses and the results of Study 1. Although there was a significant correlation between MP and explicit need for achievement in Study 3, a marginally significant correlation between MP and implicit need for achievement in Study 4 and tendencies of MP and explicit need for achievement in the hypothesized direction in Studies 2 and 5, the regression analyses did not reveal significant effects of explicit/implicit motive dispositions on MP. Moreover, in Studies 3-5, MP showed a tendency to be influenced by power motives. This is surprising given that neither the theoretical assumptions concerning MP nor the characterization of MP in the literature point in this direction. It may be that some of the participants interpreted the brief MP descriptions in both RPS and IRM (see Appendices C and D) as focused on mutual monitoring of competitive advantages or on distrust, instead of a maximizing orientation focused on one's own benefits. In the case of mutual monitoring of competitive advantages, this interpretation would correspond to subcategories of power motivation, namely *control or regulation, especially through gathering information or checking up on others* and *attempts to influence, persuade, convince or prove a point,*

argue (Winter, 1994). In the case of the latter, this interpretation would imply asocial interactions of exploiting others to one's own benefit (Fiske, 1991).

As to the former, content-coding the brief descriptions used in the RPS/IRM with Winter's (1994) scoring categories did not reveal any motive content that would have been codeable regarding power motivation, although this fact does not preclude that some participants interpreted the description as power thematic instead of achievement thematic. However, the MP description used in the RPS entails a subcategory of achievement motivation, namely *goals and performances that are described in ways that suggest positive evaluation* (cf. Winter, 1994). Therefore, if the relation of MP to power is indeed attributable to the descriptions I used, then the same logic would imply that I should have found (more) significant effects of need for achievement. However, it is possible that the partial interpretation of MP descriptions as power-related could have suppressed the hypothesized effect of achievement on MP. In further studies, one could apply different descriptions of MP which are either more achievement-oriented (which would represent the original concept, as evident from the literature study) or more power-oriented or both and test for potential suppressor effects.

As to the latter, Fiske (1991, 1992) as well as Fiske and Haslam (2005) pointed out that people often confuse the social MP orientation with an asocial orientation. Asocial interactions, especially harming others without taking notice of them as human beings, exploiting others, and using others for one's own benefits entail features of power motivation, especially of Winter's (1994) subcategories *strong, forceful actions which have impact on other people* and *control or regulation, especially through gathering information or checking up on others*. It is possible that some of the participants indeed confused MP with an asocial orientation. This would also explain the low mean scores for MP preferences as compared to the other basic relational models: Some people may have interpreted MP as asocial and social desirability effects could have affected their MP scores. After all, not many people want to be (seen as) asocial individualists.

Both the IRM and the RPS are established scales. The relational model characterizations and items therein have been derived from theoretical descriptions of the basic relational models. They have been demonstrated to have good reliability and construct validity (Biber et al., 2008; Haslam & Fiske, 1992; Haslam et al., 2002; Vodosek, 2009). In the present studies I relied on these scales. Still, in terms of MP, one could design studies to further improve the validity of the scale, for example by providing different MP descriptions and scoring responses to these descriptions as to MP content in order to develop a description that precludes ambiguities regarding MP and AS.

Although neither the theoretical assumptions nor the literature study pointed to any correlation of the Big 3 motives and EM, Study 3 and Study 4 revealed significant correlations of EM and affiliation motives ($r = .18$ in Study 3 for *san* Affiliation; $r = .14$ in Study 4 for *n* Affiliation). There were also tendencies for EM to be related to both implicit and explicit needs for intimacy. Although the correlation coefficients are small, these findings could imply that some participants perceived the tit-for-tat structure within fraternity-like groups of people having equal rights as bearing aspects of close, intimate relationships. In turn, this may imply that EM and CS, although clearly distinguishable in theory, are sometimes conflated in the perception of imagined or real relationships. This argument is supported by the small, but significant correlations between CS and EM found in Studies 3 and 4.

Throughout the present studies, CS and AR were consistently associated with affiliation and power, respectively. Still, the picture was less clear for EM and MP. The most obvious explanation for this dissociation is that CS and AR show greater conceptual overlap with their respective motivational complements than EM and MP. However, these two models and their motivational complements may also represent more basic structures of relationships for most people than EM and MP. Support for this argument is provided by interpersonal theories of personality, which have been linked to both RMT and the Big 3 motives. Wiggins (1979; Wiggins & Trobst, 1999) proposed the dimensions dominant-submissive and hostile-friendly as the primary axes of the interpersonal circle and thus as

the most basic forms of human sociality. Although RMT treats the four basic relational models as equivalent, it proposes that CS and AR are phylogenetically older than EM and MP and ontogenetically learned at a younger age (Fiske, 1991; Goodnow, 2004; cf. Chapter 2.2.5). In addition, confirmatory factor analyses reported by Haslam and Fiske (1992) and Haslam (1994) revealed a four factor structure for the mental organization of interpersonal relationships with two principal factors representing CS and AR. Citing the pioneering work of Mead (1934) and seizing Wiggin's (1979) idea of interpersonal circumplex models, Schubert, Waldzus, and Seibt (2008) referred to CS and AR as the "two most basic and important dimensions of social relations" (p. 160). Also with reference to social accounts of human personality (Sullivan, 1953; Wiggins, 1979), motivational field theory (Stanton et al., 2010; cf. Chapter 2.1.3) identified the principal dimensions friendly-hostile and dominant-submissive as corresponding to the implicit motives n Affiliation and n Power. Fiske (1992) proposed that CS and AR structures evoke stronger emotions when initiated, agreed, or transgressed, than EM and MP relations. In sum, all these converging theories point to the assumption that CS and AR are more important, more clearly distinguishable, and more fundamental for most people than EM and MP. Thus, the clearer picture for CS and AR than for EM and MP in Studies 2-5 could have been in part the result of differences in subjective importance or emotional involvement regarding the relational models.

In Studies 2, 3, and 5, I combined the RPS items representing AR^+ with the items representing AR^- to form general AR scales. That is, I treated the perception of being in the superior position in a relationship like the perception of being in an inferior position. This procedure is debatable. On the one hand, both perceptions represent an AR structure. Empirically, the pooled AR^+ and AR^- items showed sufficient item-scale correlations and the reliabilities of the general AR scales were high (Cronbach's α = .84-.87). On the other hand, the power motive is conceptualized as the "desire to have impact on others by influencing, persuading, helping, arguing with, or attacking them" (McClelland et al., 1989, p. 694; cf. Winter, 1973), which could be satisfied in AR^+ positions, but not in

AR⁻ positions. Thus, AR⁺ situations should be better suited to arouse the power motive than AR⁻ situations. However, Stanton and colleagues (2010) have argued that both dominant and submissive displays are capable of arousing the power motive. In the end, the question whether there is a difference in arousing the power motive by dominant or submissive positions is an empirical one. I will address this question in the further analysis section (see Chapter 3.4.3).

In line with my expectations, but still interesting is the fact that both explicit and implicit measures of the Big 3 motives repeatedly showed detectable and specific effects on a measure of relational structure. This finding may be attributed to at least two factors. First, the scales which I used to measure relational preferences may tap both implicit and explicit aspects of relationships. Second, the relational models descriptions in the RPS may be able to arouse implicit motives leading to affective preferences and at the same time activate explicit motives leading to cognitive preferences for the respective relational structures. In the case of activated explicit motives, the underlying process may be that the verbally presented relational model descriptions activated declarative concepts such as goals and values (cf. Biber et al., 2008), which are important to the person reading the descriptions and exert a priming effect on the subsequent responses to the verbally presented questions. Regarding implicit motives, research by Schultheiss and Brunstein (1999), Rawolle (2010), and Strasser (2011) shows that visualization of situations and actions can lead to the arousal of implicit motives. It may be that the presented relational descriptions triggered visualizations of relationships with people and operations within these relationships that are typical for these relational structures. These visualizations could have led to implicit motive arousal, which affected the responses to the subsequent items. Generalizing the findings of the present studies I assume that explicit motives are activated by declarative characterizations of relationships and directly affect conscious decisions to engage in or wish for certain types of relationships. In contrast, implicit motives unfold their motivating potential via the imagined affectively charged incentives inherent in distinctively structured relational activities.

The preceding studies are descriptive in nature and thus not able to elucidate the factors that contribute to the correlations of motives and models. Still, they point to the interesting fact that whatever the underlying processes for motive arousal by relational models, it can certainly lead to preferences. These preferences should, in turn, trigger specific motivation to engage in relationships comprising motive-specific incentives, operations, and structures. This motivation should be detectable and quantifiable with classic tools. The following experiments were designed to measure motive arousal by relational structure.

3.4 Studies 6 and 7: Eliciting Domain-Specific Motivation by Providing Distinct Relational Structures

Motivation is a product of individual motives and situational incentives (Emmons, 1989; Kehr, 2004b; Lewin, 1946; McClelland et al., 1989; Murray, 1938; Schultheiss, 2001; cf. Chapter 2.1). For motivation to occur, individuals must possess at least some quantifiable amount of dispositional selective attention to motive-specific environmental stimuli. This dispositional attention results in motivation, if corresponding real or imagined cues are present (cf. Chapter 2.1.1). Motivation in turn leads to cognitions and action associated with motive satisfaction. Accordingly, the Big 3 motives are aroused in situations where corresponding incentives signal their potential satisfaction. Such incentives are given in social situations. Social situations are structured by relations between people and operations that are defined by these relations (cf. Chapter 2.2). Relational models theory (Fiske, 1991) provides a typology of relational structures that is defined axiomatically and can be observed in actual subjective construals of relationships, social errors, decision making, emotions, and motivation (cf. Chapter 2.2.3). Study 1 confirmed the theoretical assumptions regarding specific links between subcategories of the Big 3 motives and the relational models. Studies 2-5 demonstrated that the Big 3 motives correlate systematically with the basic relational structures proposed by RMT. Moreover, they showed that preferences for certain relational structures depend on dispositional motives and values (cf. Chapter 3.3.5).

Studies 6 and 7 go one step beyond mere associations between dispositional motives and preferences. They are designed to measure actual motivation elicited by the basic relational structures. For this end, they rely on a classic experimental paradigm originally introduced by McClelland et al. (1953). In its original form, motives are first aroused by motive-specific incentives. Subsequently, participants write stories in response to picture cues, after some instruction, or completely without further directions from the experimenter. The protocols of these stories are then scored for specific motive themes and used as an indicator for the motivation of the participants. In some experiments, baseline motive scores either without the presence of specifically arousing cues or with a standard set of picture cues for all participants are measured prior to step one. This allows for statistical control of dispositional motives and thus provides a clearer picture of the specific incentive value of the applied motive arousing conditions.

The same methodological approach was used in the following studies. However, instead of using incentives to activate implicit motives, I applied brief characterizations of the basic relational models as motive arousing conditions and analyzed the motive scores obtained from stories written in response to these characterizations. I expected that the imagination of a relationship structured to certain relational models leads to specific motivation. The general implication of the expected result is this: If in any concrete interaction one provides relational structures which conform to basic relational models, then one is able to elicit a specific kind of motivation in the people involved in this interaction.

3.4.1 Study 6: Motivation by relational framing I. A comparison of the motivational effects of communal sharing and authority ranking

3.4.1.1   Introduction

Arousal of social motives by relational incentives generates motivation, which can be measured by scoring motive content of stories written in response to the arousing conditions (McClelland et al., 1953). Conversely, by scoring these stories the incentive value of the arousing conditions for particular motives can be estimated. Arousing

conditions may take on various forms. In the domain of power motivation, participants have been presented with a power thematic vision (Rawolle, 2010), shown video clips of influential political leaders (Winter, 1973), instructed to write political letters arguing for or against a strong position (Magee & Langner, 2008; Peterson et al., 1994), told that their performance on some task would indicate suitability for leading positions (Koestner, Weinberger, McClelland, & Healy, 1988), or preselected because they campaigned for some important public function (Veroff, 1957). In the domain of affiliation/intimacy motivation, participants have been shown romantic films (Schultheiss, et al., 2004), guided to envision affiliative events (Rawolle, 2010), or presented documentaries about caring social relations (McClelland & Krishnit, 1988).

Regarding the pre-existing specific links of the Big 3 motives and the basic relational models found both in theory (Fiske, 1991, 1992; see also Study 1) and empirically (see Studies 2-5), framing relationships as structured according to either CS or AR should arouse different motives. The resulting motivation should be measurable with classic motive content coding tools.

According to the results obtained in Studies 1-5, I hypothesized that *thematic motive content of associative stories on social interactions is dependent on the framing of these interactions as being structured according to distinct basic relational models* (Hypothesis 4). Moreover, if relational models and motives are specifically related, associative stories written in response to a specific relational model framing should entail primarily the motive themes that correspond to the framing condition. Therefore, *framing social interactions as CS structured leads to more affiliation motivation than achievement motivation and power motivation* (Hypothesis 4.1). Accordingly, *framing social interactions as AR structured leads to more power motivation than achievement motivation and affiliation motivation* (Hypothesis 4.2).

In addition, specific motive content should be higher in the relational framing condition that corresponds to the motive than in the other conditions. Thus, *framing social interactions as CS structured leads to more affiliation motivation than framing social*

interactions as AR, EM, or MP structured (Hypothesis 4.4) and *framing social interactions as AR structured leads to more power motivation than framing social interactions as CS, EM, or MP structured* (Hypothesis 4.5).

3.4.1.2   Method

The experiment was conducted at the Erasmus Behavioral Lab (EBL), Rotterdam School of Management, Erasmus University Rotterdam. After informed consent, 179 undergraduate students participated in exchange for course credit. They were randomly assigned to three experimental conditions. The data of three participants had to be excluded from further analyses, because they did not deliver any codeable material (word count of stories was zero). Of the remaining 176 participants 68 (39.90%) were female. Mean age was 20.57 (SD_{age} = 2.17). Participants were invited to a "study on social perception". They were seated individually in front of a computer screen inside a cubicle and asked to follow the instructions provided on the screen until the study was over. Both the instructions by the experimenter and the instructions on the screen were in English. All participants reported a sufficient level of English skills. Motive scores were assessed within-subjects by scoring the motive content of the stories the participants provided. Thus, I applied a 3 (relational models condition) x 3 (motive theme) mixed design.

Participants were told beforehand that they would be presented a picture of a person along with some information about this person and a fictional relationship they should imagine having with this person. They were told that because of their "life experience" they would be able to create assumptions and evaluations of these people, even if they have only limited information about them. Next, they saw one of four pictures of a face taken from the Standardized and Motivated Facial Expressions of Emotions Stimulus Set (Rösch, 2012), which allows for the control of physical attractiveness and motivational incentives present in the displayed faces. The gender of the depicted persons was randomly assigned to participants. Along with the picture I provided one of the prototypical basic relational models characterizations developed for the RPS by Haslam et al. (2002)

and adapted by Biber et al. (2008). This has two advantages: First, these characterizations are established representatives of the underlying RM constructs. Second, I used the same RM characterizations in Studies 2, 3, and 5, which makes the methods of the present series of studies comparable. The characterizations are provided in Appendix C.

After 15s, participants could click on a button and were subsequently instructed to write a fictional emotionally charged story about an important 30min-discussion with the depicted person. The instruction for the story was oriented on the classic PSE instructions (cf. Pang & Schultheiss, 2005; Smith, 1992): Participants should take into account their own emotions, thoughts, and feelings as well as those of the other person. They should write an imaginative story with a topic, a plot, and an ending. They were instructed to press the *Tab* key when they were finished writing. Contrary to the PSE instructions suggested by Pang and Schultheiss (2005), participants were not reminded to finish writing after four and five minutes, respectively. This change was introduced because I expected that participants would deliver more codeable material and more complete stories than with the classic PSE instructions limiting their writing time. This was indeed the case.[5] Duration of the session varied between 10 and 20 minutes.

As in Study 1, two trained coders who were blind to the hypotheses scored the obtained 176 stories for achievement, affiliation, and power content using Winter's (1994) *Manual for Scoring Motive Imagery in Running Text*. Their inter-rater-reliability was $r = .82$ for achievement imagery, $r = .88$ for affiliation imagery, and $r = .80$ for power imagery. After all stories had been scored independently by the two coders, scoring disagreements were discussed and resolved. Like in Study 1, I used the concordant motive scores from the independent scorings and the agreed-upon motives scores from this discussion for further analyses.

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[5] In their fictional stories participants wrote on average 100.82 words ($SD = 48.90$), whereas average word count per story in the present Study 4 was 89.81 ($SD = 34.84$). A t-test assuming unequal variances showed a significant difference, $t(262.49) = 2.56$, $p < .05$.

3.4.1.3   Results

I subjected the obtained motive scores to a 3 (RM condition: CS vs. AR$^+$ vs. AR$^-$) x 3 (motive theme: achievement vs. affiliation vs. power) mixed-model ANOVA, with the second factor repeated. Word count of the stories was included as a covariate to control for the influence of story length. Results showed a significant interaction effect of RM condition and motive theme, $F(4, 344) = 23.06$, $p < .01$, $\eta^2 = .21$, $(1-\beta) = 1.00$, indicating that motive theme varied across conditions and supporting Hypothesis 4. The results are depicted in Figure 11.
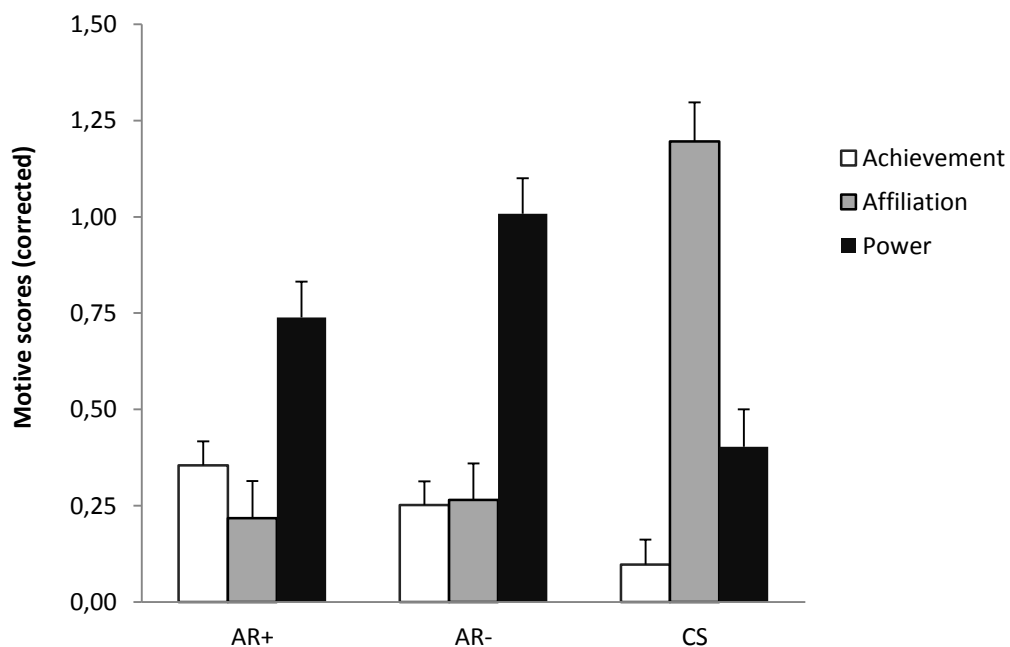
Figure 11. Word count corrected achievement, affiliation, and power motive scores in the conditions authority ranking superior position (AR$^+$), authority ranking inferior position (AR$^-$) and communal sharing (CS). Error bars represent standard errors of estimates.

In order to test Hypotheses 4.1 and 4.2, I ran simple main effects and planned contrasts in the single relational model domains. Within CS, the multivariate simple effect of motive theme was significant, $F(2, 172) = 38.21$, $p < .01$, $\eta^2 = .31$, $(1-\beta) = 1.00$. There was a significant difference contrast between affiliation and achievement content,

$F(1, 54) = 49.89$, $p < .01$, $\eta^2 = .48$, and a significant difference contrast between power and affiliation content, $F(1, 54) = 33.62$, $p < .01$, $\eta^2 = .26$, thus confirming Hypothesis 4.1.

Within AR$^+$, results showed a significant main effect of motive theme, $F(2, 172) = 7.68$, $p < .01$, $\eta^2 = .08$, $(1-\beta) = .94$. Contrast analyses between the repeated measures conditions revealed significant differences between power and achievement content, $F(1, 59) = 8.51$, $p < .01$, $\eta^2 = .13$, and between power and affiliation content, $F(1, 59) = 19.29$, $p < .01$, $\eta^2 = .25$, thus confirming Hypothesis 4.2 for AR$^+$.

Within AR$^-$, results showed a significant main effect of motive theme, $F(2, 172) = 21.48$, $p < .01$, $\eta^2 = .27$, $(1-\beta) = 1.00$. Contrast analyses between the repeated measures conditions revealed significant differences between power and achievement content, $F(1, 60) = 25.60$, $p < .01$, $\eta^2 = .30$, and between power and affiliation content, $F(1, 60) = 32.23$, $p < .01$, $\eta^2 = .35$, thus confirming Hypothesis 4.2 for AR$^-$.

In order to test Hypotheses 4.5 and 4.6, I ran simple main effects of relational framing conditions within the single motive domains while controlling for word count of the stories. Regarding affiliation content, the univariate simple effect of RM condition was significant, $F(2, 173) = 30.72$, $p < .01$, $(1-\beta) = 1.00$, indicating that affiliation content varied as a function of relational model. The planned contrast between CS and the AR conditions (AR$^+$ = -.50; AR$^-$ = -.50 CS = 1.00) assuming unequal variances was significant, $t(73.77) = 6.63$, $p < .01$, Cohen's $d = .50$, confirming Hypothesis 4.4. Scheffé adjusted post hoc tests revealed that affiliation content was significantly higher in the CS condition than in the AR$^+$ condition, $p < .01$, and in the AR$^-$ condition, $p < .01$. The difference between AR$^+$ and AR$^-$ was not significant, $p = .94$.

Regarding power content, the univariate simple effect of RM condition was also significant, $F(2, 173) = 10.13$, $p < .01$, $(1-\beta) = .98$, indicating that power content varied as a function of relational model. The planned contrast between the AR conditions and CS (AR$^+$ = .50; AR$^-$ = .50; CS = -1.00) assuming unequal variances was significant, $t(111.27) = 4.11$, $p < .01$, Cohen's $d = .50$, confirming Hypothesis 4.5. Scheffé adjusted post hoc tests revealed that power content was significantly higher in the AR$^+$ condition

than in the CS condition, $p < .05$, and significantly higher in the AR$^-$ condition than in the CS condition, $p < .01$. The difference between AR$^+$ and AR$^-$ was not significant, $p = 12$.

However, a planned contrast between the AR conditions in the power domain (AR$^+$ = 1.00; AR$^-$ = -1.00 CS = .00) turned out to be significant, $t(116.44) = -2.06$, $p < .05$, Cohen's $d = .32$, indicating that power content was higher in the AR$^-$ condition than in the AR$^+$ condition.

3.4.1.4   Discussion

The findings of Study 6 demonstrate that framing relationships as structured according to either CS or AR indeed leads to measurable and distinct motivational effects. Framing imagined relationships as CS structured led to higher affiliation content in subsequent stories than framing relationships as AR structured; the reverse was true for power content. Moreover, stories written in response to CS framings comprised more affiliation content than achievement and power content, whereas stories in response to AR framings comprised more power content than achievement and affiliation content.

Both AR conditions showed the same pattern of results (see Figure 11). However, in the AR$^-$ condition there was slightly more power content than in the AR$^+$ condition. This result is in conflict with Winter's (1973) argument that power motivation is especially strong in situations where one can exert influence on other people. However, it is in line with early theorizing by Lewin (1926) and experimental findings by Ovsiankina (1928) and Dembo (1931), each emphasizing the importance of psychological tension for motivation and behavior: In the AR$^-$ condition, participants were confronted with a situation in which they are not in the position to exert influence. Similar to the attention on the third solution in Dembo's (1931) experiment and the attention on past activities after disruption of these activities in Ovsiankina's (1928) studies, participants in the AR$^-$ condition may have directed their attention to these incentives that had been blocked (cf. Festinger, 1954; Wegner, 1989). Or, more precisely, their implicit power motive had taken on one of its three genuine tasks: orienting attention to power cues. The finding is also in line with both

theorizing and empirical studies on power stress, which show that blocking one's ability to exert influence leads to increased competitive striving and aggression (McClelland, 1976; Steele, 1973), to subjective reports of stress (Fodor, 1985) and negative affect (Fodor & Wick, 2009), to changes in EMG responses (Fodor & Wick, 2009), and to characteristic hormonal reactions (Wirth, Welsh, & Schultheiss, 2006). Still, more experiments are needed to test if this effect of AR^- is independent of the context of the present study and if the same pattern of results is also reflected in explicit and biological measures such as release of stress hormones or testosterone.

The design of the study was oriented on the classic paradigm introduced by McClelland et al. (1953). However, I did not assess participants' implicit motive dispositions beforehand, so that I could not control for their potential effects. Furthermore, I only applied CS and AR conditions, because these models revealed the strongest and most consistent effects in Studies 2-5. Still, for several reasons it would be interesting to include EM and MP as well.

First, to test if MP has the same effect on achievement motivation as CS and AR have on affiliation and power motivation, respectively. Study 1 showed that there is a substantial conceptual overlap between MP and the achievement motive, but Studies 2-5 revealed rather weak relationships between individual preferences for MP relations and explicit/implicit achievement motives. However, the finding that achievement motives do not consistently cause preferences for MP relations does not preclude that MP structures elicit achievement motivation. In other words, it could be that MP indeed elicits actual achievement motivation, even though individual achievement motive dispositions have no effects on general relational preferences.

Second, to explore the effects of EM on the Big 3 motives. In Study 3 as well as in Study 4 EM showed weak interrelations with the affiliation motive. The inconsistent findings concerning EM could indicate that EM elicits affiliation motivation, but not power or achievement motivation, at least in some individuals. However, in Study 1 I did not find a theoretical overlap between EM and any specific motive.

Third, to compare the effects of CS and AR on affiliation and power with the effects of EM and MP on these motive domains to examine if they are really only influenced by CS and AR. In Study 4, EM preferences were correlated with *n* Affiliation (arguably because EM was correlated with CS) and MP was affected by the explicit power motive in Study 3 and Study 5. Thus, it would be interesting to examine potential effects of EM and MP on these motive domains.

3.4.2 Study 7: Motivation by relational framing II. Relational models have distinct effects on motivation

3.4.2.1 Introduction

Study 7 was designed to replicate the effects of CS and AR obtained in Study 6 and to overcome some of its limitations. By measuring implicit and explicit motives online some time before the experimental session, I wanted to control for potential effects of motive dispositions on the motive scores measured after the relational model manipulation. Furthermore, I included the conditions EM and MP for the reasons described in Chapter 3.4.1.4.

Like in Study 6, the main hypothesis of Study 7 was that thematic motive content of associative stories on social interactions is dependent on the framing of these interactions as being structured according to distinct basic relational models (Hypothesis 4). I also wanted to replicate the results obtained in Study 6 concerning the effects of CS and AR on affiliation motivation and power motivation, respectively. Therefore, I tested Hypotheses 4.1, 4.2, 4.4, and 4.5 again within slightly different parameters than those described in Chapter 3.4.1.2. In addition, in accordance with the assumption that if relational models and motives are specifically related, associative stories written in response to a specific relational model framing entail primarily the motive themes that correspond to the framing condition, I hypothesized that *framing social interactions as MP structured leads to more achievement motivation than affiliation motivation and power motivation* (Hypothesis 4.3). Again, specific motive content should be higher in the relational framing condition that corresponded to the motive than in the other conditions.

Therefore, I hypothesized that *framing social interactions as MP structured leads to more achievement motivation than framing social interactions as CS, AR, or EM structured* (Hypothesis 4.6).

3.4.2.2   Method

After informed consent, 126 students participated in an experiment on "social perception" in exchange for course credit. The study was conducted in two steps: First, participants completed the PSE and the UMS online. Second, after a period of at least two days they were invited to a laboratory located at the Chair of Psychology, TUM School of Management, Technische Universität München, where they completed the second part of the study, which was oriented on the procedures of Study 6 (see Chapter 3.4.1.2). To match the data obtained from the online part of the study with the data from the laboratory part, all participants had to create a personal code during the online part, which they should enter again in the laboratory part of the study. Unfortunately, 12 out of the 126 participants used different codes in the laboratory and online. However, 4 of these codes could be matched because they differed only slightly and were the only unmatched codes within a distinct timeframe between online and laboratory sessions. Consequently, 118 datasets could be used for further analyses. Mean age of the participants in the sample was 24.59 ($SD = 5.31$) years. 74 (62.70%) participants were female.

Duration of the online session was approximately 35 minutes. Participants first created their personal 10-character code, which consisted of the first letter of the first name of their mother, followed by the month and day of their mother's birth, followed by the same code for their father. Subsequently, they completed the PSE. For the sake of consistency and comparability, all picture cues and procedures were oriented on the PSE materials and methods of Study 4 (see Chapter 3.3.3.1). Following the PSE, participants filled in the UMS. Procedures and materials were oriented on Studies 3 and 5 (see Chapter 3.3.2 and Chapter 3.3.4). At the end of the online session, participants were reminded to bring their personal code to the laboratory session and asked for their field of studies and their level

of English skills. 92 participants (78.22% of the sample) were teacher trainees, 6 (5.08%) were students of business administration, 8 (6.78%) studied engineering and 12 (10.17%) were engaged in other fields of studies. All participants reported to have at least good working knowledge of English.

At the start of the laboratory session, participants were seated in front of a computer screen. The experimenter asked the participants to enter their personal code and gave hints regarding the code structure when participants reported that they had forgotten it. After that, they followed the instructions presented on the screen. The procedure was the same as in Study 6. At the end of the laboratory session, the participants were debriefed.

The resulting PSE protocols and the stories obtained in the laboratory part were first scored by two trained coders who were blind to the hypotheses. In addition, to ensure complete anonymity and independence in the first step of scoring and to exclude the possibility that the scorers were more consistent in scoring motive themes within subjects than between subjects, they received and scored the protocols and stories via an online tool developed at the Chair of Psychology, TUM (Vanoni & Strasser, 2013). The online tool allows for randomizing stories for scoring, displaying the stories one at a time in a graphical user interface, and automatically conveying scored motive values to a database where they are subsequently matched with the other scorer's results and the remaining protocols of the participant. Inter-rater-reliability in the first step was $r = .83$ for achievement imagery, $r = .90$ for affiliation imagery, and $r = .81$ for power imagery. After the complete set of stories had been scored independently by the two coders, coding disagreements were resolved by an expert coder who received the diverging stories automatically, randomized and anonymous via the online tool. I used the concordant motive scores from the two independent scorers and the expert's scores for further analyses.

3.4.2.3   Results

Average word count of PSE protocols per person was 263.57 ($SD = 80.18$); average word count of stories in the laboratory part was 117.33 ($SD = 49.57$). As word count was significantly correlated with motive scores, I controlled for word count in the subsequent analyses by regression analysis and by using it as a covariate, respectively. Correlations of the word count corrected motive measures, including the mean scores of the UMS subscales, are provided in Table 25.

I subjected the motive scores obtained from the stories written in response to the relational model framings to a 4 (RM condition: CS vs. AR vs. EM vs. MP) x 3 (motive theme: achievement vs. affiliation vs. power) mixed-model ANOVA, with the second factor repeated. Word count of the stories, dispositional implicit motive scores (PSE scores), and dispositional explicit motive scores (UMS scores) were included as covariates to control for their effects on the motive scores in the stories. Results showed a significant interaction effect of RM condition and motive theme, $F(6, 220) = 7.42$, $p < .01$, $\eta^2 = .17$, $(1-\beta) = 1.00$, indicating that motive theme varied across conditions and supporting Hypothesis 4. Neither the dispositional explicit motives scores nor the PSE scores showed significant effects. The results are depicted in Figure 12.

Table 25

Correlations of Explicit Dispositional Motive Scores (UMS), Implicit Dispositional Motive scores (PSE), and Motive Content of the Stories Written in Response to Relational Models Framings in Study 7.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. *san* Ach	--									
2. *san* Aff	.27**	--								
3. *san* Pow	.13	.24**	--							
4. *san* Int	.06	.34**	.20*	--						
5. PSE Achievement	-.06	-.12	-.05	.05	--					
6. PSE Affiliation	-.13	.08	-.02	.22*	-.08	--				
7. PSE Power	-.07	.02	-.01	.09	.13	.07	--			
8. Achievement Content	-.04	-.13	.01	.07	.23*	-.08	.08	--		
9. Affiliation Content	.02	.05	.10	.15	.09	.23*	.00*	-.06	--	
10. Power Content	.03	.08	.05	.03	.06	-.03*	.18*	-.20*	-.05	--

Note. $N = 187$. *san* Ach = explicit need for achievement, *san* Aff = explicit need for affiliation, *san* Pow = explicit need for power, *san* Int = explicit need for Intimacy; *$p < .05$; **$p < .01$.
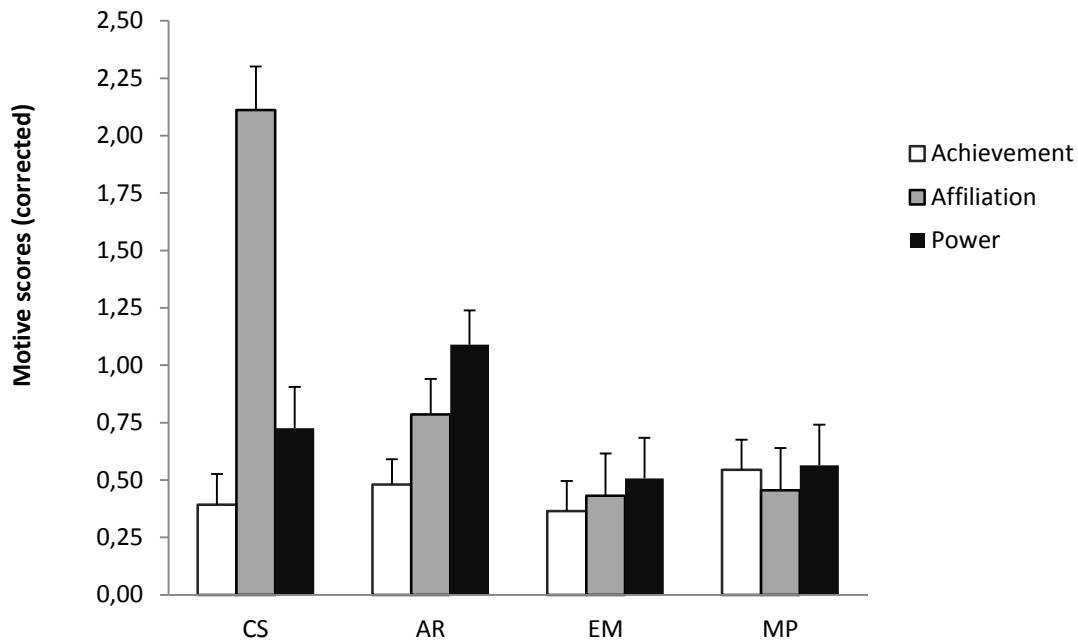
Figure 12. Achievement, affiliation, and power motive scores corrected for word count, dispositional implicit motives, and dispositional explicit motives in the conditions communal sharing (CS), authority ranking (AR) equality matching (EM), and market pricing (MP). Error bars represent standard errors of estimates.

I ran simple main effects and planned contrasts in the single relational model conditions to test Hypotheses 4.1, 4.2., and 4.3. thereby including the control variables as covariates. Within CS, the multivariate simple effect of motive theme was significant, $F(2, 109) = 27.06$, $p < .01$, $\eta^2 = .33$, $(1-\beta) = .97$. Planned contrasts between the repeated measures conditions revealed a significant difference between affiliation and achievement content, $F(1, 21) = 36.10$, $p < .01$, $\eta^2 = .63$, and a significant difference between power and affiliation content, $F(1, 21) = 5.61$, $p < .05$, $\eta^2 = .21$, thus confirming Hypothesis 4.1.

Within AR, the multivariate simple effect of motive theme was also significant, $F(2, 109) = 4.44$ $p < .05$, $\eta^2 = .08$, $(1-\beta) = .75$, supporting Hypothesis 4.2. Planned contrasts between the repeated measures conditions revealed a significant difference between power and achievement content, $F(1, 43) = 5.10$, $p < .05$, $\eta^2 = .13$, but no significant difference between power and affiliation content, $F(1, 43) = .54$, $p = .47$, $\eta^2 = .02$.

Within MP, there was no significant effect of motive theme, $F(2, 109) = .10$, $p = .90$, $\eta^2 = .00$, $(1-\beta) = .07$. Hypothesis 4.3 was not supported.

In order to test Hypotheses 4.4, 4.5, and 4.6, I ran simple main effects of relational framing conditions within the single motive domains while controlling for word count of the stories and for the respective dispositional motives measured with the PSE. Regarding affiliation content, the univariate simple effect of RM condition was significant, $F(3, 110) = 116.09$, $p < .01$, $\eta^2 = .33$ $(1-\beta) = 1.00$, indicating that affiliation content varied as a function of relational model. A planned contrast between CS and the other RM conditions (AR = -1; CS = 3; EM = -.1; MP = -1) assuming unequal variances was significant, $t(32.78) = 6.27$, $p < .01$, Cohen's $d = 1.61$, confirming Hypothesis 4.4.

In the power domain, the result was also significant, $F(3, 110) = 2.71$, $p < .05$, $\eta^2 = .07$, $(1-\beta) = .64$, indicating that power content varied as a function of relational model. A planned contrast between AR and the other RM conditions (AR = 3; CS = -1; EM = -1; MP = -1) assuming unequal variances was significant, $t(61.73) = 2.55$, $p < .05$, Cohen's $d = .55$, confirming Hypothesis 4.5.

Although achievement content was highest in MP, in the achievement domain the result was not significant, $F(3, 110) = .38$, $p = .77$, $\eta^2 = .01$, $(1-\beta) = .12$, indicating that achievement content did not differ across RM conditions in this study.

3.4.2.4   Discussion

Study 7 confirmed the results obtained in Study 6. Although I examined a different sample, controlled for dispositional motive scores and included all four basic relational models in the analysis, motive content of stories and relational model conditions showed the same pattern of main effects and interactions as in the previous studies. Communal sharing framing resulted in a predominance of affiliative content in subsequent stories and affiliation themes were most pronounced in CS. Likewise, authority ranking framing led to predominance of power themes and power content was highest in AR. Although there was

a tendency for achievement content to appear primarily after market pricing framing, the difference to the other relational model conditions was not significant.

The predominant motive theme found in stories after communal sharing framing of the relationships was affiliation. Participants mostly described intimate discussions with friends and relatives, emotions like love, trust, and grief, and interactions governed by affiliative tendencies. It is important to note that none of these characterizations is explicitly mentioned in the brief text the participants received along with the picture of the other person (cf. Appendices C and D). This generalization of the contents in the brief descriptions to the broader categories of affiliation and intimacy is most likely due to spreading activation of primed concepts (Collins & Loftus, 1975). That is, the relational framing activated associative networks connecting the cues within the CS characterization with memories and imaginations of affiliative behavior (Anderson, 1983) or implicit behavioral tendencies (McClelland et al., 1953) that were expressed in the subsequent stories. The same is true for authority ranking and the predominance of power content in the stories. From Studies 6 and 7 it can be concluded that framing relationships as AR leads to power motive arousal and, more important, that compared to other relational structures this arousal is independent of the hierarchical position one has been assigned to. However, as evident from Study 6, the subcategories AR^+ and AR^- might slightly differ in their potential to elicit power responses. Moreover, AR^+ showed a tendency to contain more achievement content than the other conditions. It may be that while AR structures consistently activate associative networks tuned to power motivated implicit behavioral tendencies, the actual position in some AR hierarchy determines the strength of these activations and the arousal of other motives. I will readdress the different roles of AR^+ and AR^- in the further analyses section (see Chapter 3.4.3).

The role of market pricing in activating associative networks tuned to specific motives is still not clear. From the patterns of results of Studies 2-5 and 7 it can be concluded that MP shows small, but consistent links to both the achievement and the power domain. Although it may be that the current studies are not apt to detect the effects of MP on

achievement and power (and vice versa), I will revisit this topic once more in the further analyses section (Chapter 3.4.3). Judging from the previous studies, however, it could also be concluded that market pricing is just not affiliative: People engage in MP for the sake of efficient functioning, achieving valued outcomes, or the joy of competing in power struggles, but obviously not for the end of gaining new friends or taking loving care of others.

In the present study, PSE motive scores significantly correlated with the motivation scores obtained in the laboratory part. Although this could partly be attributed to common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), it may as well show a dispositional tendency to express certain motive content even under framing conditions that arouse either congruent or incongruent motives. The correlation may as well be based on the expression of dispositional motives. In this case, why were there no interactions between the PSE motive scores and the motive scores within the stories? After all, the relational framings I used in Study 7 are likely to arouse implicit motives and according to McClelland (1980, 1985), people with strong motive dispositions, for example a high need for affiliation, should be more prone to get incentivized by a motive-congruent framing than people with weak motive dispositions. This person-situation interaction model (see Chapter 2.1), which is the basis of most contemporary motivation theories, should be visible in the data. However, this interaction is dependent on two factors: Besides the strength of the individual motive disposition, it is the strength of the present incentives that determines motive expression (McClelland, 1985; cf. Murray, 1938: *beta press*): Whereas weak incentives attract only those with strong motives, strong incentives attract all people. As the effects of the AR and the CS framing were quite pronounced in Studies 6 and 7, it is likely that the framings I chose to elicit the dispositional motives were too strong to discern the subtle differences in dispositional motive strengths. Therefore, more sensitive designs with more subtle priming manipulations are necessary to test interaction effects between specific dispositional motives and the motive arousing effects of the basic structures of human relations.

Yet another possibility is that explicit motives must enter the equation. According to the channeling hypothesis (Bing et al., 2007; Lang et al., 2012), explicit motives channel the expression of implicit motives. Consequently, in the present study explicit motives, implicit motives, and relational framing could have interacted to result in specific motive scores. Accordingly, in Study 5, explicit and implicit motive dispositions could have interacted to shape relational preferences. However, the sample sizes of Studies 5 and 7 combined with the small to medium sized effects of implicit motives in Study 5 do not allow for sensible testing of these channeling assumptions.

Although Study 7 resolved the major constraints of Study 6 by taking into account EM and MP and by controlling for dispositional motives, a few limitations should be considered. First, according to the standard paradigm in classic motivation psychology (Atkinson, 1958; McClelland et al., 1953; Veroff, 1957; Winter, 1991), I measured motive arousal by scores obtained from associative stories. However, other measures of motive arousal in response to relational framing manipulations would complement the findings, such as the analysis of behavior (e.g. Bargh, Chen, & Burrows, 1996) or the assessment of hormonal effects (e.g. Schultheiss, Campbell, & McClelland, 1999). Second, in both experiments I relied on participants' imagination of a relationship with a stranger on a photograph. I employed this method for two reasons: Reducing error variance stemming from intensity, duration, and quality of different actual relationships people have, and avoiding the typical combination of relational models applied in complex relationships (Fiske, 1992; Goodnow, 2004). Still, the presence of a single relational model governing all aspects of a relationship is not likely to occur in reality. In addition, due to the between-subjects design of the experiments and unlike in Studies 2-5, I could not control for the influence of the other relational models. In short, the present experiments would benefit from studies controlling for relational preferences and applying a more realistic setting with real instead of imagined relationships, for example diary studies (Bolger, Davis, & Rafaeli, 2003), event-sampling methods (Czikszentmihalyi & Larson, 1992), or the analysis of archival data (Langner & Winter, 2001).

Despite these limitations, Studies 6 and 7 show strong effects of relational models on motivational concepts obtained in an experimental setting. Therefore, they complement Studies 2-5 in which the reverse was demonstrated: Effects of traits and motives on subjective relational concepts. Taken together, Studies 1-7 show that there are bidirectional influences of relational models and motives and that these effects are strong and consistent across a variety of designs and measures.

3.4.3 Further analyses

The following section is concerned with the re-examination of some of the reported studies in order to answer two interesting questions, which are directly connected to the obtained results and at the same time provide avenues for further research on motives and models. First, I reanalyzed Studies 2-5 and Study 7 to explore the question whether MP is empirically related to agentic motivation (Bakan, 1966) as opposed to affiliation motivation. Second, I re-examined the data of Studies 2, 3, and 5 as to differential effects of explicit motives on AR^+ and AR^- tendencies in order to compare them to the findings of Study 6.

3.4.3.1 The link between market pricing and achievement/power vs. affiliation

Introduction. The literature on relational models (Fiske, 1991, 1992) and the results of Study 1 strongly suggested that market pricing orientations are driven by the need for achievement. However, in the empirical Studies 2-5 and 7 the picture was less clear. In Studies 3 and 5, MP was indeed associated with achievement motives, whereas in Studies 2, 4, and 7 it was apparently not. Moreover, in Studies 3, 4, and 7 MP showed tendencies to be associated with power motivation. However, in most cases these tendencies were too small to reach significance in the present studies.

Power and achievement have frequently been combined to constitute the agentic motive (Bakan, 1966; see Chapter 2.2.2) as opposed to a communal motive, which consists of affiliative and intimate aspects. For across the present studies MP was

consistently associated with either power or achievement, but never with affiliation or intimacy, I combined the explicit power and achievement motive scores from the participants of Studies 2-5 to test for effects of the agentic motive on MP preferences. I also re-examined the data obtained in Study 7 with data from additional participants in the MP condition, which were obtained in a subsequent data collection, by comparing the agentic and the affiliation motive content scores after MP framing. The corresponding exploratory hypotheses were:

Hypothesis 5.1: Preferences for relationships governed by the relational model market pricing are positively associated with the explicit and the implicit agency motive.

Hypothesis 5.2: Preferences for relationships governed by the relational model market pricing are dependent on the explicit agentic motive.

Hypothesis 5.3: Preferences for relationships governed by the relational model market pricing are dependent on the implicit agentic motive.

Hypothesis 5.4: Associative stories written in response to a market pricing framing contain more agentic content than affiliation content.

Finally, I intended to re-examine Hypothesis 4.3 concerning the difference between achievement and the other two motives in the MP condition.

Method. Concerning Studies 2, 3, and 5, I calculated explicit agency motive scales by summing up the items of the *san* Power and the *san* Achievement scales for each person and dividing the sum scores by the total number of power and achievement items. Similarly, regarding Studies 4, 5, and 7, I calculated corrected implicit agency scores by summing up the raw scores of power and achievement in the stories, regressing out the word count of the stories, and z-standardizing the obtained values. In Study 7, adding the subsequently obtained data resulted in a total sample size of $N = 53$ ($M_{age} = 23.00$, $SD_{age} = 3.58$; 38 participants were female) in the MP condition.

Results. Descriptive statistics of the explicit agency scales as well as the correlations of explicit and implicit agency motives with MP preferences are presented in Table 26. Overall, Hypothesis 5.1 was supported (with the exception of Study 2, which is maybe due to the low scale reliabilities of the PRF).

In line with the analyses in Studies 2-5, I conducted 2-step HMRAs to test for unique effects of *san* Agency on MP preferences. In Study 2, *san* Agency had no significant effect on MP preferences, $\beta = .05$, $t(103) = .49$, $p = .63$. In Study 3, *san* Agency showed a significant effect on MP preferences, $\beta = .19$, $t(189) = 2.61$, $p = .01$ In Study 5, *san* Agency had a marginally significant effect on MP preferences, $\beta = .18$, $t(100) = 1.75$, $p = .08$. Thus, Hypothesis 5.2 was supported in Studies 3 and 5, but not in Study 2.

In Study 4, the implicit agency motive had no significant effect on MP preferences, $\beta = .07$, $t(373) = 1.36$, $p = .17$. However, in Study 5, the implicit agency motive showed a significant effect on MP preferences, $\beta = .20$, $t(102) = 2.04$, $p < .05$. Thus, Hypothesis 5.3 was supported in Study 5, but not in Study 4.

Table 26

Sample Sizes, Reliabilities, Means, Standard Deviations of Explicit and Implicit Agency Scales; Correlations of Agency Scales with MP Preferences.

Scale	Study	*N*	α	*M*	*SD*	*r* (MP)
san Agency	2	109	.78	.61	.16	**.12**
san Agency	3	187	.89	4.11	.82	**.29****
san Agency	5	108	.88	7.45	1.24	**.22***
n Agency	4	379	--	.00	1.00	**.12***
n Agency	5	108	--	.00	1.00	**.24***

Note. *san* Agency = explicit need for agency, *n* Agency = implicit need for agency. Bold numbers represent results corresponding to Hypothesis 5.1. *p < .05; **p < .01.

In order to test differences in motive content after MP framing, I conducted paired t-tests in the MP condition. The difference between word-count corrected agency ($M = .13$, $SD = .86$) and affiliation ($M = -.42$, $SD = .64$) scores was significant, $t(52) = 3.26$, $p < .01$,

thus confirming Hypothesis 5.4. Regarding Hypothesis 4.3, the difference between achievement (M = .28, SD = 1.17) and affiliation scores in the MP condition was significant, t(52) = 3.58, p < .01, as was the difference between power (M = -.06, SD = .89) and affiliation, t(52) = 2.22, p < .05. There was no significant difference between achievement and power content, t(52) = 1.44, p = .16.

Discussion. Combining the explicit motive scores for achievement and power to agency scores resulted in significant correlations with market pricing preferences in Studies 3 and 5. Moreover, implicit agency motive scores were correlated with MP preferences in Studies 4 and 5. In addition, after framing relationships in terms of MP, participants wrote significantly more agency motive content than affiliation motive content. There was a significant difference between achievement and affiliation content after MP framing, but the difference between achievement and power content was not significant.

Obviously, both the effects of explicit motives on preferences for market pricing and the effects of market pricing on agency motivation are small, but consistent. The present results thus indicate a link between market pricing and agency. Furthermore, although not initially hypothesized, the present Studies 3 and 5 revealed another interesting link: MP preferences were negatively associated with explicit need for intimacy (see Chapter 3.3.2.3 and Chapter 3.3.4.3). The findings obtained in the framing experiment support this tendency. Stories in response to MP framings contained less affiliation content than stories following CS and AR, respectively. The results support the view that people are primarily interested in MP relations for the sake of efficient functioning, achieving valued outcomes, or the joy of competing in power struggles. In contrast, people with strong desires for friendship, love, or caring for others are not particularly interested in relationships structured according to MP, probably because MP relations do not contain the right incentives for them.

In sum, the present results indicate that individual preferences for MP relations are driven by agency motives and that activating MP structures by priming or framing results

in agency motivation as opposed to affiliation/intimacy motivation. Further research should be concerned with the application of MP framings in realistic settings, for example in business, in psychotherapy (cf. Haslam et al., 2002), or in intimate relationships (cf. Goodnow, 2004).

3.4.3.2 Differences between superior and inferior positions in authority ranking relationships

Introduction. In the relational framing studies I found that authority ranking leads to the expression of power content in subsequently written associative stories. This may reflect an arousal of power motives by the relational structure inherent in AR. Power content was even more pronounced in the AR^- condition than in the AR^+ condition. This finding is surprising, as the stories were coded with Winter's (1994) *Manual for Scoring Motive Imagery in Running Text*, in which power motive imagery is scored in line with Winter's (1973) definition of power motivation as the desire to exert influence on other persons. Although initially I had not expected any differences in power motive imagery between the two AR conditions, the findings of the relational framing studies lead to the conclusion that being in the AR^- position in some hierarchy is different in terms of motive arousal than being in the AR^+ position. The findings of Study 6 suggest that need for power is especially aroused in AR^- situations where power incentives are present, but at the same time one is not in a power position. They are in line with findings on power stress (Fodor & Wick, 2009; McClelland, 1976; Steele, 1973), with early experiments on psychological tension (Dembo, 1931; Ovsiankina, 1928), and with cognitive dissonance theory (Festinger, 1954).

This could mean that people with high power motives strive for situations where they are in power, especially when they are currently not. Study 6 leads to the conclusion that both AR^+ and AR^- situations evoke power motivation, because power-motivated people's attention is directed to power incentives, that is, positions of power and influencing other people (Winter, 1973). But whereas in AR^+ relationships they can satisfy their need for power, in AR^- relationships they feel frustrated. Therefore, power motivated people should

explicitly strive for AR$^+$ relationships where they can satisfy their need for power, and avoid AR$^-$ positions, where they would feel tension and stress. Consequently, I hypothesized that a high need for power affects both the desire to engage in AR$^+$ relations and in AR$^-$ relations. The data obtained in Studies 2, 3, and 5 allowed for direct tests of this hypothesis. All three studies comprised some explicit motive measure and an assessment of both AR$^+$ and AR$^-$ preferences. Unfortunately, in Study 4 I used the IRM instead of the RPS and thus cannot discern AR$^+$ and AR$^-$ preferences. Thus, my hypotheses concerning the differential effect of the power motive are limited to the explicit motive system:

Hypothesis 5.5: Explicit need for power predicts preferences for AR$^+$ relations: The higher the power motive, the more the participants want to engage in AR$^+$ relations.

Hypothesis 5.6: Explicit need for power predicts preferences for AR$^-$ relations: The higher the power motive, the less the participants want to engage in AR$^-$ relations.

Results. Means, standard deviations, and scale reliabilities of the AR$^+$ and AR$^-$ scales from Studies 2, 3, and 5 are presented in Table 27.

Table 27

Scale Reliabilities (Cronbach's α), Means, Standard Deviations, and Standardized san Pow Coefficients Regarding the AR$^+$ and AR$^-$ Subscales in Studies 2, 3, and 5.

Study	Subscale	α	*M*	*SD*	*β (san Pow)*
Study 2	AR$^+$	.86	4.84	1.85	.51**
Study 2	AR$^-$	.90	4.19	1.61	-.26**
Study 3	AR$^+$	.94	5.44	2.33	.55**
Study 3	AR$^-$	.82	4.16	2.13	-.44**
Study 5	AR$^+$	.90	4.73	1.80	.53**
Study 5	AR$^-$	.87	3.79	1.62	-.31**

Note. AR$^+$ = preference for superior positions in AR relations, AR$^-$ = preference for inferior positions in AR relations, *san* Pow = explicit need for power. **$p < .01$.

According to the procedures used in Studies 2, 3, and 5, I conducted hierarchical regression analyses with AR^+ and AR^- as dependent variables. In the first step, I controlled for the other relational models and the remaining AR subcategory. In the second step, I included the Big 3 motives as predictors. Standardized regression coefficients of *san* Power are presented in Table 27.

In Study 2, *san* Power predicted AR^+ preferences positively, $\beta = .51$, $t(102) = 5.85$, $p < .01$, and AR^- preferences negatively, $\beta = -.26$, $t(102) = -2.19$, $p < .05$. Thus, Hypotheses 5.5 and 5.6 were supported.

Likewise, in Study 3, *san* Power predicted AR^+ preferences positively, $\beta = .55$, $t(132) = 6.33$, $p < .01$, and AR^- preferences negatively, $\beta = -.44$, $t(132) = -4.20$, $p < .01$. Hypotheses 5.5 and 5.6 were supported.

Finally, in Study 5, *san* Power predicted AR^+ preferences positively, $\beta = .53$, $t(98) = 5.49$, $p < .01$, and AR^- preferences negatively, $\beta = -.31$, $t(98) = -2.38$, $p < .05$. Hypotheses 5.5 and 5.6 were supported. The results of the reported regression analyses are presented in more detail in Appendix E.

Discussion. Regarding the explicit power motive and preferences for different hierarchical positions within authority ranking relations, there was a consistent pattern of results in Studies 2, 3, and 5. The higher the explicit power motive, the more pronounced the preference for superior positions and the less pronounced the preference for inferior positions.

Whereas Study 6 showed that power *motivation* is even more pronounced when people imagine being in the inferior position in a relationship, the present results indicate that *explicitly power-motivated* individuals generally prefer superior positions and dislike inferior positions. Consequently, while Studies 1-7 have consistently shown that power motivation is associated with and affected by AR, the present results qualify this association in an important way, at least regarding explicit motives and AR preferences.

The results could be attributed to the items of the applied explicit motive questionnaires. Both PRF and UMS are very closely aligned to Winter's (1973) definition of power motivation as a desire to have impact on others by influencing, persuading, helping, arguing with, or attacking them. They are specifically tuned to being in or attaining some superior position (AR^+). In contrast, none of the power items entails the concept of need for deference (Murray, 1938), which is pivotal for preferences for AR^- positions. Sample items for the need for deference would be: a) *I like to be protected and cared for by persons with a high status*, or b) *I am loyal to my boss and go along with his/her decisions*. Need for deference and need for power could be conceptualized as end points of one single authority dimension (Fiske, 1991; Murray, 1938). If so, they should be negatively correlated. Consequently, measures which are positively correlated with one of the concepts should be negatively correlated with the other. Thus, in the present analysis, the self-attributed need for being in the superior position (*san* Power) was negatively correlated with AR^-. However, this power-deference dissociation is not considered in the Picture Story Exercise, where people are asked to describe the feelings and actions of the depicted people. No matter if someone identifies more with the person giving the orders or the person receiving them, the motive theme of giving orders would be scored as *n* Power.

Still, it would be interesting to test if this differential effect of the power motive on the two AR scales is also true for the implicit motive system. In Study 6 I did not find an interaction between the dispositional implicit power motive and the AR conditions on power content in the associative stories. More sensitive measures of both dispositional implicit power motive and power motivation could shed light on the role of implicit power motives in determining both the strength and the direction of the resulting motivation in AR^+ and AR^-. Likewise, the procedures of Study 4 could be refined and tuned to the testing of effects of the implicit power motive by using more power thematic picture cues in the PSE and by applying the RPS instead of the IRM, since the RPS is able to discern preferences for superior and inferior positions, respectively.

In sum, the foregoing analysis qualifies the results of Studies 2-5 by demonstrating that both AR^+ and AR^- preferences are influenced by *san* Power, but that the direction of this influence is dependent on the given position in the AR hierarchy.

4 General Discussion

The present studies were designed to link drivers and structures of social relations by empirically testing interrelations between individual social motives and relational models.

First, I reviewed and analyzed the existing literature on the basic relational models communal sharing, authority ranking, equality matching, and market pricing with regard to their specific thematic motive content (Study 1). The results of the literature analysis confirmed my hypotheses: In a representative sample of peer-reviewed articles on the four basic relational models, characterizations of communal sharing comprised more affiliation content than characterizations of the other models and more affiliation content than achievement or power content. Descriptions of authority ranking comprised more power content than descriptions of the other models and more power content than achievement and affiliation content. Characterizations of market pricing comprised more achievement content than characterizations of the other models and more achievement content than affiliation and power content. Thus, motive content varied as a function of relational model characterization.

Second, I examined specific associations between the Big 3 human motives and individual preferences for the basic relational models by analyzing quantitative data obtained from a variety of samples and measures (Studies 2-5). The results confirmed most of my hypotheses. Besides exhibiting model-specific correlations, both explicit and implicit motives predicted individual preferences for specific relational structures. Individual preferences for communal sharing were predicted by both implicit and explicit need for affiliation. Preferences for authority ranking were predicted by both implicit and explicit need for power. Preferences for market pricing showed a more heterogeneous motivational pattern. They were correlated with need for achievement (Studies 3 and 5) and with need for power (Studies 3, 4, and 5). Further analyses demonstrated that preferences for market pricing relations were associated with and predicted by the agentic motive.

Third, I tested the hypothesis that specific relational structures serve to elicit distinct motivation by experimentally framing relationships in terms of basic relational models and subsequently assessing the motive content of associative stories written in response to this framing (Studies 6 and 7). I found that the basic relational models elicited different motive themes within the associative stories: After framing relationships as communal sharing structured, participants wrote more affiliation content than achievement and power content. In addition, affiliation content was most pronounced in the communal sharing condition (Studies 6 and 7). After framing relationships as authority ranking structured, power content scores in the subsequent stories were higher than in the other conditions and there was more power content than achievement or affiliation content (Studies 6 and 7). Study 6 demonstrated that these effects were stronger in the condition where the participants were instructed to imagine being in the inferior ranking position than in the condition where they were set in the superior position.

4.1   Integration of Theory and Present Results

4.1.1   The motivational structure of social relationships

In Study 1, motive content varied significantly across the characterized relational models. One third of the variation of motive content in the analyzed texts was explained by the type of relational model, which constitutes a large effect (Cohen, 1992). On the one hand, this lends strong support to the theoretical claim that preferences for and engagement in certain types of relationships are driven by specific sets of more basic needs (Fiske, 1991; Murray, 1938). On the other hand, the extent of unexplained variance points to the fact that there is no complete overlap of single relational models and specific social motives: Either relational preferences are driven by a combination of basic motives, or each of the basic motives affects more than one specific basic relational model, or most likely relational models are additionally affected by other concepts and variables than individual motives.

The long tradition of motivation research has shown that the so-called fundamental human needs or motives are not completely independent from each other. This is due to

the fact that different typologies of human motives show varying degrees of specificity (Maslow, 1954; McClelland, 1985; Murray, 1938). However, by analyzing people's needs for achievement, affiliation/intimacy, and power, I applied very broad categories that have been shown to exist and function rather independently from one another (cf. McClelland, 1985). Still, this comes at the expense of specificity. Moreover, the Big 3 needs should not be viewed as single entities, but rather as clusters comprising more specific needs (Maslow, 1954; McClelland, 1985). This is not only evident in the ongoing debate on personalized and socialized power (Magee & Langner, 2008) or on the subcategories of the affiliation motive (McAdams, 1992; Weinberger, 1992). It is also reflected in the varying motive subcategories applied in implicit motive scoring systems (Heckhausen, 1963; Smith, 1992; Winter, 1991) and questionnaires (compare, for example, the subcategories of the PRF and the UMS).

Thus, it is likely that the four fundamental structures of relationships apply only to some aspects or subcategories of the Big 3 motives. For example, Weinberger and colleagues (2010) argued that the need for affiliation should be differentiated into the qualitatively distinct motives for affiliation, intimacy, and oneness. Rai and Fiske (2011) hypothesized that communal sharing is based on a need for unity, which would rather correspond to the need for oneness proposed by Weinberger (1992) than to the other two needs. Consequently, scoring more specific subcategories of the given motives could have resulted in even better motive-model fits with a more clear-cut pattern of interactions and an even greater portion of variance explained by the distinct characterizations.

Another possible source of error variance was the scarcity of expressed emotions within the characterizations and the resulting ambiguity of the stimulus material. Scorers reported that they were often uncertain as to which motive (if any) should be scored given the lack of expressed feelings and the absence of contextual information typical for condensed scientific texts. Their high inter-rater reliability came at the expense of total motive expressions scored. That is, both scorers applied a very conservative scoring strategy by omitting many of the ambiguous motive expressions. Moreover, they reported

that the clearest distinctions between different motive themes had been possible within examples of concrete interactions used to illustrate the basic relational models. Thus, it could be concluded that the underlying structures of the basic relational models alter the likelihood of the occurrence of motive-specific interactions. That is, although one cannot score the axiomatic properties of the relational models in terms of motive content for lack of expressed emotions, the typical interactions occurring within the different models are tuned to specific motives.

Most scoring disagreements were due to overlapping subcategories of the Big 3 motives in Winter's (1991) scoring system, for example the overlap of the *pow 4* category (*unsolicited help*) and the *aff 4* category (*kind acts of interpersonal helping*), or the overlap of the *ach 3* category (*mention of competing or winning*) and the *pow 3* category (*arguments, enforcements, or persuasion*). Therefore, these overlapping subcategories could have contributed to error variance.

Still, the results of Study 1 showed that, at least in theory, three of the four relational models are loaded with Big 3 motive-specific content. In other words, these relational structures trigger interactions which yield motive-specific incentives. This has important consequences for the motivating potential of relational structures: Like PSE pictures vary in their potential to arouse specific implicit motives, because they contain a combination of motive-specific incentives (Pang & Schultheiss, 2005), relationships vary in their potential to elicit specific types of motivation, because they entail motive-specific verbal and nonverbal incentives, which are determined by the currently enacted relational model (cf. Chapter 2.1.2 and Chapter 2.1.3; Schultheiss, 2001; Stanton et al., 2010).

In Study 1, equality matching was not specifically related to any of the Big 3 motives. This result was confirmed in the studies with implicit/explicit motives and relational preferences (Studies 2-5) as well as in the experimental studies (Studies 6 and 7). I will discuss the potential motivational structure of equality matching separately in Chapter 4.2.4.

4.1.2 The motivational structure of relational preferences

As hypothesized, in Studies 2-5 relational preferences were affected by both implicit and explicit dispositional motives. Given the theoretical and empirical independence of the two motive systems (cf. Chapter 2.1), the consistent findings of the present studies are interesting from a theoretical point of view. They indicate that people do not only develop preferences for certain classes of relationships, which comprise their favorite incentives (proximal level), but that they also prefer relationships which correspond to both their implicit and their explicit motives (distal level). Obviously, reading the characterizations of the distinct relations and imagining potential interactions as well as interaction partners led to both cognitive preferences as a result of the activation of explicit motives and affective preferences as a consequence of implicit motive arousal. My results are thus in line with the compensatory model of work motivation and volition (Kehr, 2004b; cf. Chapter 2.1.4). In the following, I will first integrate the present findings regarding relational preferences separately for both motive systems. Subsequently, I will discuss the similarity of the pattern of results in the explicit and the implicit motive domain in more detail.

Concerning explicit motives, the results of Studies 2, 3, and 5 are not only in line with the compensatory model of work motivation and volition (Kehr, 2004b), but also with the two-level information-processing model of motivation (Schultheiss, 2002; cf. Chapter 2.1.2): Since I assessed both relational preferences and explicit motives with declarative measures, the declarative incentives present in the relational preferences questionnaires should have activated participants' explicit motives. This activation should have led to the substantial correlations. My results are as well in line with other empirical studies on relational structures and personality characteristics. Biber et al. (2008) found a similar pattern of correlations as in the present Studies 2, 3, and 5 when they compared preferences for relational models with personal value orientations (Schwartz, 1992). Communal sharing was associated with unity and benevolence, whereas authority ranking and market pricing were associated with both power and achievement. Markey (2002) compared dispositional agency and communion (Bakan, 1966) orientations. He found that

the more communally oriented participants were in general, the more they stressed the importance of social, affiliative goals. In contrast, the more agentic the participants were, the more emphasis did they place on mastery- and control-oriented goals. Comparing Wiggins's (1979) interpersonal circumplex model to the Big 5 explicit personality traits, McCrae and Costa (1989) concluded that extraversion and agreeableness correspond to two of the primary quadrants in the interpersonal circle, namely friendly dominance and friendly submission, respectively. Downie, Mageau, and Koestner (2008) found that the type of interaction partners (close friends vs. acquaintances) moderated the effect of explicit basic need satisfaction on perceived relationship quality. All of these findings are based on declarative measures of relational variables and individual attributes. The present results (Studies 2, 3, and 5) add to these findings by demonstrating that explicit motives have specific effects on declarative measures of relational preferences.

Going one step further than the present studies, some authors demonstrated that explicit motives and values do not only affect relational preferences, but also relational behavior. Chen, Lee-Chai, and Bargh (2001) showed that, when given power, communally oriented people still pursued interpersonal goals directed at social responsibility, whereas people preferring exchange relationships (Clark & Mills, 1979) used their power to pursue goals related to personal achievement and personalized power. Markey (2002) reported a dyadic study on interaction effects of social cooperation and personality dispositions on social behavior. Participants showed more prosocial, communion-oriented behavior in a cooperative situation than in an uncooperative situation. This effect was moderated by their dispositional explicit agency vs. communion orientations. Agency-oriented participants tended to dominate the social situation even in the cooperative situation, whereas communally oriented participants showed sociable behaviors even in the uncooperative situation. Further studies on explicit motives and relational preferences should thus examine the extent to which relational preferences and explicit motives affect social behavior.

Regarding implicit motives, the findings of Studies 4 and 5 are in line with motivational field theory (Stanton et al., 2010). In both studies, implicit motives predicted relational preferences. This was especially salient for CS and AR preferences, which were exclusively predicted by affiliation and power motives, respectively. The apparent explanation for this effect is that relational structures yield distinct cues that signal the potential satisfaction of corresponding basic needs. This explanation is not only in line with MFT, but also with the two-level information-processing model of motivation (Schultheiss, 2001) and the compensatory model of work motivation and volition (Kehr, 2004b). The latter can help explain the underlying motivation process in more detail: People who were consciously or unconsciously aware of the motivating potential of the presented relational structures developed affective preferences towards these structures, which were captured by the IRM (Study 4) and the RPS (Study 5), respectively. That is, dispositional implicit motives were connected with the situational cues presented in the brief relational model characterizations to shape spontaneous preferences for corresponding relational structures. Since I assumed that these effects were small and affected by many other variables, I needed a large sample size to detect them. In addition, in Study 4, I measured implicit motives some time before I assessed relational preferences. The substantial span of time between the two assessments should have obscured potential effects of implicit motives on relational preferences even more. On the other hand, this lagged kind of assessment made it rather unlikely that the correlation between the two measures was influenced by identical environmental cues, emotional state, or mood of the participants. This could well have been the case in Study 5, where I assessed implicit motives and relational preferences in a single laboratory session under controlled conditions.

In Studies 2-5, both explicit and implicit dispositional motives showed the same pattern of effects on relational preferences. This finding was to be expected and surprising at the same time. On the one hand, the reviewed motivational theories point to the fact that relationships comprise both implicitly rewarding structures and explicit demands

(McClelland et al., 1989), entail declarative and non-declarative incentives (Schultheiss, 2001; Stanton et al., 2010), and contain specific cues which elicit both cognitive and affective preferences (Kehr, 2004b). Furthermore, RMT conceives of relational models as both autotelic (Fiske & Haslam, 2005) and governed by culturally prescribed norms, thus highlighting the implicit and explicit duality of relationships. This dual nature of relationships has been recognized before by psychologists (Bakan, 1966; Rotter, 1954; Woike et al., 2001), psychoanalysts (Horney, 1937; Sullivan, 1953), and sociologists (Clark & Mills, 1979; Weber, 1916).

On the other hand, the finding that implicit motives and explicit motives show the same pattern of effects on relational preferences is surprising given that the two motive systems are supposed to affect different classes of behavior and their measures exhibit discriminant validity (cf. Brunstein, 2010; McClelland et al., 1989). If so, then why did the findings parallel each other? The answer might lie in the specific dependent measures I used. On the one hand, both the IRM and the RPS are explicit, declarative questionnaires that require cognitive choices between different answers. Thus, they should activate explicit motives and lead to cognitive preferences for or against each of the relational models (Kehr, 2004c). On the other hand, they also contain vignettes (RPS) and items (IRM) that very briefly describe prototypical relationships. In the present studies, participants were either instructed to imagine these relationships and subsequently answer some questions concerning each of the relationships (RPS), or they were asked to imagine their ideal and future work team (IRM). That is, to answer these explicit questions they had first to imagine the provided relationships, envision particular interactions, and probably visualize potential interaction partners. This visualization could have resulted in referential processing (Paivio, 1971, 1986; Schultheiss et al., 2011; Weinberger & McClelland, 1990) between their implicit and explicit representational systems and thus led to an alignment of declarative and non-declarative needs (cf. Chapter 2.1.2; Schultheiss, 2001). Rawolle (2010), Schultheiss and Brunstein (1999) as well as Strasser and colleagues (2013) demonstrated that the visualization of goals and situations leads to

enactment of one's implicit motives and to alignment of implicit motives and explicit goals. Therefore, the visualization of the relational model vignettes could have led to affective preferences for or against each of the relational models, which were caused by the arousal of implicit motives.

In Study 5, I found low but significant correlations between the explicit and implicit needs for affiliation as well as between the explicit and implicit needs for achievement. Since explicit and implicit motives have frequently been shown to be independent (Koestner et al., 1991; McClelland et al., 1953; Spangler, 1992; Thrash & Elliot, 2002), the correlations in Study 5 were probably caused by context effects. Both implicit and explicit motives were assessed in a single session under controlled laboratory conditions. Participants' internal states such as mood, stress, or fatigue were probably nearly equal during implicit and explicit motive assessment and this could have led to the small overlap between the domains.

4.1.3 The relational structure of social motivation

Studies 6 and 7 demonstrated that distinct relational framing results in distinct kinds of motivation. This effect can be explained by spreading activation (Collins & Loftus, 1975) within associative networks of primed concepts (Anderson, 1983). Considering that implicit motives are conceptualized as such associative networks (cf. Kehr, 2004b; McClelland et al., 1953), it is likely that the presented relational structures contained distinct incentives, which were connected with specific affective reactions. These affective reactions were assessable in the subsequently written stories. In other words, the given situational incentives interacted with participants' implicit motives to elicit motivation. In short, the present experiments thus demonstrate that relational structures per se can elicit motivation.

If this is indeed the case, why were there no interaction effects of relational models and dispositional implicit motives? Given the findings of Studies 2-5, one could expect that the motive dispositions assessed prior to the laboratory session would have moderated the effect of the relational model vignettes on motivation. For example, the stronger the

dispositional implicit affiliation motive of the participant the higher the motivation elicited by the communal sharing framing. In Study 7, however, when I controlled for the influence of PSE motive scores by including them as covariates, there were neither significant main effects of dispositional motives, nor interaction effects of dispositional motives and relational model conditions on motivation.

A possible explanation for this lacking interaction effects concerns the strength of the provided incentives. According to McClelland (1980, 1985), weak motive-specific incentives only elicit motivation in persons who have a strong corresponding implicit motive disposition. In contrast, strong motive-specific incentives elicit motivation in nearly all persons – even in those with very weak corresponding motive dispositions. Considering the consistent effects found in Studies 2-5 and taking into account that the participants in Study 7 started to write their stories immediately following the priming manipulation, the vignettes I used for the priming probably comprised very strong and salient incentives. Consequently, they should have affected all participants, regardless of their dispositional motive strength. It would be interesting to apply a weaker sort of relational framing manipulation, which is more sensitive to individual differences in implicit motive strength, in order to test the moderating effects of dispositional motives.

Still, for practical reasons, the main effects found in the present Studies 6 and 7 could be even more interesting than potential interaction effects of motives and models: Studies 6 and 7 demonstrated that framing relationships as CS structured generally resulted in affiliation motivation, whereas framing relationships as AR structured generally led to power motivation. Further analyses showed that a MP framing generally resulted in agentic motivation. If I had found that given relational structures lead to specific motivation only under certain preconditions (if people have a high corresponding dispositional motive), this would have indicated that one has to analyze people's implicit motives before re-structuring the situation to motivate them. The analysis of people's implicit motives is a strenuous process and not very well accepted among practitioners for various reasons (Brunstein, 2010; Kehr, 2004b; Kuhl, Scheffer, Mikoleit, & Strehlau, 2010; Sokolowski,

Schmalt, Langens, & Puca, 2000). Thus, although from a theoretical point of view finding interaction effects between dispositional motives and relational structures would have been equally intriguing as the present findings, the *practical* implications of the present results are more straightforward and easier to implement: Provide CS structures, elicit affiliation motivation. Provide AR structures, elicit power motivation. Provide MP structures, elicit agentic motivation.

4.2 Limitations / Future Directions for Basic Research

4.2.1 Structured vs. unstructured situations and dispositional motive expression

The results of Studies 2-5 vs. Study 7 showed an interesting dissociation. Individual differences in motive strength predicted relational preferences in Studies 2-5, but had no effect on motivation after the relational framing in Study 7. This lacking effect was probably caused by the strong manipulation used in Study 7 (cf. Chapter 4.1.3). Thus, dispositional motive expression, or lack thereof, could be a function of the degree of predefined social structure. In Studies 4 and 5, participants received the relational model characterizations in random order. They were instructed to imagine their ideal team (Study 4) or their general interpersonal preferences (Study 5). These imaginations combined with the anonymity of the surveys and the equal status of the relational models could have facilitated implicit motive expression. That is, this rather unstructured situation without provision of pre-selected persons, teams, or single models predefining a particular interaction type might have allowed for unconstrained access to implicit motives. In contrast, the heavily structured experimental situation in Study 7 aroused only situation-contingent motives while at the same time suppressing competing motives.

Further research should consider the moderating effects of implicit motives. This could be achieved by a within-subjects-design, in which participants are presented several pictures of interaction partners, while each picture is framed with a different relational model. Individual preferences and motive dispositions could then become manifest in subsequent interaction partner (forced) choice, as well as in questionnaires and associative stories similar to those used in the present experiments. Another possibility

would be to present pictures of interaction partners along with more complex relationship descriptions, in which two or more relational models are combined. The particular motive content of subsequently written stories would then represent some sort of choice between the given incentive conditions. Such a design would also contribute to the ecological validity of the experiments, as in real-life interactions outside the laboratory relational models are usually intertwined.

4.2.2 Temporal stability of relational framing manipulations and dispositional motive expression

Another interesting question concerns the temporal stability of the framing manipulation used in Studies 6 and 7. As outlined in Chapter 2.1.6, the actual expression of a particular motive in associative stories is a function of its arousal and satisfaction relative to other competing motives (Atkinson, 1981; Atkinson & Birch, 1970; Blankenship, 2010; for a comprehensive overview on internal motivational conflicts, see Kehr, 2004c). Over the course of the writing process, initially activated and therefore predominant motives are satisfied and their actual strength decreases. Consequently, other competing motives become predominant and substitute the previously expressed motives (Atkinson, 1981; Atkinson & Birch, 1970).

Regarding the present experiments, the initial motive expression elicited by the relational framing manipulation could over time be replaced by the expression of other (strong dispositional) motives. For instance, if primed with CS, participants initially write about close, affiliative interactions, but later switch to descriptions of interactions which correspond more to their dispositional needs. Over time, this tendency to express dispositional needs would overshadow the initial motive arousal and the effect of the relational framing would wear out.

On the other hand, it is also likely that participants repeatedly access the initial relational information over time, at least as long as no further information regarding the relationship is provided. Consequently, all interactions would be more or less interpreted in the light of the relational framing, which would constitute an enduring predominant

model with stable motivational effects. That is, although dispositional motives and individual preferences for specific relational structures could become manifest from time to time despite the situational constraints placed by the relational framing manipulation (cf. Markey, 2002; see Chapter 4.1.2), the predominant motivational theme would still remain the same. For example, when primed with AR, affiliation motivated participants would sometimes switch to describing affiliative actions between superior and inferior persons, but quickly return to characterizing power motivated behaviors, as they remember the underlying AR structure of the relationship. Similarly, as long as a dyad is formally organized in an AR style agreed-upon hierarchy, there will be power and deference structures, which repeatedly arouse power motives or result in power stress, even if the two members of the dyad sometimes engage in EM relations or affiliative behaviors.

The design of the present experiments does not allow for a direct comparison of these differing tendencies. However, the application of repeated measures of motivation or a longer writing period in further relational framing studies could shed light on the temporal dynamics of relational framings as well as on the dynamics of dispositional motive expression within fixed relational structures.

4.2.3 Affective and cognitive relational preferences

Kehr (2004b) proposed that the activation of explicit motives results in cognitive preferences, whereas the arousal of implicit motives leads to affective preferences for tasks, activities, people, and situations. In the present studies, these different kinds of preferences were arguably confounded, since both implicit motives (Studies 4 and 5) and explicit motives (Studies 2, 3, and 5) were correlated with relational preferences (cf. Chapter 4.1.2). The application of instruments which are able to discern affective and cognitive relational preferences could yield higher and more specific correlations between motives and models than the instruments used in the present studies. The compensatory model of work motivation and volition (cf. Chapter 2.1.4) predicts that implicit motives correlate with affective preferences for relational models, whereas explicit motives

correlate with cognitive preferences for relational models. By measuring both implicit and explicit motives as well as affective and cognitive preferences for specific relationships, one could additionally assess effects of motive congruence on the preferences for relational models, particular relationships, and specific interaction partners. Research needs to develop reliable and valid instruments to assess and to discern affective and cognitive preferences for distinct relational structures. These instruments would not only promote basic research on relational topics, but also cover a wide range of applied motivational questions, from the consequences of motive incongruence to the antecedents of flow experience in interpersonal relationships.

4.2.4 Need for equality

Studies 1-5 consistently suggest that equality matching is not specifically related to any of the Big 3 motives. Furthermore, framing relationships as governed by EM did not result in specific motivation. Compared to the other relational model conditions, achievement and affiliation content were average after EM framing, whereas power content was low. In an exploratory analysis, the within-subjects motive content conditions did not differ, indicating that EM did not arouse any specific Big 3 motive.

Obviously, EM does not map onto achievement, affiliation, or power. Instead, EM could be related to Lerner's (1977, 2003) justice motive. Based on empirical evidence (Lerner, 1974; Lerner & Simmons, 1966; Morgan & Sawyer, 1967), Lerner argued that people have a desire for justice, which is learned in early childhood and continuously shaped in later life, much like Murray's (1938) initial set of social motives. Similar to the Big 3 motives, the justice motive encompasses a set of sub-motives for fairness, reciprocity, and equality of resource allocation, all of which bear resemblance to features of EM (cf. Chapter 2.2.3.3).

Lucas, Zhdanova, and Alexander (2011) recently developed a scale measuring belief in a just world orientations (Lerner, 1974) on four subscales: distributive justice and procedural justice concerning oneself and concerning others, respectively. It would be

interesting to correlate this explicit scale and other explicit/declarative instruments measuring justice orientations with the RPS or the IRM and explore if the self-attributed need for justice can indeed predict EM preferences. In addition, as Fiske (1991) claimed, motivation research would benefit in many ways from the development of a scoring system for *n* Justice or the need for equality in the style of Winter's (1991) *Manual for Scoring Motive Imagery in Running Text*. For the present research, the existence of a distinct coding system for the equality motive (as proposed by Rai & Fiske, 2011) would have resulted in testable hypotheses for Studies 4, 5, and 7. However, both hypotheses concerning effects of an implicit need for equality and hypotheses concerning aroused equality motivation could still be tested with the present materials, since the protocols of the participants are still readily available and could be re-analyzed at any time.

4.2.5 Social and moral motives

The needs for affiliation, achievement, and power are very broad motive categories. They affect many domains of social life (McClelland, 1985) and offer explanations for diverse behaviors (cf. Kehr, 2004b). The present results confirm that they affect preferences for certain relational structures and that they are in turn elicited by real or imagined social relations. Based on RMT, Rai and Fiske (2011) proposed four distinct motives which are hypothesized to operate in the domain of socio-moral judgments and could help explain the roots of moral disagreement. The need for unity is directed at caring for and supporting the integrity of an in-group. It corresponds to communal sharing. The need for hierarchy is directed at establishing and maintaining social ranking orders and is based on authority ranking. The need for equality leads people to judge interpersonal attitudes and behavior in terms of fairness and reciprocity. Finally, the need for proportionality leads to the moral evaluation of cost-benefit calculations.

It would be interesting to assess the influence of dispositional implicit motives for achievement, affiliation, and power on the moral judgments people make in social interactions. It would be especially appealing to examine if there are individual differences regarding the enactment of the proposed moral motives which are independent of cultural

influences and instead could be attributed to individual implicit motive dispositions. In addition, such an examination could help disentangle socio-cultural and dispositional factors in the emergence of moral judgments. Combining the Big 3 motives and the proposed moral motives in order to predict moral judgments would require longitudinal studies across the lifespan, especially during childhood and adolescence, where socio-moral cognitions and emotions are developed (Kohlberg, 1976; Piaget, 1932).

4.2.6 Examiner effects

In psychological experiments involving direct interactions between participants and examiners, characteristics of the examiners like gender and age, motives, traits, attitudes, and interpersonal style can heavily influence participants' cognition and behavior. Motivational field theory (Chapter 2.1.3) would predict that an experimenter's implicit motives exert some influence on motivation and behavior of the participants. The results of the present studies corroborate this prediction and identify two potential sources of experimenter effects. First, as evident from Studies 2-5, explicit and implicit motives affect relational preferences. These relational preferences could become manifest in the behavior of the experimenter and in turn affect the interpersonal relationship between experimenter and participants.

Second, Studies 6 and 7 demonstrated that the type of relational structure between two persons leads to specific motivation. Thus, if the experimenter enacts some relational model, the resulting relational structure will affect the motivation of the participants. If experimenters are instructed to enact particular relational models with their participants, this could likely lead to unintended biased outcomes or aggravation of the results. The Milgram Experiment (Burger, 2007; Milgram, 1963) serves to illustrate this point: The experimenter established an AR relationship with authority and obedience structures. Therefore, elicited power motivation should have played a role in the early stages of the experiment, when participants were not severely stressed by the situation.

Depending on the present relational structure, power, affiliation, or agentic motivation should also originate to some degree in every other experiment involving examiner-participant interactions. Indeed, studies by Klinger (1967) showed that experimenter behavior moderated motive expression in participants' imaginative studies and thus demonstrated that the motive structure of experimenters influenced motivational outcomes of the participants.

4.2.7 A process model of motivation by relational structure

Considering the theoretical models reviewed in Chapter 2, the present results, and their integration discussed so far, I propose the following process model of motivation by relational structure (see Figure 13).
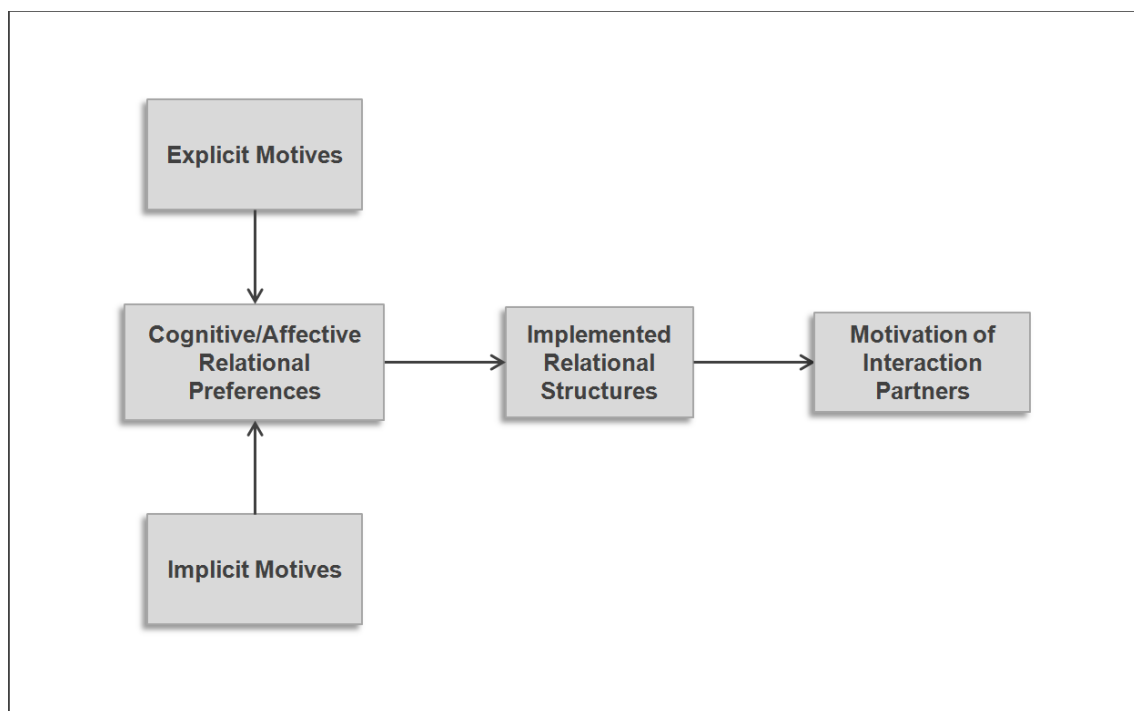
Figure 13. Process model of motivation by relational structure. Cognitive and affective preferences for certain relational structures are influenced by individual dispositional motives (Studies 2-5). If these relational preferences are implemented, the particular relational structure will probably influence the motivation of interaction partners (Studies 6 and 7).

People develop relational preferences based on their implicit and explicit motive dispositions (cf. Studies 2-5). Their relational preferences influence the way they structure their interpersonal relationships. The particular structure of their interpersonal relationships affects the motivation of their interaction partners (cf. Studies 6 and 7) and, ultimately, the interpersonal behavior of their interaction partners.

To illustrate this process, consider the above mentioned example of examiner effects. An experimenter with a strong need for affiliation will likely develop general preferences for communal sharing relationships. These preferences could to some extent become manifest in the experimental situation, as typical communal sharing behaviors are exhibited, for example by showing friendly-submissive instead of neutral facial emotional expressions, by slacking the reins in individual monitoring, or even by imitating the participant and conforming to his nonverbal behavior. In turn, this kind of interpersonal behavior is likely to affect the motivation of the participants and could lead to biased outcomes in the examiner's data.

4.3 Implications for Practice / Future Directions for Applied Research

The present results open up many avenues for applied research on the interplay of motives and relational structures. Furthermore, some of the findings yield implications that could be immediately implemented in many practical settings. It is beyond the scope of this thesis to provide a detailed account of these possibilities. However, in the following I will present some ideas for the application of the results in diverse areas of social life. These areas include organizational behavior, education, intimate relationships, and clinical psychology.

4.3.1 Leadership: Social influence, social structures, and follower motivation

Contemporary leadership theories such as transformational leadership (Bass, 1985; Burns, 1978), leader-member exchange (LMX; Dansereau, Graen, & Haga, 1975; Graen & Uhl-Bien, 1995), servant leadership (Greenleaf, 1977), situational leadership (Hersey, 1985; Hersey & Blanchard, 1969), and ethical leadership (Brown & Treviño, 2006; Brown,

Treviňo, & Harrison, 2005) conceptualize leadership as a form of directed social influence. As such, it is based on a set of leader-follower interaction patterns, moderated by individual motives and personality traits (House & Howell, 1992; McClelland & Boyatzis, 1982), and directed at changing and developing social structures (Uhl-Bien, 2006). In any leader-follower interaction, both the motives of the leader (McClelland & Boyatzis, 1982) and the motives of the followers (Wofford, Whittington, & Goodwin, 2001), as well as the interpersonal relationships between leaders and followers (Gerstner & Day, 1997) have an impact on leadership effectiveness, follower performance, and well-being of the interaction partners. The present results help explain the interplay of these variables, while at the same time opening new possibilities in leadership research.

First, both explicit and implicit leader motives affect relational preferences. Although leader-follower relationships are usually structured in an AR mode, the leadership theories mentioned above suggest that there is more to leadership than two or more people in an asymmetrical relation. Instead, in any leader-follower interaction, leaders can apply any of the basic relational models or any combination of these models (Fiske, 1991; Giessner & Van Quaquebeke, 2010) despite their underlying AR relationship. For example, leaders could choose to share office equipment with their followers on a CS basis. In team meetings, they can treat their followers as equal (EM), as inferior (AR), or differential according to their past performance (MP). In case they have a romantic relationship with one of their followers, their relationship will likely entail some CS aspects, which could lead to role conflicts in formal AR situations. If the dispositional motive structure of leaders affects their relational preferences (as can be concluded from the present studies), leaders will be motivated to implement specific relational models. This assumption received support from motivation research: Leaders with different motive patterns differentially affect the perceptions of their followers regarding team climate and feelings of responsibility (McClelland, 1975). Managers with a strong need for affiliation tend to enact warm, friendly, and caring relationships that negatively affect organizational goals (McClelland & Boyatzis, 1982; McClelland & Burnham, 1976; Spangler & House, 1991).

Winter (2002, 2005) demonstrated that US presidents with a high need for affiliation surrounded themselves with like-minded others (CS), concerned themselves with maintaining positive, egalitarian relationships (CS/EM), and, ultimately, were not that successful at asserting themselves (AR) and achieving their economic goals (MP) as presidents scoring low on need for affiliation.

Second, leaders who enact specific relational structures should elicit specific motivation in their followers (compare the results of Studies 6 and 7). The motivational effects of relational model implementation by leaders have not yet been explored in quantitative studies. However, in a qualitative study, Connelley and Folger (2004) examined the influence of relational models implementation of managers and representatives of the human resource department on various cultural and ethnic groups within a Fortune 500 company. Their results suggest that employee motivation was either enhanced or reduced according to the applied models. The motivational effects were caused by the perceived compatibility of one's own ideal relational models and the models of the (human resource) management. Giessner and Van Quaquebeke (2010) proposed that leadership is considered unethical if the relational models implemented by leaders do not correspond to the relational structures expected by their followers. This kind of norm violation probably thwarts followers' motivation.

In transformational leadership research (Avolio, Bass, & Jung, 1999; Bass, 1985; Burns, 1978), both motivation and relational structures play an important role. Transformational leadership behaviors are distinguished from transactional behaviors. Whereas transactional leadership is oriented on strict economic exchange (MP), transformational leadership entails communal sharing aspects (Eagly & Johannesen-Schmidt, 2001), such as attending to subordinates' individual needs, as well as authority ranking aspects, such as mentoring and role modeling. These aspects are reflected in the leadership styles individualized consideration and charismatic-inspirational leadership (Bass, 1985; see also Weber, 1916, cf. Chapter 2.2.2). Moreover, transformational leadership is conceptualized as a form of social interaction having profound and lasting

motivational effects (Bass, 1985; Burns, 1978). As such, it has been contrasted with transactional leadership, which has no enduring motivational effects (Bass, 1985), and pseudo-transformational leadership, in which leaders exploit their followers for the end of asocial goals (Bass & Steidlmeier, 1999). It could be concluded that the motivational effects of transformational leadership behaviors are partly attributable to the relational structures these behaviors create. That is, the applied transformational leadership style entails the implementation of specific relational models. These models then serve to elicit motivation in followers (see Studies 6 and 7 and Figure 14).

Despite this abstract theoretical support for the interplay of relational models and social motivation in leadership contexts, the actual motivational effects of the implementation of different relational structures by leaders and managers on their followers' motivation have not been tested. This is all the more surprising, as the establishment of certain relational models between leaders and followers can result in long-term motivational effects: Relational incentives which are typical for the specific enacted relational structure remain salient as long as the given relationship is governed by the implemented model. That is, ceteris paribus motivation should be constantly renewed by the present relational incentives. Supposedly, either the lack of an applicable theory of human relationships or the overemphasis on individual attributes in leadership research has been preventing the study of such phenomena so far. The present basic research confirms that RMT could serve to overcome this gap in leadership research.

The following figure (Figure 14) illustrates a sample research model for an applied study on motives and models in the field of leadership. Transformational leadership styles affect motivation and satisfaction of followers. This effect is mediated by those relational models which are typical for the respective leadership styles. The mediation effect is in turn moderated by the motive dispositions of the followers, which affect (a) the acceptance of the implemented relational models and (b) the evaluation of the leader's behavior. The design of the study would require experience-sampling methods (cf. Csikszentmihalyi & Larson, 1992) or diary techniques (cf. Hülsheger, Alberts, Feinholdt, & Lang, 2013). That

is, after an initial assessment of followers' motives and the transformational leadership style of their leader, followers indicate their perception of relational model implementation, leader behavior, and (relationship or job) satisfaction on a daily basis. The moderated mediation model depicted in Figure 14 could be analyzed using the *Process* tool, model 15 (Hayes, 2012).
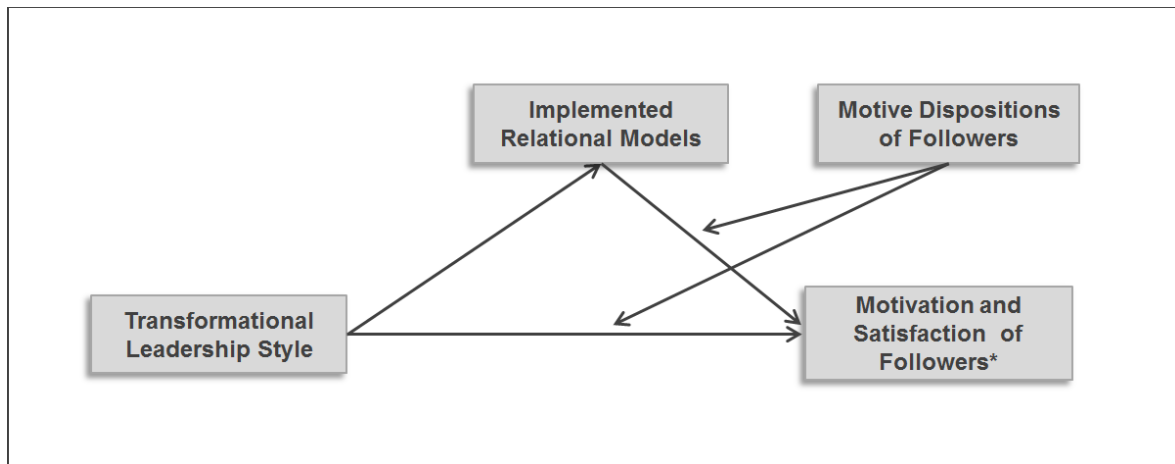
Figure 14. Research model on the joint effects of transformational leadership styles, implemented relational models and dispositional motives on follower motivation and satisfaction. The mediating effect of implemented relational models on motivation and satisfaction is moderated by followers' motive dispositions.
* Follower motivation could be measured by analyzing daily written reports (i.e., diary entries) on their work schedule and job-related interactions.

The research model illustrated above is one of many promising applications of the present results in leadership research. In addition, the present studies contain a general method for assessing motivational effects of implemented relational structures in leader-follower relationships. By measuring motive content of discussions, speeches, or written documents, conclusions regarding actual motivation of both leaders and followers can be drawn. The content-coding method applied in the present research is non-reactive and does not underlie the typical demand and social desirability effects that reduce the validity of self-report measures. In sum, leaders and leadership researchers alike could profit from

the application of RMT, from the implicit measurement of motives and actual motivation, or from a combination of both.

4.3.2 Human resource management: Selection, development, and retention

The present results provide valuable insights for human resource management. In the following, I will briefly highlight three areas for applied research and practice.

First, human resource managers could benefit from considering both motivational and relational variables in personnel selection. Vodosek's (2003, 2009) studies demonstrated that the use of different relational models within work teams can thwart motivation and performance. To prevent relationship conflicts (Jehn, 1995) caused by different implemented relational models, items from the IRM (Vodosek, 2009) and the RPS (Biber et al., 2008; Haslam et al., 2002) could be used to screen relational preferences within existing work groups. Subsequently, new members having equal preferences could be integrated into the group. Similarly, existing conflicts in work groups could be analyzed in terms of ideal and actual relational model divergence. Team leaders, human resource managers, and external consultants could employ the results of these analyses to discuss and resolve existing structural disagreements and misperceptions with the team members. Furthermore, they could use the results to restructure problematic work groups by adding new members, by replacing members, or by changing the predominant relational model. These interventions can also be extended to organization-wide change measures, such as adapting recruitment practices and promotion policies to the needs of different stakeholders (cf. Connelley & Folger, 2004). Applied research has yet to examine the influence of relational model perceptions on motivational and performance outcomes. Studies with actual workgroups are needed to link relational models and their divergence between group members to various subjective and objective group outcomes, such as person-team fit, identification and satisfaction with the team, organizational citizenship behavior, and team performance.

Second, human resource managers could benefit from the motivational effects of implemented relational models. These effects could be used for group development measures. Nearly all contemporary models of group development incorporate stages of relational ambiguity, role conflicts, and the forming of persistent social structures (e.g., Gersick, 1988; Tubbs, 1995; Tuckman & Jensen, 1977; Wheelan, Davidson, & Tilin, 2003). Although these stages of increased conflict are necessary for a group to function effectively in the end, they are often perceived as time-consuming and strenuous by the group members and can lead to suboptimal performance (cf. Jehn & Mannix, 2001). The process of forming relationships which are based on mutual trust and consistent interaction patterns could be arranged more efficiently by diagnosing and discussing existing and ideal relational structures. Moreover, the motivational effects of existing structures could be employed to generate energy for in-group change processes and group performance. For example, an existing consensus on the establishment of CS relations and the resulting affiliation motivation could be used to increase group cohesion by staging incentive events like boat trips or parties. In contrast, the agentic motivation generated by MP structures may be utilized to assign challenging individual tasks or to hold out individual chances for promotion.

Third, the motivational effects of implementation, development and change of relational structures could be used for employee retention. Fluctuation is one of the biggest challenges for human resource management (Huf, 2012; Lee, Mitchell, Sablynski, Burton, & Holtom, 2004). Consequently, retention management has become one of the key topics in management literature (Holtom, Mitchell, Lee, & Eberly, 2008). Employee turnover intentions are predominantly caused by social factors, such as organizational culture, strenuous relationships with coworkers, lack of support by supervisors, and intra-organizational conflict (Griffeth, Hom, & Gaertner, 2000; Huf, 2012; Steel & Lounsbury, 2009). However, positive relationships with coworkers and supervisors, including social and emotional support, prevent fluctuation and reduce turnover intentions (Maertz & Griffeth, 2008; Mitchell, Holtom, Lee, Sablynski, & Erez, 2001; Moynihan & Pandey,

2008). If people have indeed differential preferences for certain relationships, then realizing their preferred relationships could buffer the impact of negative context factors on turnover intentions. Management should thus provide opportunities to realize these types of relationships. Moreover, the present results showed that relational preferences are rooted in individual motive dispositions and that distinct relational structures have specific motivational effects. Therefore, further applied research in the field of organizational behavior should consider interaction effects of provided relational structures, actual motivation caused by these structures, and individuals' dispositional motives on turnover intentions. The following proposed research model is based on the findings of the present studies. It requires a time-series design using a multi-method analysis of motivational, relational, and behavioral variables (see Figure 15).
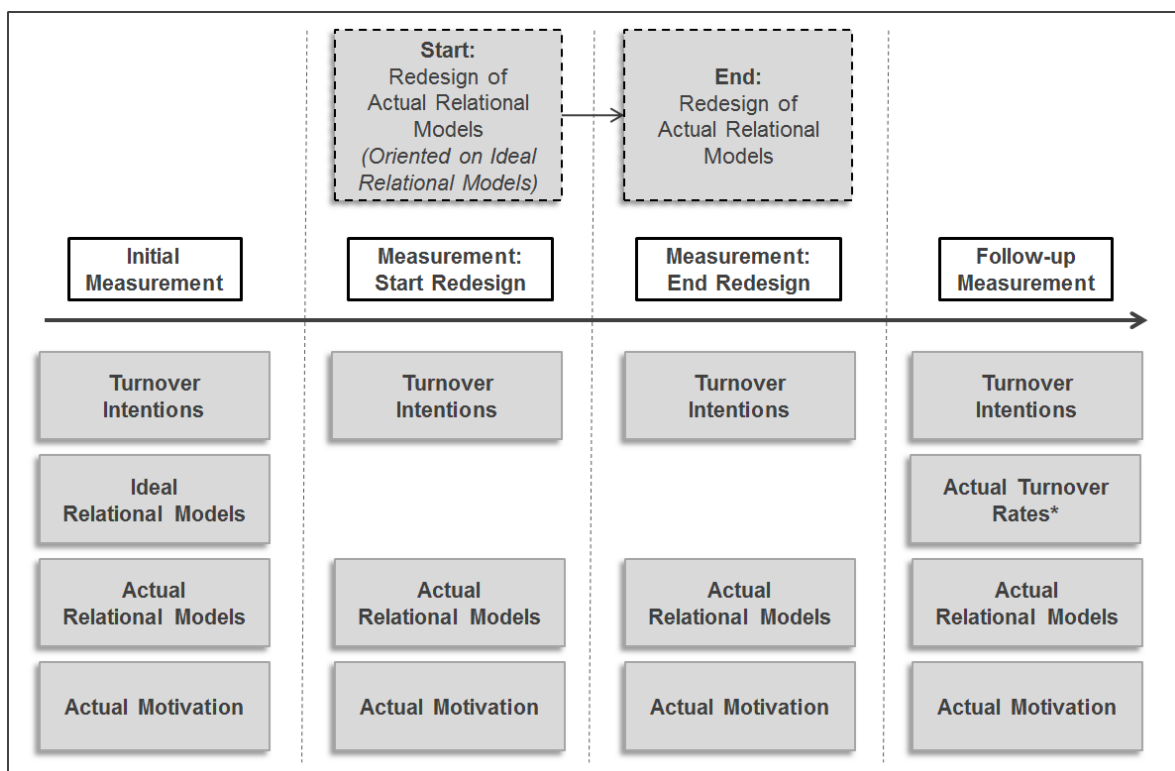
Figure 15. Time-series design for testing the effects of a re-design of actual relational models at the workplace on changes in turnover intentions.

* Actual turnover rates during the period between the end of the re-design and the follow-up measurement have to be compared with other periods in time of similar length and environmental influences.

The model depicted in Figure 15 is based on a team-level intervention measure, specifically a redesign of relational structures: Actual relational models should be aligned with individuals' ideal relational models or, judging from the present results, with individuals' dispositional motives. Actual motivation and turnover intentions are measured at four points in time: Some time before the intervention (baseline measurement), at the start of the intervention, at the end of the intervention, and after some period of time (follow-up measurement). Since motivation is a product of desired and implemented relational models, it should be positively affected by the redesign. As the realization of desired relational models is assumed to buffer the effects of negative work-related context factors on turnover intentions (see above), turnover intentions as well as turnover rates should be lower in the period following the redesign than in other comparable periods of time before the intervention.

It is beyond the scope of this thesis to further elaborate the presented research model or to provide a detailed account of other effective interventions involving motivational and relational models. For example, little is known about the effects of discrepancies between individual relational preferences and organizational culture, between implemented relational models of supervisors and followers, and between the shared models of different stakeholder groups in organizations. Still, these issues provide valuable avenues for further research on relational preferences, relational structures, and motivational variables.

4.3.3 Clinical psychology: Motives, models, and the personality disorders

Both motives and relational models have been related to personality disorders. Weinberger and colleagues (2010) compared implicit n Affiliation and n Intimacy with Bornstein's (2002, 2005; Bornstein, Hill, Robinson, Calabrese, & Bowers, 1996) characterization of dependent persons. They argued that people described by Bornstein (2005) as highly dependent show characteristics of persons scoring very high on measures of n Affiliation, whereas people described as healthy dependent resemble persons with high scores on n Intimacy. Locke (2000) reported convergence of explicit

agentic values and narcissistic as well as antisocial personality disorders. In the same study, agentic values were correlated with n Power.

In the domain of social relations, personality disorders have been mapped onto interpersonal circumplex models (e.g. Leary, 1957; Wiggins & Trobst, 1999) by clinical researchers (Birtchnell & Shine, 2000; Sim & Romney, 1990; Soldz, Budman, Demby, & Merry, 1993). Further elaborating this idea, Haslam et al. (2002) argued that personality disorders are associated with aberrations in relational models. These aberrations can take on three forms: They represent either persistent difficulties to engage in certain relational models, or extremely high or low preferences for certain models, or extremely frequent and often inappropriate implementations of these models. Haslam et al. (2002) reported systematic correlations between relational models and personality disorders in a clinical sample. Dependent personality disorder was associated with preferences for CS and AR, probably indicating a mixture of wishes for closeness and submission. This would correspond to the characterization of dependent persons as high in n Affiliation (Weinberger et al., 2010). Narcissistic persons showed frequent implementation and high desire for AR (superior position), which would be well in line with Locke's (2000) findings regarding agentic values, power, and narcissism. Unfortunately, the sample size in Haslam et al.'s (2002) study was not very large ($N = 57$). It would be beneficial to assess implicit and explicit motives, symptoms of personality disorders, and relational preferences in a single study with a large clinical sample comprising people with various personality disorders, but as well with mild forms of depression or social anxiety disorders. This would allow for investigating potential interaction effects of corresponding relational models and motives and could shed light on the etiology of these mental disorders.

Based on the present findings, Figure 16 illustrates a research design representing the combination of Weinberger et al.'s (2010) and Haslam et al.'s (2002) ideas. The effect of n Affiliation on dependent personality disorder is moderated by the interaction of preferences for AR$^-$ and CS. That is, symptoms of dependent personality disorder are most pronounced when individuals with very high n Affiliation also have pronounced

preferences for AR⁻ and CS, respectively. The moderation model depicted in Figure 16 could be analyzed using the *Process* tool, model 3 (Hayes, 2012). It would require a large clinical sample, which could additionally be compared with a non-clinical sample in order to discern pathological combinations of motives and relational models from non-pathological combinations.
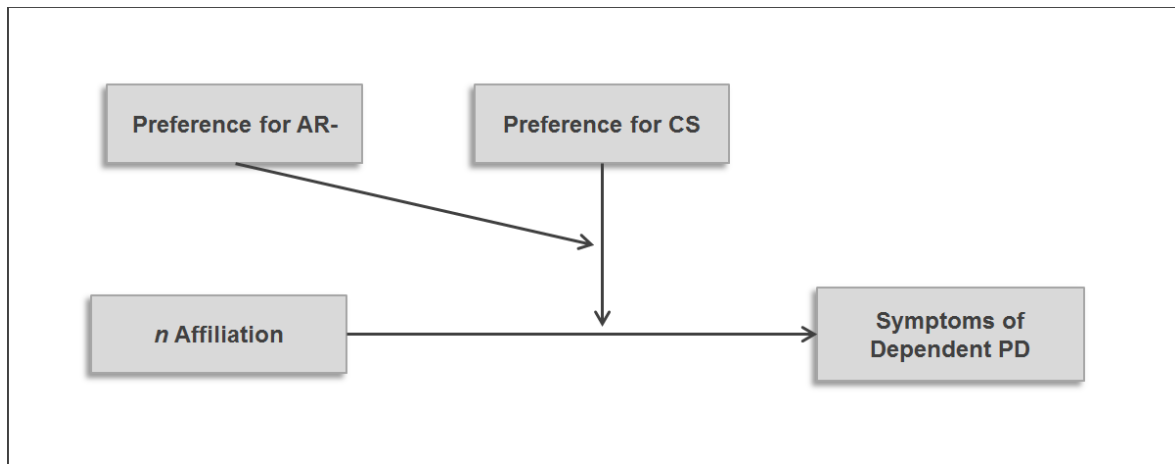
Figure 16. Moderation model of factors influencing the symptoms of dependent personality disorder. CS = communal sharing; AR⁻ = authority ranking, inferior position; PD = personality disorder.

4.3.4 Education: Authority ranking, power, and prosocial influence

Research on implicit and explicit motives in the field of teaching and education is still scarce. Winter (1973) reported that highly power motivated people tend to choose careers which involve teaching others. Presumably, highly power motivated individuals are attracted by teaching professions, because they provide incentives that signal possibilities to exert influence on others and to give unsolicited help. McClelland (1970), Winter (1973) as well as Magee and Langner (2008) distinguished between personalized and socialized power. Whereas the first is associated with antisocial decisions and behavior, the second is related to prosocial helping behavior serving others' interests (Magee & Langner, 2008). Arguably, teaching professions provide incentives for both personalized and socialized power motives, but it is probably people with a high socialized power motive who are the most attracted by positions in teaching and education. In support of this argument, Winter

and Barenbaum (1985) postulated that high need for power combined with high sense of responsibility results in desire to exert prosocial influence in educational positions.

The relation between teacher and student is hierarchical by nature. Moreover, educational institutions and their staff are generally required to exert prosocial influence on students. This underlying AR structure of educational settings should provide many incentives for individuals with high power motives. In turn, the present studies suggest that such individuals are highly motivated to implement AR relations. Field studies in teaching and education could examine the expected mutual influence of AR relations and teachers' power motives. In addition, it would be interesting to discern teachers' personalized and socialized power motives and to dissociate their influence on preferences for and implementation of AR structures in the classroom.

Furthermore, both teachers and students should be affected by the interplay of teacher motives and implemented relational structures. It would be interesting to assess teachers' subjective well-being and mental health as a function of their motive dispositions and the perceived violation of AR structures (cf. Giessner & Van Quaquebeke, 2010). For example, violation of AR structures by students should elicit power stress in teachers high in implicit need for power. Power stress, in turn, has been shown to affect psychological well-being (Fodor, 1985; Fodor & Wick, 2009) and aggressive behavior (McClelland, 1976). Figure 17 illustrates the assumed effect regarding differences in AR preferences of teachers and their students on teachers' subjective well-being (cf. Fodor & Wick, 2009). The depicted response surface analysis is based on a polynomial regression analysis (cf. Edwards, 2001, 2002) of simulated data and plotted using the RSA package for R (Schönbrodt, 2013).
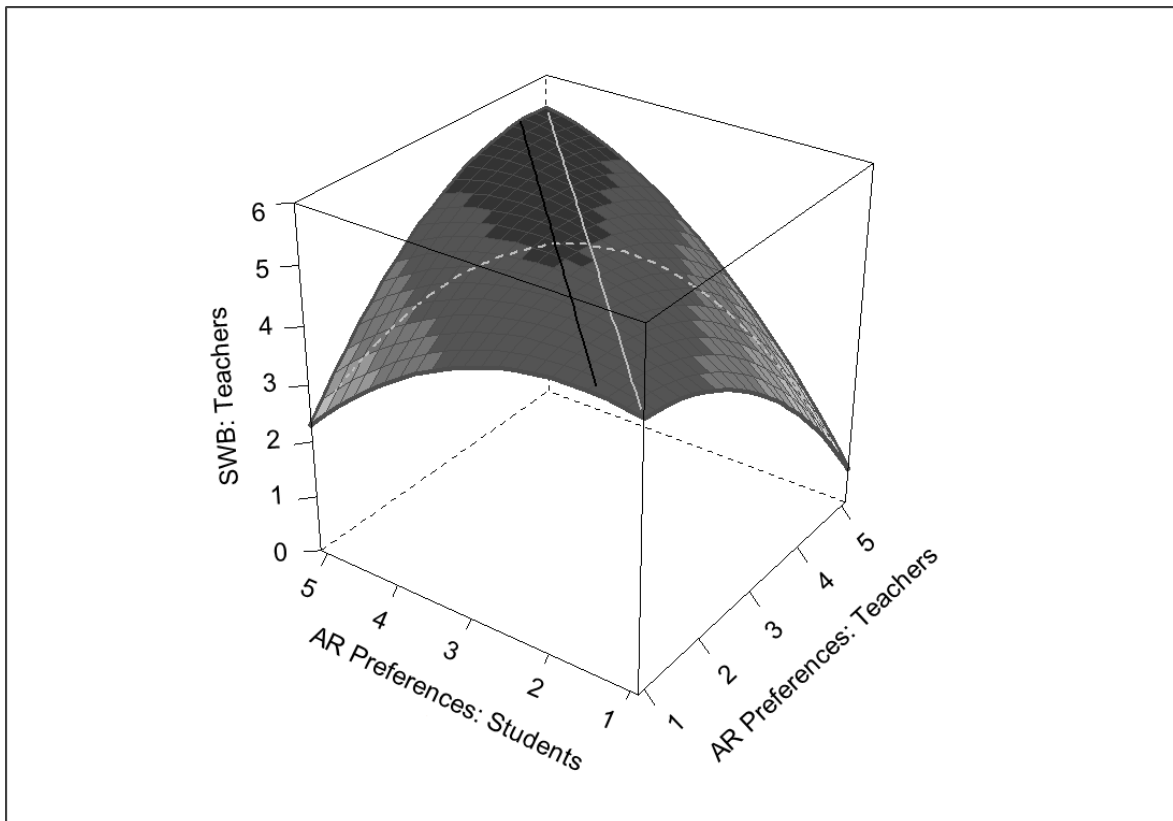
Figure 17. Effects of AR preference divergence on the subjective well-being of teachers based on a response surface analysis with artificial data. Subjective well-being is high if students and teachers share the same preferences, but low if their preferences diverge. Dark-colored areas represent high subjective well-being; light-colored areas represent low subjective well-being. AR⁻ = authority ranking; SWB = subjective well-being.

Subjective well-being is high if teachers' AR preferences correspond to the preferences of their students, as indicated by the dark-colored areas in Figure 17. As AR preferences of teachers and students diverge, subjective well-being is reduced. This effect is independent of the direction of the divergence. However, the divergence effect is stronger when teachers having high AR preferences are confronted with students having low AR preferences, than vice versa. In addition, there is a positive slope along the line of congruence, indicating that teachers' subjective well-being is higher if both students and teachers have strong preferences for AR than if they have weak preferences for AR. This effect would be in line with McClelland's (1970) and Winter's (1973) assumptions concerning the motive dispositions of teachers (see above), and with the present results, which show that power motivation is associated with AR preferences.

The present experiments also suggest that AR relations trigger power motivation. Thus, the extent to which a teacher implements AR structures in the classroom and beyond should affect students' power motivation. Adopting Winter's (1973) and McClelland's (1970, 1975) perspective, this could lead to an increase in both socialized and/or personalized power-motivated behavior of students as well as to long-term effects on students' explicit or implicit power motives. Therefore, long-term studies assessing AR implementation by teachers and its effects on the motivation of students are necessary.

Teachers have complex personalities, so that reducing their personalities to a single motive domain is neither practical nor ethical. Furthermore, teachers often apply multiple relational models in the classroom, for example when they discuss ambiguous case studies with their students (EM), when they share food and other resources at field trips (CS), or when they highlight the relevance of certain topics and methods for students' careers and clarify their own role as facilitators of relevant knowledge (MP). The tendency to apply other models than the typical educational AR structure is probably dependent on the strength of teachers' power motives. However, Fiske's (1991) review of social structures and Studies 2-5 suggest that these tendencies are also influenced by other dispositional motives. Systematic research on dispositional motives and their effects on teacher-student relationships is still scarce (but see Schiepe-Tiska, 2013). The vast literature on antecedents, practices, and consequences of teacher-student interactions (for a review see Good & Brophy, 2000) could benefit from a deeper understanding of the interplay of teachers' motives and relational models.

4.3.5 Intimate relationships: Congruence, transgressions, and break-ups

Both motives and relational models have been separately employed for the explanation of relevant antecedents and outcomes of intimate relationships. For example, *n* Intimacy positively affects marital happiness (McAdams & Vaillant, 1982). In contrast, *n* Affiliation in interaction with psychological tension and stress predicts abuse towards romantic partners (Mason & Blankenship, 1987). A high power motive has been shown to negatively affect perceived relationship quality (Stewart & Rubin, 1974). Furthermore, it

corresponds to physical abuse and sexual aggression in couples (Zurbriggen, 2000). Recently, Hagemeyer and Neyer (2012) linked agency and communion needs to relationship satisfaction, thereby distinguishing actor and partner effects. They found consistent negative effects of agency needs and positive effects of communion needs. Hagemeyer, Neberich, Asendorpf, and Neyer (2013) explored intra- and interpersonal effects of congruence between the implicit communion motive and the explicit desire for closeness on relationship satisfaction and stability. Intrapersonal congruence of explicit and implicit motives predicted both relationship satisfaction and couple stability over one year. Moreover, couple instability was predicted by motive incongruence between relationship partners. Here, relational preferences and subsequent implementation of different relational models could act as mediators: Judging from the present studies, incongruent motives predict incongruent relational preferences. These incongruent preferences likely lead to differing implemented relational models and to perceived transgressions (Fiske & Tetlock, 1997; Giessner & Van Quaquebeke, 2010; Goodnow, 2004; McGraw & Tetlock, 2005) of relationship organization. The resulting conflicts could be major reasons for break-ups.

On the positive side, intimate relationships could profit from the congruence of both motives and relational models within and between partners. For once, the enactment of CS structures should lead to affiliation and intimacy motivation, which constitute protective factors for couple relationships (McAdams & Vaillant, 1982; Reis & Shaver, 1988; Sanderson & Cantor, 2001). For twice, congruence of relational models between partners should positively affect relationship stability. Finally, congruence between motives and enacted relational models should lead to relationship satisfaction via motive satisfaction of each of the partners. Long-term studies using dyadic designs and actor-partner interdependence models (cf. Cook & Kenny, 2005) could be used to explore the interplay of these variables in intimate relationships. Figure 18 illustrates a basic sample actor-partner interdependence research model derived from the present results. Both partners of married couples indicate their actual CS implementation within their marriage at a

certain point in time or at several points in time. Intimacy motivation is measured at a later point in time. The model distinguishes between effects caused by oneself and effects caused by one's partner. Thus, it is possible to assess the unique motivational effects of CS implementation by the partner (3). Moreover, it is possible to analyze correlations between CS implementations and degrees of intimacy motivation in couples (1) as well as the degree of intimacy motivation that stems from one's own efforts to implement CS (2). The reverse processes, that is, effects of intimacy motivation on actual CS implementation, are also likely and could be tested using the same statistical model. The model could be extended by introducing mediators, for example a training program in which CS implementation is practiced. Couple and relationship therapists, researchers, and the public at large could benefit from such a holistic analysis.
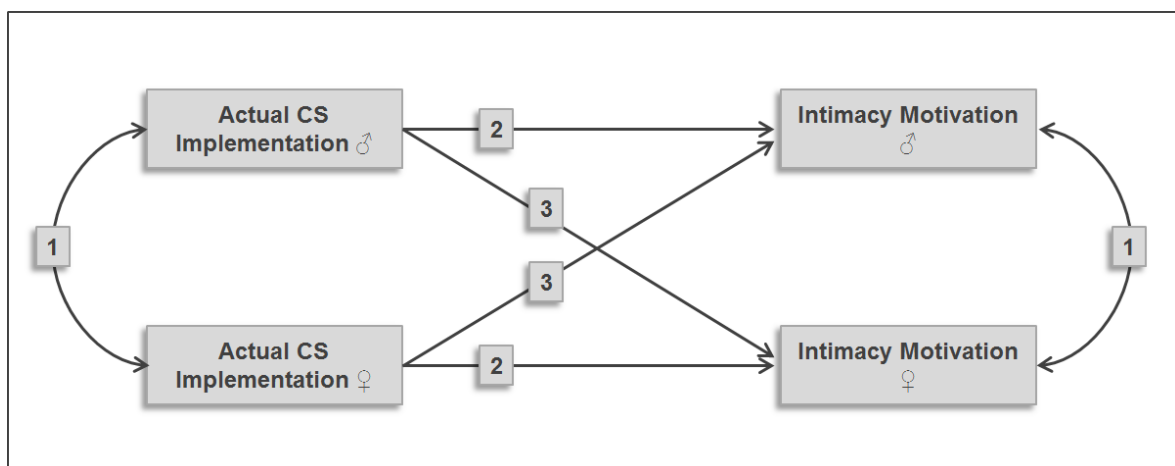
Figure 18. Actor-partner interdependence model (APIM) for testing actor and partner effects of communal sharing implementation on intimacy motivation in couples. CS = communal sharing; Numbers denote specific effects: 1 = correlation between the same variables measured at the same point in time, different actors; 2 = actor effect; 3 = partner effect.

4.3.6 Physical attractiveness: The influence of relational structure

Common sense tells us that physical attractiveness lies in the eye of the beholder. Still, the influence of perceivers' personality on the perception of physical attractiveness has been strangely neglected in social psychological research. Regarding the link between

relationships and physical attractiveness, the seminal work of Berscheid (Dion, Berscheid, & Walster, 1972; Berscheid & Hatfield, 1978) has explored the influence of physical attractiveness on relationship characteristics (see Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000, for a review). Only recently, researchers have begun to look for effects in the opposite direction. Anderson, Adams, and Plaut (2008) contrasted voluntaristic-independent subjective construals of relationships with embedded-interdependent subjective construals of relationships and found that attractiveness ratings varied as a function of these dimensions.

Strasser, Strasser, and Giessner (2012) reported two studies in which they first assessed their participants' subjective relational models with interaction partners (either acquaintances or previously unknown persons). Subsequently, the participants rated the physical attractiveness of their interaction partners. The physical attractiveness of both acquaintances and previously unknown interaction partners was positively affected by the perceived degree of CS structure in the relationships. In a related experiment, the authors varied participants' fictional relationship with previously unknown persons using a similar procedure as in the present Studies 6 and 7. They found that in CS (MP) relationships attractiveness ratings were higher (lower) than in control conditions where no relational model was provided. It would be interesting to explore if the corresponding affiliative and agentic motive dispositions moderate this effect of relational models on perceived physical attractiveness.

Similarly, it would be interesting to test for possible interaction effects of actual specific motivation and relational structures. By applying an experimental design resembling the one in Studies 6 and 7, one could assess participants' attractiveness ratings of real or artificial faces after relational framing and relate their ratings to measures of their actual motivation. Partner agencies, partner-matching tests, and the development of partner-matching algorithms would benefit from such a joint analysis of individual and relational factors.

4.3.7 Relational structures: A long-term motivator

The present experiments have an implication that is not restricted to some special domain of social behavior, but instead concerns many 'occasional' interactions as well as 'chronic' relations: The imagined relationship with another person was apparently a great motivator for the participants. Even more interesting is the result that the imagination of different relational structures elicited varying kinds of motivation. This is probably also true for actual relationships.

Relationships and their underlying models constitute relatively enduring and stable situational factors (Fiske, 1991). Once a certain relationship between two persons has been established, the interactions within these relationships follow certain behavioral patterns, e.g. in long-term relationships between salespeople, in relationships between mothers and their children, or in relationships between leaders and followers. In addition, social categorization processes like implicit personality theories, primacy effects (Asch, 1946), and stereotypes (Tajfel, 1981) help sustain the prototypical interaction patterns in relationships. These interaction patterns can be analyzed by means of RMT. The results of such an analysis could be used to predict and to alter the motivation emerging in the current relationships.

Moreover, providing appropriate relational structures from the start of a relationship could serve to elicit the kind of motivation in interaction partners one has intended from the very beginning of this relationship. Although relational dynamics may be far more complex than the foregoing analyses suggest, the dynamic interplay of relational structures and motivation follows to some extent the pattern of a self-sustaining circuit: Motivation is created by relational structures; this motivation leads to relational preferences, which lead to the implementation of the very relational structures that created the motivation. That is, by providing adequate structures one can achieve lasting powerful affiliations. Managers, leaders, therapists, teachers, couples, and singles alike could benefit from a deeper understanding of the processes that moderate and sustain these

dynamics: Whatever the underlying processes for motivation by relational models, it can certainly be exploited for useful interventions.

4.4   Conclusion

The reported studies are the first to establish empirical links between dispositional motives and relational models. Based on relational models theory (Fiske, 1991, 1992) and contemporary theories of motivation (Kehr, 2004b; McClelland et al., 1989; Schultheiss, 2001; Stanton et al., 2010) I derived and tested hypotheses on the interplay of the Big 3 explicit and implicit motives for affiliation, achievement, and power on the one side, and the basic relational models communal sharing, authority ranking, equality matching, and market pricing on the other.

The results of the literature study confirmed that relational models and social motives are conceptually related. Studies 2-5 revealed that both explicit and implicit measures of the Big 3 motives repeatedly showed detectable and specific effects on preferences for certain basic relational models. This finding is in line with the reviewed motivation theories, which assume the presence of both declarative and non-declarative incentives in interpersonal relationships. The reported experiments (Studies 6 and 7) demonstrated that different relational structures elicit different kinds of motivation.

The mutual influence of individual motives and relational models found in the present studies opens up further avenues for both basic and applied research. Moreover, it has many immediate practical implications which can now be implemented, tested, and evaluated.

Zusammenfassung [Summary]

Die vorliegende Arbeit vereinigt Theorien und Befunde der klassischen Motivationsforschung (Kehr, 2004b; McClelland, 1985; McClelland et al., 1989; Murray, 1938; Stanton et al., 2010) mit der Theorie Relationaler Modelle (Fiske, 1991, 1992). Sie fasst die Entstehung sozialer Motivation als ein Zusammenspiel von individuellen Motiven und relationalen Anreizen auf und zeigt, dass Präferenzen für bestimmte grundlegende Beziehungsstrukturen von persönlichen Motiven abhängen.

Neben einer kritischen Analyse der Literatur zu sozialen Motiven und relationalen Modellen wurden zunächst spezifische konzeptuelle Verbindungen zwischen den Motiven Anschluss, Macht und Leistung und den grundlegenden Beziehungsstrukturen Communal Sharing (CS), Authority Ranking (AR), Equality Matching (EM) und Market Pricing (MP) gezeigt. Anschließend wurden anhand von fünf empirischen Studien die Auswirkungen persönlicher expliziter (deklarativer, sprachlich repräsentierter) und impliziter (non-deklarativer, vorsprachlich gelernter) Motive auf Beziehungspräferenzen dargestellt. Zuletzt wurde mit Hilfe von zwei Experimenten veranschaulicht, dass bestimmte prototypische Beziehungsstrukturen spezifische Motivation hervorrufen.

Soziale Motive orientieren, selegieren und energetisieren soziales Verhalten in Richtung von sozialen Beziehungen, die bestimmte Anreize für diese Motive beinhalten. Diese motivspezifischen Anreize sollten sich in konzeptuellen Beschreibungen grundlegender Beziehungsstrukturen widerspiegeln. Motivspezifische Inhaltskodierungen von theoretischen Beschreibungen der grundlegenden relationalen Modelle verdeutlichten, dass CS-strukturierte Beziehungen vor allem anschlussthematische Anreize umfassen, während AR-strukturierte Beziehungen Machtanreize bereitstellen und MP-strukturierte Beziehungen leistungsthematische Anreize beinhalten (Studie 1).

Die Studien 2-5 zeigten, dass sich korrespondierende explizite und implizite Motive auf individuelle Vorlieben für dieselben Beziehungsstrukturen auswirken und dass diese Auswirkungen motiv- und modellspezifisch sind. Präferenzen für CS-strukturierte

Beziehungen wurden ausschließlich vom impliziten (Studien 4, 5) und expliziten (Studien 2, 3, 5) Anschlussmotiv vorhergesagt. Präferenzen für AR-strukturierte Beziehungen wurden ausschließlich vom expliziten wie impliziten Machtmotiv beeinflusst. Präferenzen für MP-strukturierte Beziehungen wurden von einer Kombination aus Macht- und Leistungsmotiv (Agency-Motiv; Bakan, 1966) bestimmt.

Die fundamentalen relationalen Modelle besitzen distinkte logische Strukturen. Diese relationalen Strukturen bilden einzeln oder in Kombination einen Rahmen für die Ausgestaltung komplexer interpersonaler Beziehungen. Beziehungen, die auf einem einzelnen relationalen Modell beruhen sollten aufgrund ihrer Struktur (Studie 1) motiv-spezifische Anreize enthalten, zu spontanen sowie überlegten Beziehungspräferenzen führen (Studien 2-5) und demnach in der Lage sein, spezifische Motivation zu erzeugen. In den Studien 6 und 7 wurden den Teilnehmern fiktive Interaktionspartner zusammen mit einer Beschreibung der fiktiven Beziehung zu diesen Personen vorgestellt. Die Beziehung entsprach einer prototypischen Beschreibung eines der fundamentalen relationalen Modelle. Die Analyse von Texten, die die Teilnehmer nach dieser Framing-Manipulation verfassten zeigte, dass CS Framings zu Anschlussmotivation führten, dass AR Framings Machtmotivation auslösten und dass MP Framings agentische Motivation zur Folge hatten.

Die Ergebnisse der vorliegenden Arbeit bergen wichtige theoretische Implikationen für die motivationale Struktur von sozialen Beziehungen, aber auch für die relationale Struktur sozialer Motive. Forschung und Praxis in allen Gebieten sozial motivierten Handelns können von den hier gewonnenen grundlegenden Erkenntnissen profitieren.

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Appendix A – Literature Study: Raw Data

Table I

Main Authors, Publication Years, Word Counts, and Raw Motive Content Scores of the Texts Used in the Literature Analysis (Study 1).

Main Author (Year)	Journal	Model	Word Count	Achieve-ment	Affiliation	Power
Biber (2008)	*European Journal of Personality*	CS	81	0	1	0
		AR	104	0	0	3
		EM	39	0	1	1
		MP	109	2	0	0
Boer (2011)	*European Management Journal*	CS	189	0	1	0
		AR	240	0	0	3
		EM	223	1	1	1
		MP	163	0	0	0
Brito (2011)	*Journal of Social and Personal Relationships*	CS	54	0	1	1
		AR	45	0	0	2
		EM	61	0	0	0
		MP	64	1	0	0
Fiske (1991)	*Journal of Personality and Social Psychology*	CS	89	0	2	0
		AR	70	1	1	1
		EM	88	1	0	0
		MP	121	0	1	0
Fiske (1992)	*Psychological Review*	CS	4200	0	21	8
		AR	2814	1	0	24
		EM	3977	7	7	13
		MP	3154	8	0	6

Table I (continued)

Main Author (Year)	Journal	Model	Word Count	Achieve-ment	Affiliation	Power
Fiske (2005)	*Interpersonal Cognition*	CS	339	1	7	0
		AR	368	0	0	8
		EM	225	2	1	3
		MP	282	3	0	4
Fiske (2009)	*European Journal of Social Psychology*	CS	148	0	3	0
		AR	113	0	0	2
		EM	108	1	0	1
		MP	56	0	0	1
Giessner (2011)	*Journal of Business Ethics*	CS	119	0	2	0
		AR	98	0	0	3
		EM	106	1	1	2
		MP	165	1	0	1
Green (2006)	*Swiss Journal of Psychology*	CS	27	0	1	0
		AR	22	0	0	1
		EM	26	0	1	1
		MP	39	1	0	0
Haidt (2001)	*Psychological Review*	CS	35	0	0	2
		AR	36	0	1	1
		EM	35	0	0	0
		MP	32	0	0	0
Haslam (2002)	*Psychology and Psychotherapy*	CS	300	0	6	2
		AR	132	0	0	4

Table I (continued)

Main Author (Year)	Journal	Model	Word Count	Achieve-ment	Affiliation	Power
Haslam (2002)	*Psychology and Psychotherapy*	EM	46	0	0	0
		MP	56	1	0	1
Lee (2010)	*Psychological Review*	CS	82	0	2	0
		AR	42	0	0	1
		EM	51	0	0	0
		MP	59	0	0	0
McGraw (2005)	*Journal of Consumer Psychology*	CS	57	0	1	0
		AR	63	0	0	0
		EM	63	0	1	0
		MP	42	0	0	0
Rai (2011)	*Psychological Review*	CS	1567	0	15	10
		AR	820	0	0	11
		EM	536	3	2	5
		MP	792	5	0	3
Realo (2004)	*Journal of Social and Personal Relationships*	CS	52	0	1	0
		AR	30	0	0	1
		EM	39	0	1	0
		MP	52	0	0	0
Vodosek (2009)	*International Journal of Psychology*	CS	82	0	1	0
		AR	39	0	0	1
		EM	37	0	1	1
		MP	30	1	0	0

Note. CS = communal sharing, AR = authority ranking, EM = equality matching, MP = market pricing. All articles are in listed in the references section.

Appendix B – Items of the Personality Research Form

Table II

Items and Big 3 Motive Subscales of the German Version of the Personality Research Form (PRF; Stumpf, Angleitner, Wieck, Jackson, & Beloch-Till, 1985)

Item	Subscale
Als Politiker wäre ich sicherlich einer der mächtigsten Führer meiner Partei.	Pow
Als Verkäufer hätte ich keinen Erfolg, weil ich nicht sehr redegewandt bin.	Ach
Die meisten Leute finden mich warmherzig und gesellig.	Aff
Es ist mir an sich ziemlich gleichgültig, ob ich einer der Besten in meinem Arbeitsgebiet werde.	Ach
Es macht mir nichts aus zu arbeiten, während andere Leute sich amüsieren.	Ach
Es macht mir wirklich Spaß, gesellschaftliche Verpflichtungen wahrzunehmen.	Aff
Gewöhnlich gehe ich lieber allein aus als zu einer Party.	Aff
Harte Arbeit gefällt mir nicht.	Ach
Ich arbeite an Problemen weiter, bei denen andere schon aufgegeben haben.	Ach
Ich arbeite lieber mit anderen zusammen als allein.	Aff
Ich arbeite lieber, als dass ich spiele.	Ach
Ich arbeite, weil ich arbeiten muss, und nur deswegen.	Ach
Ich ärgere mich über mich selbst, wenn ich etwas nicht gründlich gelernt habe.	Ach
Ich bemühe mich, andere Leute kennenzulernen.	Aff
Ich bin keine energische oder tonangebende Persönlichkeit.	Pow
Ich entscheide mich meist für Freizeitbeschäftigungen, die ich zusammen mit anderen Leuten ausüben kann.	Aff
Ich finde, jedes Erlebnis bedeutet mehr, wenn man es mit einem Freund teilt.	Aff
Ich fühle mich in meinem Element, wenn es darum geht, die Tätigkeiten anderer zu leiten.	Pow
Ich fühle mich vielen Situationen gegenüber nicht gewachsen.	Ach
Ich habe mir vorgenommen, wenigstens etwas mehr zu leisten als irgendjemand vor mir.	Ach
Ich habe nur wenig Interesse daran, andere zu führen.	Pow
Ich habe verhältnismäßig wenig Freunde.	Aff
Ich halte es für besser, zurückhaltend als betont selbstsicher zu sein.	Pow
Ich kann andere ziemlich geschickt bei der Stange halten.	Pow
Ich möchte frei bleiben von Verpflichtungen gegenüber Freunden.	Aff
Ich setze mir oft schwer erreichbare Ziele.	Ach

Ich strebe nach Positionen, in denen ich Autorität habe.	Pow
Ich unternehme selten große Anstrengungen, nur um anderen eine Freude zu machen.	Aff
Ich verbringe viel Zeit damit, Freunde zu besuchen.	Aff
Ich vermeide einflussreiche Positionen.	Pow
Ich versuche, andere unter meinen Einfluss zu bekommen, anstatt zuzulassen, dass sie mich kontrollieren.	Pow
Ich versuche, nur so viel zu arbeiten, dass ich mein Auskommen habe.	Ach
Ich versuche, so oft wie möglich in der Gesellschaft von Freunden zu sein.	Aff
Ich wäre ein schlechter Richter, weil ich ungern anderen sage, was sie zu tun haben.	Pow
Ich werde lieber nach Arbeitsleistung als nach Zeit bezahlt.	Ach
Ich würde einen einflussreichen Militärbefehlshaber abgeben.	Pow
Ich würde in einer militärischen Führungsposition eine schlechte Figur abgeben.	Pow
Ich würde lieber eine leichtere Arbeit ausführen als eine, bei der Schwierigkeiten zu überwinden sind.	Ach
Im Rahmen meines Berufes habe ich für meine Fortbildung selten zusätzliche Arbeit aufgewendet.	Ach
Man verschwendet seine Zeit damit, es anderen Leuten recht machen zu wollen.	Aff
Manchmal sagt man mir nach, ich vernachlässige andere wichtige Seiten meines Lebens, weil ich so viel arbeite.	Ach
Meine Beziehungen zu anderen Leuten sind überwiegend geschäftlicher und nicht freundschaftlicher Art.	Aff
Oft wäre ich lieber allein als mit einer Gruppe von Freunden zusammen.	Aff
Sicherlich denken die Leute, dass ich nicht viel Energie habe.	Ach
Wenn ich einen Bekannten von ferne sehe, bemühe ich mich nicht sehr, ihn zu begrüßen.	Aff
Wenn ich mich ein wenig anstrenge, kann ich die meisten Leute um den Finger wickeln.	Pow
Wenn ich mit einem anderen zusammen bin, bin ich es, der die meisten Entscheidungen trifft.	Pow
Wenn niemand zu sehen bekommt, was ich mache, tue ich oft nicht mein Bestes.	Ach

Note. Ach = self-attributed (explicit) need for achievement, Aff = self-attributed (explicit) need for affiliation, Pow = self-attributed (explicit) need for power.

Appendix C – Items of the Relational Models Scales

Table III

Relational Models Vignettes Taken From the Relationship Profile Scales (RPS; Haslam et al., 2002). The Vignettes Were Used for the Relational Priming in Studies 6 and 7.

Relational Model	Vignette
Communal Sharing (CS)	You and this person take a "one for all and all for one" approach toward one another. You each feel that "what's mine is yours" and that what happens to the other person is nearly as important as what happens to you. If the other person needed your help, you would cancel your plans and help them out, and they would do the same for you. Similarly, you would give the person the shirt off your back if they really needed it and they would do the same for you. You willingly share food with this person and, if necessary, you would share a soda using the same straw or share a meal using the same fork.
Authority Ranking, superior position (AR$^+$)	You take the lead and tend to "call the shots" and you take the initiative in this relationship and the other tends to follow along. You make most of the decisions and the other one goes along with your choices. You usually get your way and take responsibility for things. The other person is a follower in this relationship and backs you up, knowing that they can depend on you to lead and protect them when it is needed.
Authority Ranking, inferior position (AR$^-$)	The other person tends to "call the shots" and takes the initiative in this relationship and you tend to follow along. The other person makes most of the decisions and you go along with that person's choices. The other person usually gets their way and takes responsibility for things. You are a follower in this relationship and you back the other person up, knowing that you can depend on the one in charge to lead and protect you when you need it.
Equality Matching (EM)	Your relationship is structured on a 50 : 50 basis. You feel like you and the other person are pretty equal in the things you do for each other. If they do something for you, you will try to do the same thing in return for them sometime. If the two of you were dividing something, you'd probably split it down the middle into even shares. You often take turns doing things. As a way of keeping things balanced, you more or less keep track of favours and obligations between you. And you get irritated when you feel that the other person is taking more than they are giving. What you each want is equal treatment and equal shares.
Market Pricing (MP)	You interact with this person in a purely rational, business-like way, because you "get your money's worth." Each of you feels entitled to a fair rate of return, in return for what you put into the interaction. How much you get out of your dealings with this person depends on precisely how much you put in. So you each keep track of the ratio of your "costs" (in terms of money, time, effort, or aggravation) in relation to your "benefits." The interaction basically comes down to practical matters like these. When it comes down to it, you each choose to participate when it is profitable in terms of what you have to invest and the rewards that you get out of it.

Table IV

Adapted German Version of the Relationship Profile Scales (Biber et al., 2008) as Used in Studies 2, 3, and 5: Relational Model Descriptions.

Relational Model	Vignette
Communal Sharing (CS)	Für diese Beziehung gilt das Motto "Was Mein ist, ist auch Dein". Das Wohl des anderen ist genauso wichtig wie das eigene Wohl und wenn der andere in Schwierigkeiten wäre, würde jeder die eigenen Pläne umwerfen und sein Möglichstes tun, um zu helfen. Die andere Person würde für mich ihr „letztes Hemd" opfern und ich auch für sie.
Authority Ranking, superior position (AR$^+$)	In dieser Beziehung bin ich "der Chef". Ich darf mehr entscheiden und bestimmen. Ich bin einflussreicher und unterstütze und fördere zugleich den anderen. Ich bin auch derjenige, der mehr Verantwortung trägt.
Authority Ranking, inferior position (AR$^-$)	In dieser Beziehung ist der andere "der Chef". Er darf mehr entscheiden und bestimmen. Er ist einflussreicher und unterstützt und fördert mich zugleich. Er ist auch derjenige, der mehr Verantwortung trägt.
Equality Matching (EM)	Wenn wir in dieser Beziehung etwas gemeinsam unternehmen, zahlen wir entweder abwechselnd oder jeder die Hälfte. Wenn es etwas zu verteilen gibt, so bekommt jeder möglichst den exakt gleichen Anteil. In dem, was wir füreinander tun, versuchen wir somit immer, ein möglichst ausgewogenes Verhältnis beizubehalten. Wenn die andere Person mir einen Gefallen erweist, fühle ich mich entsprechend verpflichtet, ihr einen gleichwertigen Gefallen zu erweisen.
Market Pricing (MP)	In diese Beziehung investiere ich nur so lange, wie es sich für mich lohnt. Jeder Beitrag wird nach seinem Wert eingeschätzt. Davon, dass wir uns zusammengetan haben, erwartet jeder von uns einen Gewinn, und so achten wir auch beide darauf, wie viel von diesem "Gewinn" wir im Verhältnis zum geleisteten Aufwand oder der investierten Zeit erhalten.

Table V

Adapted German Version of the Relationship Profile Scales (Biber et al., 2008) as Used in Studies 2, 3, and 5: Items.

RPS items
Ich habe sehr viele Beziehungen dieser Art.
Es ist sehr wichtig für mich, diese Art von Beziehung zu haben.
Solche Beziehungen sind sehr schwierig und stressvoll für mich.
Ich bin mit dieser Art von Beziehung sehr zufrieden.
Mein Verlangen, diese Art von Beziehung zu haben, ist größer als das von anderen Menschen.
Es würde mich überhaupt nicht stören, wenn ich keine Beziehungen dieser Art hätte.
Ich bemühe mich aktiv, diese Art von Beziehung einzugehen.
Ich finde diese Art von Beziehung angenehm.
Ich wünsche, ich hätte mehr solche Beziehungen.

Note: Items in italics represents items used in the RPS short scale (Study 3)

Table VI

Items of the Ideal Relational Models Scale (IRM; Vodosek, 2009).

Relational Model	Items
Communal Sharing (CS)	The group makes decisions together by consensus.
	Members of the group tend to have very similar attitudes and values.
	'One for all and all for one' is true of the members in the group.
	Group members have many things in common that make them essentially the same.
	If one of the group members needs something, other group members give it without expecting anything in return.
Authority Ranking, (AR)	One of the group members calls the shots in the group.
	One of the group members directs the work of the group, while the other group members pretty much do what they are told to do.
	One of the group members tends to lead.
	One of the group members makes the decisions and the other group members generally go along.
Equality Matching (EM)	Group members typically divide things up into shares that are the same size.
	Group members often take turns doing things.
	When group members work together, they usually split the work evenly.
	Group members make sure that the group's workload is shared equally.
	The group makes decisions by a simple majority vote.
Market Pricing (MP)	Group members calculate what their payoffs are in this group and act accordingly.
	Group members divide things up according to how much they have paid or contributed.
	Group members make decisions according to the ratio of the benefits they get and the costs to them.
	Group members choose to participate in the group when it is worth their while to do so.

Note: Participants were asked to indicate how often any of these items should be true in an ideal group on Likert scales ranging from 1 ("*None of the time*") to 5 ("*Always*"). Before responding the items, participants read the following instruction: *We all have some idea of what an ideal group should be like in terms of the relationships among group members. Please refer to the statements below and indicate in the left column how often—in your personal opinion—each statement should be true in an ideal group. Using the response scale below, please click on the numbers that correspond to your responses.*

Appendix D – Screenshot: Priming Experiments

The screenshot below is taken from Study 6. It depicts the relational priming in the Communal Sharing condition during the waiting period. The relational models vignettes were presented along with a picture of one of four persons. Both conditions and persons were randomly assigned to the participants. I do not own the rights to these pictures, but information on them is provided by Rösch (2012).

You and this person take a "one for all and all for one" approach toward one another. You each feel that "what's mine is yours" and that what happens to the other person is nearly as important as what happens to you. If the other person needed your help, you would cancel your plans and help them out, and they would do the same for you. Similarly, you would give the person the shirt off your back if they really needed it and they would do the same for you. You willingly share food with this person and, if necessary, you would share a soda using the same straw or share a meal using the same fork.

Appendix E – Results of HMRAs in Conditions AR⁺ and AR⁻

Table VII

Further Analysis of Study 2: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁺ on AR⁻, CS, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

Predictor	Preference for AR+	
	β Step 1	β Step 2
AR⁻	.04	.11
CS	.10	.15
EM	-.14	-.15
MP	.11	.29**
san Ach		-.08
san Aff		-.05
san Pow		**.51**
R^2	.13**	.36**
ΔR^2	.13**	**.23**

Note. $N = 109$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.3. $**p < .01$.

Table VIII

Further Analysis of Study 2: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁻ on AR⁺, CS, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

Predictor	Preference for AR-	
	β Step 1	β Step 2
AR⁺	.04	.17
CS	.01	-.04
EM	.08	.10
MP	.10	.09
san Ach		.07
san Aff		.11
san Pow		**-.26**
R^2	.02	.07
ΔR^2	.02	.05

Note. $N = 109$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.4. $*p < .05$.

Table IX

Further Analysis of Study 3: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁺ on AR⁻, CS, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

Predictor	Preference for AR+	
	β Step 1	*β* Step 2
AR⁻	.28**	.35**
CS	-.09	-.08
EM	-.04	-.04
MP	.08	.07
san Ach		-.01
san Aff		-.00
san Pow		**.55**
R^2	.16**	.16**
ΔR^2	.41**	**.25**

Note. $N = 140$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.3. **$p < .01$.

Table X

Further Analysis of Study 3: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁻ on AR⁺, CS, EM, and MP (Step 1) and on the Explicit Motives for Achievement, Affiliation, and Power (Step 2).

Predictor	Preference for AR-	
	β Step 1	*β* Step 2
AR⁺	.29**	.45**
CS	.16	.20*
EM	-.09	-.05
MP	.12	.22**
san Ach		.15
san Aff		-.15
san Pow		**-.44**
R^2	.14**	.25**
ΔR^2	.14**	**.11**

Note. $N = 140$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.4. *$p < .05$; **$p < .01$.

Table XI

Further analysis of Study 5: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁺ on AR⁻, CS, EM, MP, and Self-attributed Fear, (step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (step 2).

Predictor	Preference for AR+	
	β Step 1	β Step 2
AR⁻	.13	.24**
CS	-.04	-.02
EM	.05	.07
MP	.24*	.12
sa Fear	-.12	-.07
san Ach		.07
san Aff		-.15
san Int		-.28**
san Pow		**.53**
R^2	.11*	.40**
ΔR^2	.11*	**.29**

Note. $N = 108$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.3. **$p < .01$.

Table XII

Further analysis of Study 5: Standardized Coefficients of Predictors and Explained Variance in a Hierarchical Multiple Regression Analysis of AR⁻ on AR⁺, CS, EM, MP, and Self-attributed Fear, (step 1) and on the Explicit Motives for Achievement, Affiliation, Intimacy, and Power (step 2).

Predictor	Preference for AR-	
	β Step 1	β Step 2
AR⁺	.15	.33**
CS	-.03	.02
EM	-.01	-.01
MP	.08	.07
sa Fear	.00	.02
san Ach		-.02
san Aff		.11
san Int		-.35**
san Pow		**-.31***
R^2	.04	.15*
ΔR^2	.04	**.12***

Note. $N = 108$. AR⁺ = authority ranking superior position, AR⁻ = authority ranking inferior position, CS = communal sharing, EM = equality matching, MP = market pricing. Bold numbers represent results corresponding to Hypothesis 5.4. *$p < .05$; **$p < .01$.

Erklärung

Ich erkläre an Eides statt, dass ich die der **Fakultät für Wirtschaftswissenschaften** der Technischen Universität München zur Promotionsprüfung vorgelegte Arbeit mit dem Titel

Social Motives and Relational Models
Empirical Studies on Drivers and Structures of Social Interaction

am **Lehrstuhl für Psychologie** unter der Anleitung und Betreuung durch **Prof. Dr. Hugo M. Kehr** ohne sonstige Hilfe erstellt und bei der Abfassung nur die gemäß § 6 Abs. 5 angegebenen Hilfsmittel benutzt habe.

Ich habe keine Organisation eingeschalten, die gegen Entgelt Betreuerinnen und Betreuer für die Anfertigung von Dissertationen sucht, oder die mir obliegende Pflichten hinsichtlich der Prüfungsleistungen für mich ganz oder teilweise erledigt.

Ich habe die Dissertation in keinem anderen Prüfungsverfahren als Prüfungsleistung vorgelegt.

Ich habe den angestrebten Doktorgrad noch nicht erworben und bin nicht in einem früheren Promotionsverfahren für den angestrebten Doktorgrad endgültig gescheitert.

Die Promotionsordnung der Technischen Universität München ist mir bekannt.

München, den 24.07.2013

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(Matthias Strasser)