

# A Brief Mindfulness Exercise Promotes the Correspondence Between the Implicit Affiliation Motive and Goal Setting

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## Abstract

People often choose to pursue goals that are dissociated from their implicit motives, which jeopardizes their motivation and well-being. We hypothesized that mindfulness may attenuate this dissociation to the degree that it increases sensitivity to internal cues that signal one's implicit preferences. We tested this hypothesis with a longitudinal repeated measures experiment. In Session 1, participants' implicit affiliation motive was assessed. In Session 2, half of the participants completed a mindfulness exercise while the other half completed a control task before indicating their motivation toward pursuing affiliation and nonaffiliation goals. In Session 3, this procedure was repeated with reversed assignment to conditions. The results confirmed our hypothesis that, irrespective of the order of the conditions, the implicit affiliation motive predicted a preference to pursue affiliation goals immediately after the mindfulness exercise, but not after the control task. We discuss implications of these findings for satisfaction and well-being.

## Keywords

mindfulness, implicit motives, explicit motives, need for affiliation, goals

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Throughout their lives, people make many choices regarding their career, education, family, finances, and lifestyle. To make satisfactory decisions, it is important that people choose options that fit their motives and capabilities. Unfortunately, people do not always make choices that bring them satisfaction. Every year, many students drop out of college because of being dissatisfied with their chosen area of study or the type of education (Daley, 2010). Many employees experience disengagement at their jobs and feel they chose the wrong career (Gallup, 2013). The high divorce rates in the United States and other Western countries show that people sometimes come to regret their choice of a partner in marriage (Eurostat, 2015; U.S. Census Bureau, 2011). Although various factors may explain why people come to regret choices in these domains, one significant factor may be that people are not fully aware of what truly motivates them and thus, what would really make them happy. In the current article, we explore the potential of mindfulness to increase this awareness, and thus to enhance people's capacity to make choices that fit their true motives.

A rich literature on human motivation shows that while people can report on some aspects of their motivation, there are also motives of which people are typically unaware, so-called *implicit motives*. Implicit motives are enduring motivational preferences that are inaccessible to conscious awareness and introspection (McClelland, Koestner, &

Weinberger, 1989; Schultheiss, 2008). Importantly, however, these motives appear to have a crucial impact on our happiness and well-being in daily life. Research on implicit motives typically distinguishes between three fundamental motives: the affiliation motive, which refers to the motivation to establish, maintain, or restore harmonious social relations with others; the achievement motive, which refers to the motivation to master challenging tasks and surpass standards of excellence; and the power motive, which refers to the motivation to have behavioral or emotional impact on others. As satisfaction of the affiliation motive has been regarded as particularly fundamental to well-being (e.g., Baumeister & Leary, 1995; Schüler, Job, Fröhlich, & Brandstätter, 2008), the current research focuses on the affiliation motive, and explores whether a brief mindfulness exercise leads people to align their choices with their implicit affiliation motive.

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The implicit affiliation motive has been found to predict many aspects of human functioning, from micro-level affective and reward-related brain processes (e.g., activation in the amygdala and deactivation in the insula, caudate, nucleus accumbens, and orbitofrontal cortex in response to angry facial expressions, Hall, Stanton, & Schultheiss, 2010) to macro-level outcomes such as management and leadership skills (e.g., McClelland & Boyatzis, 1982; Winter, 1991), and the likelihood of being involved in volunteer work, marriage, and divorce (Winter, John, Stewart, Klohnen, & Duncan, 1998). People with a strong implicit affiliation motive smile and laugh more, make more eye contact, and more often refer to “we” when they interact with others than people with a weak implicit affiliation motive (McAdams, Jackson, & Kirshnit, 1984; McAdams & Powers, 1981). They tend to perform well at tasks that bring them social approval or that require cooperation with other people (Atkinson & O'Connor, 1966; French, 1958). However, their performance deteriorates on competitive tasks (Koestner & McClelland, 1992). Earlier evidence suggested that people with a strong implicit affiliation motive rarely reach management positions in strongly hierarchical organizations although they tend to do well as managers in companies with less pronounced hierarchies where they need to work through personal relationships (e.g., Litwin & Siebrecht, 1967). However, more recent evidence in a diverse sample of managers suggests that a strong implicit affiliation motive may now be an essential ingredient for successful management, possibly through changing organizational cultures (Steinmann, Dörr, Schultheiss, & Maier, 2015).

Importantly, the alignment of more specific personal goals with implicit motives is a strong predictor of motivation and well-being. Specific goals that people pursue in their daily lives, such as being a good partner, staying healthy, or getting a promotion, differ in the degree to which they are relevant to people's implicit motives, and thus in the degree to which progress on them is relevant to one's implicit motives or not. When specific goals that people pursue in their daily lives are in line with their implicit motives, people feel happier and have fewer depressive symptoms when their goal pursuits are successful, but they also experience more negative mood states and depressive symptoms when they face obstacles or when their goal pursuits fail. In contrast, when goals are less relevant to one's implicit motives, goal progress is less predictive of mood states and depressive symptoms. Research has shown, for example, that success and failure in the pursuit of specific affiliation goals, such as finding a romantic partner and spending time with friends, affect individuals' well-being only to the extent that these goals are supported by a strong implicit affiliation motive (Schultheiss, Jones, Davis, & Kley, 2008, see also Brunstein, Schultheiss, & Grässmann, 1998). In sum, the relevance of people's specific goals to their implicit motives plays an important role in motivation and well-being.

Given the importance of the alignment of one's daily life goals and one's implicit motives, people should take their

implicit motives into account when setting goals for themselves. This is difficult, however, as implicit motives are typically inaccessible to conscious awareness and introspection. Implicit motives develop early in life, possibly even before the development of language (Schultheiss, 2008). They tend to be poorly integrated into higher cognition, and cannot be accessed consciously by introspection to inform deliberate decisions (McClelland et al., 1989; Weinberger & McClelland, 1990). Indeed, research typically finds that correlations between implicit motive strength and indicators of goal setting (e.g., the number of goals a person has chosen to pursue in a given motivational domain, and commitment to those goals) are small or even absent (Brunstein et al., 1998; King, 1995; Schultheiss, Jones, et al., 2008; but see Emmons & McAdams, 1991). A recent study with a relatively large sample size ( $n = 309$ ) found that implicit motives had no positive association at all with commitments to personal goals within a given motivational domain (Rawolle, Schultheiss, & Schultheiss, 2013).

When making decisions about which goals to pursue in daily life, people often rely on self-reflection and introspection (e.g., “How well does this goal fit me as a person?”). This analysis likely guides attention toward explicit instead of implicit motives because explicit motives are consciously accessible and more strongly linked to the perceptions people have of themselves than implicit motives are. Explicit motives are therefore generally good predictors of goal setting (Hofer, Busch, Bond, Li, & Law, 2010; McClelland et al., 1989; Schultheiss, 2008). When goal setting is aligned with explicit motives, however, this does not ensure that it is also in line with implicit motives because there is a low correspondence between implicit and explicit motives (Schultheiss & Brunstein, 2001; Spangler, 1992; for a review see Köllner & Schultheiss, 2014).

According to most theorists, implicit and explicit motives are dissociated because they are acquired in different ways at different stages in a person's developmental history (e.g., McClelland et al., 1989; Thrash, Elliot, & Schultheiss, 2007). Implicit motives develop early in life, and are based on direct experiences of affect in response to natural incentives (e.g., the presence or absence of the innate pleasure of having social and physical contact). Explicit motives develop later, and are built around explicit norms that are acquired when a child develops an idea about the types of behaviors that the social environment finds important and valuable (e.g., a cultural norm to be warm and caring). Although research on the development of the affiliation motive is scarce, the findings so far suggest that the development of the implicit affiliation motive depends on the responsiveness of parents to their crying infant (McClelland & Pilon, 1983). In contrast, the development of the explicit affiliation depends on the extent to which parents explicitly teach their child to be nice to other people (McClelland & Pilon, 1983).

One important implication of the distinction between implicit and explicit motives, as mentioned before, is that the pursuit and satisfaction of these motives has different

consequences for well-being. Motive research typically takes a bottom-up perspective on well-being, which means that well-being is seen as an accumulation of frequent affectively pleasurable experiences and positive moods in daily life (e.g., Brunstein et al., 1998; Schultheiss, Jones, et al., 2008). As the pursuit and accomplishment of implicit motives brings immediate affective pleasure, the degree to which people strive for goals that are relevant to their implicit motives is a good predictor of their daily affective experience and well-being. The pursuit and accomplishment of explicit motives, however, is associated with an effortful striving for goals representing what a person considers, on a more cognitive level, to be meaningful and valuable. Although the pursuit of goals that are relevant to one's explicit motives may provide a sense of agency and personal meaning, it is less directly beneficial to the experience of affective pleasure and positive mood and therefore less predictive of well-being in daily life (Brunstein et al., 1998; Schultheiss, Jones, et al., 2008). Hence, the tendency to align one's goal setting and pursuits with explicit motives instead of with implicit motives may be problematic for motivation and well-being.

Although the correspondence between implicit motives and explicit motives is typically small to nonexistent, a number of recent studies have investigated personality variables that increase the correspondence between implicit and explicit motives. A stable and well-developed sense of self-identity (Hofer, Busch, Chasiotis, & Kiessling, 2006), high self-determination (Thrash & Elliot, 2002), low self-monitoring, and high preference for consistency (Thrash et al., 2007) were all found to be related to more congruence between implicit and explicit motives, although some of these findings have yet to be replicated. In addition, higher private body consciousness, which refers to the sensitivity to internal bodily states, is related to more congruence between implicit and explicit motives (Thrash et al., 2007). The reason why private body consciousness increases implicit-explicit motive congruence is perhaps that implicit motives modulate affective responses to motive-related stimuli that manifest themselves in the body (see also Schultheiss, Wirth, et al., 2008). Implicit motives may therefore be accessible, indirectly, by closely attending to one's bodily sensations during goal setting and goal pursuit (Thrash et al., 2007).

These moderators of the effect of implicit motives on explicit motives and choices suggest that, in some cases, it is possible to access one's implicit motives during goal setting and align one's decisions with them. However, the moderators that have been identified so far reflect relatively enduring personality traits. As a result, they are not directly informative with regard to the strategies that people can actively adopt to align their goals with their implicit motives. A recent set of studies, however, made important progress by showing that the strategy of goal imagery—the process of creating a vivid mental representation of the pursuit and attainment of a goal—can promote congruence between

implicit motives and explicitly chosen goals. Job and Brandstätter (2009) report three studies in which participants were asked to select goals in a hypothetical job or study scenario. The results showed that asking people to vividly imagine how striving for each presented goal would make them feel led them to select goals that fitted their implicit motives. More precisely, after goal imagery the number of goals chosen from a particular motive domain (e.g., affiliation goals) and the level of self-reported commitment to these goals was associated with the strength of the corresponding implicit motive (i.e., the implicit affiliation motive). In contrast, participants in the control group, who did not engage in imagery but instead were asked to think about how well the goals fitted them as a person, did not select goals that fitted their implicit motives. Schultheiss and Brunstein (1999, 2002) obtained similar results. We propose that in these studies, goal imagery allowed participants to experience their affective and bodily responses to imagined events and thereby provided important insight into the affect associated with implicit motives. Access to these cues then allowed them to make motive-relevant goal choices.

In the current research, we suggest that a brief mindfulness exercise might have similar effects on the congruence between the implicit affiliation motive and goals. Mindfulness can be defined as an open, nonjudgmental attention to one's present-moment experiences, including one's behaviors, bodily sensations, thoughts, and feelings (Bishop et al., 2004). One of the key components in mindfulness training is the body scan exercise, which trains participants to guide their attention to the different parts of their body and to observe and accept the sensations they experience in an open and nonjudgmental way. Importantly, mindful attention to one's bodily experiences during the body scan has been found to increase peoples' *interoceptive awareness* (e.g., Bornemann, Herbert, Mehling, & Singer, 2015; Farb, Segal, & Anderson, 2013; Sze, Gyurak, Yuan, & Levenson, 2010, see also Strick, Van Noorden, Ritskes, De Ruiter, & Dijksterhuis, 2012). Interoceptive awareness is the ability to consciously perceive internal bodily sensations, and is conceptually similar to the concept of private body consciousness, which has been found to increase implicit-explicit motive congruence (Thrash et al., 2007).

In the current study, we suggest that a mindfulness-based body scan exercise may increase the congruence between the implicit and explicit affiliation motive, and therefore may promote goal setting that is congruent with the implicit affiliation motive. We expect that directing attention to one's bodily responses, and processing them in an open and accepting manner, increases participants' awareness and acceptance of motive-specific affective sensations. Becoming aware, for example, of the subtle affective signals that indicate how enjoyable the pursuit of affiliation goals would be, should in turn promote the adoption of affiliation goals. In other words, increasing interoceptive awareness and therefore becoming more aware of one's affective responses to

motive-relevant information should increase the degree to which one can let these responses guide one's choices. Therefore, we predict that a mindfulness-based body scan exercise will increase goal setting that is congruent with the implicit affiliation motive.

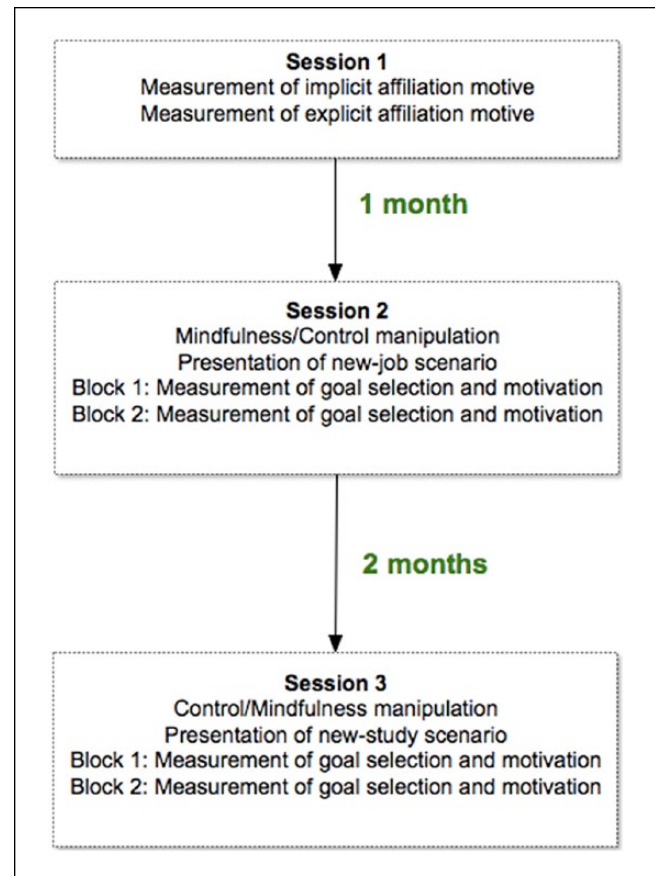
We tested this hypothesis in an experiment in which participants made a number of potentially motive-relevant choices once after a mindfulness-based body scan, and once after completing a control task (i.e., reading magazines, see Strick et al., 2012; Zeidan, Gordon, Merchant, & Goolkasian, 2010). In addition, we measured each participant's implicit and explicit motives, so that we could examine whether implicit motives would predict goal choices better after the mindfulness exercise. Specifically, we hypothesized that the mindfulness exercise would increase the predictive power of the implicit affiliation motive on the selection and motivation toward affiliation goals that one could pursue in a new work environment and a new study environment. Thus, we expected that after the mindfulness exercise, the strength of the implicit affiliation motive would predict the number of chosen affiliation goals and the self-reported motivation to pursue these goals. The mindfulness exercise should not increase the correlation of the explicit affiliation motive with the selection and motivation toward affiliation goals, as explicit motives are less directly associated with affective experiences manifested in the body (McClelland et al., 1989; Schultheiss, 2008; Woike, Mcleod, & Goggin, 2003).

To measure affiliation goal setting, we used the stimulus materials of a previous study (Job & Brandstätter, 2009), which consisted of a list of affiliation-, achievement-, and power-relevant goals. Only the affiliation goals were relevant to our main hypotheses, but we also maintained the power goals in our study. This allowed us to simultaneously examine the impact of mindfulness on the relation between the implicit power motive and power-relevant goal setting. According to our theory and reasoning, we would expect that the mindfulness exercise increases the correspondence between implicit motives and goal setting not only in the affiliation domain but also in the power domain. Therefore, we also report the results relating to the power motive.

## The Present Study

### Overview of the Method

To test the predictive power of implicit and explicit motives on goal setting, we used a longitudinal design comprising three sessions. The experiment was part of a larger study comprising four sessions, but only three sessions were related to the current experiment. The additional session comprised a measurement of chills responses and liking of inspirational quotes, which is irrelevant to the present experiment and will not be discussed further. For clarity of presentation we refer to the three relevant sessions as Session 1, Session 2, and Session 3. Figure 1 gives an overview of the study's setup.



**Figure 1.** Schematic overview of the experiment.

In Session 1, the strength of participants' implicit and explicit affiliation motives was measured. In Session 2, half of the participants completed a mindfulness exercise, while the other half completed a control task. Immediately after, all participants were presented with a hypothetical scenario describing the start of a new job, followed by two blocks of selecting and indicating the degree of motivation toward affiliation and power goals that one could pursue in the new job. In Session 3, those who had completed the mindfulness exercise in Session 2 completed the control task, and vice versa. This was followed by a scenario describing the start of a new study program, after which participants again selected and rated a number of goals that one could pursue during this new study program. Our main hypothesis was that mindfulness would increase the predictive value of the implicit affiliation motive on the selection and motivation toward affiliation goals to be pursued in both scenarios.

### Method

**Participants and design.** The first experiment of Job and Brandstätter (2009) was most relevant for determining our sample size because it tested the correspondence between the implicit affiliation motive and goal selection. In their goal

imagery condition, they found a correlation of  $r = .57$  between the implicit affiliation motive and goal selection. Under the assumption that the effect size in our mindfulness condition would be similar, a sample size of  $n = 19$  in the mindfulness condition would be minimally required to detect the crucial correlation with 80% power (Faul, Erdfelder, Buchner, & Lang, 2009). However, as the effect size of our mindfulness manipulation was uncertain, and longitudinal studies typically suffer from dropout, we set out to recruit a significantly larger sample.

Seventy-eight students of Utrecht University entered the study in Session 1. Seventy-two of these students returned for Session 2, and 60 students returned for Session 3. Hence, we had 60 participants (17 men, 43 women, mean age = 21.82 years) for the analyses (dropout rate = 23%). The study had a 2 (condition: mindfulness vs. control) within-participants design with the implicit affiliation motive and explicit affiliation motive as continuous predictors.<sup>1</sup> The order of the two conditions was counterbalanced across participants. As order did not interact with the main findings, we collapsed the analyses across the two orders.

**Procedure and materials.** The research was advertised as a study on “motivation, opinions, and preferences.” Participants were asked only to enroll if they were planning to finish all sessions, and were informed that a bonus pay would be awarded to those who finished all four sessions (including the session not discussed here). Participants completed the sessions in individual cubicles in the psychology laboratory. All instructions, stimuli, and questions were presented on a computer. As some participants ( $N = 11$ , 18.3%) had indicated at preregistration that they were proficient in English but not in Dutch, we provided all instructions, tasks, and questions in English, and participants were allowed to respond in Dutch or English. Each session lasted about 45 min. Participants received 6 euros or 1 credit hour per completed session. Those who finished all four sessions were awarded a bonus of 10 euros or 1.5 credit hours.

**Session 1.** The implicit affiliation motive and the implicit power motive were assessed with the Picture Story Exercise (PSE), the most common measure of implicit motives (Schultheiss, Yankova, Dirlikov, & Schad, 2009). It relies on linguistic coding of imaginary stories that participants write in response to a standard set of pictures. Researchers in this field recommend the PSE as a measure of implicit motivation (e.g., Latham & Piccolo, 2012; Pennebaker & King, 1999; Ramsay & Pang, 2013; Schultheiss, 2008), and research shows that the PSE is a reliable, valid, and stable measure of implicit motives (Pang, 2010; Schultheiss & Pang, 2007; Schultheiss & Schultheiss, 2014).

In the PSE, participants are shown six pictures of ambiguous social scenarios depicting, respectively, a ship captain and passenger, two trapeze artists, two boxers, two women in a laboratory, a couple by a river, and a couple in a nightclub.

The pictures are presented in random order, for 10 s each. After each picture, participants have 4 min to write an imaginative story related to the picture’s content. The implicit motive score is based on the number of times participants express motive imagery in their stories. We used Winter’s (1994) *Manual for scoring motive imagery in running text* to assess motive imagery, which requires simultaneous assessment of the implicit affiliation, power, and achievement motive. In accordance with Winter’s scoring system, affiliation imagery was scored whenever the participant’s stories expresses positive, warm, intimate feelings (e.g., feeling pleased with someone); sadness about relationship disruption (e.g., being concerned about an argument); friendly shared activities (e.g., talking a walk together); or friendly, nurturing acts (e.g., consoling someone). Power imagery was scored whenever the participant’s stories expressed strong, forceful action that inherently has impact on others (e.g., punching, insulting someone), controlling others (e.g., monitoring someone), influencing or persuading others (e.g., convincing someone), offering unsolicited help or advise (e.g., parents teaching their children), concerns with fame or prestige (e.g., longing to be famous), and actions that elicit a strong emotional response in others (e.g., making someone laugh to tears). The PSE scoring was done by a condition-blind rater (the first author), who had reached a  $> .85$  confidence agreement with expert ratings of implicit motives. A second condition-blind rater with similar expertise independently scored a random quarter of the stories. The interrater reliability, as assessed by the intraclass correlation coefficient (ICC, Pang, 2010), was satisfactory for the affiliation motive,  $ICC = .87$ , and for the power motive,  $ICC = .71$ .

The sum score of affiliation motive imagery codings ( $M = 5.15$ ,  $SD = 2.80$ ) correlated significantly with story length in words ( $M = 605.25$ ;  $SD = 195.58$ ),  $r(60) = .54$ ,  $p < .001$ , as did the sum score of power motive imagery codings ( $M = 4.55$ ,  $SD = 3.48$ ),  $r(60) = .58$ ,  $p < .001$ . In line with recommendations (Schultheiss & Pang, 2007), a regression for word count was therefore conducted whereby the sum scores of affiliation motive imagery codings were converted to standardized residuals. These residuals served as the indicators of the strength of the implicit affiliation motive and the implicit power motive.

The explicit affiliation and power motives were measured using a shortened version of the Personality Research Form (PRF; Jackson, 1967). The shortened PRF comprises three subscales (achievement, power, and affiliation), each consisting of 12 statements, six worded positively and six negatively, to which participants respond on 7-point Likert-type scales. An example of a positively worded affiliation item is “Loyalty to my friends is quite important to me” and an example of a negatively worded affiliation item is “I pay little attention to the interests of people I know.” Participants indicated whether each statement applied to them on a 7-point scale, ranging from 1 (*not true at all*) to 7 (*definitely true*). We recoded the negatively worded affiliation items,

and calculated standardized means (Cronbach's  $\alpha = .68$ ). These served as the explicit affiliation motive scores. An example of a positively worded power item is "I try to control others rather than permit them to control me" and an example of a negatively worded power item is "I have little interest in leading others." We recoded the negatively worded power items, and calculated standardized means (Cronbach's  $\alpha = .85$ ). These served as the explicit power motive scores.

Next, participants completed a 12-item chills questionnaire (Maruskin, Thrash, & Elliot, 2012), which was unrelated to the present study and will not be discussed further. Finally, participants answered various exit questions about their subjective experience and inferences about the study. An overview of the means and standard deviations of the responses in each condition can be found in the online supplemental material.

**Session 2.** Participants were randomly assigned to the mindfulness or control manipulation ( $N_{\text{mindfulness}} = 26$ ,  $N_{\text{control}} = 34$ , respectively). The mindfulness manipulation had the typical structure of a body scan (Cropley, Ussher, & Charitou, 2007). It was developed by Marchiori and Papies (2014) in English and Dutch based on typical body scan instructions, but without mentioning mindfulness or meditation to reduce the possibility for demand and expectancy effects. The instruction was read by a female voice and recorded digitally. The exercise guides participants' attention to the different parts of their body and asks them to simply observe all sensations in an open and nonjudgmental way. The instructions are slowly paced to give participants ample time to move their attention to the various body parts and observe their body sensations. Participants could choose between the Dutch and the English version. The body scan lasted between 12 and 14 min (the English version being somewhat shorter than the Dutch version).

In the control condition, participants were asked to read magazines, and an ample number of magazines were provided to them. This is a common control condition in lab research on meditation (Strick et al., 2012; Zeidan et al., 2010). This was chosen as a control condition because, similar to the mindfulness exercise, it is pleasant and relaxing. At the same time, it keeps participants from turning their attention to their bodily experiences. Participants wore headphones and were asked to stop reading by a digitally recorded female voice (MS) after 13 min.

After the manipulation, participants were asked to imagine being in the following new-job scenario taken from Job and Brandstätter (2009):

Imagine you have finished your education. You have spent a short time searching for employment and found a job as a project leader in a company. The job description and your first impression of the work and the company as a whole correspond with what you desire. You will start your job in a few days. You

are now thinking about the goals you want to strive for at your new workplace . . . .

Then, participants were presented with the first list of 10 goals (Block 1). The full list of goals can be found in the online supplemental material. There were five affiliation-relevant goals (e.g., "I would like to work in a team with other colleagues.") and five power-relevant goals (e.g., "I want to act self-confident among my colleagues."). All goals were presented on the same page, in a fixed order alternating affiliation and power goals. Participants selected goals they would wish to strive for in the new-job scenario by checking "Yes" or "No." Importantly, the goals appeared on screen in a stepwise manner: The first goal appeared, 15 s later the second goal appeared, 15 s later the third goal appeared, and so forth, until all goals were on screen. This stepwise presentation provided ample time to imagine what it would feel like to pursue the goal (cf. Job & Brandstätter, 2009). Participants could select the goals as soon as they appeared on screen but were allowed to take as much time as they needed. The affiliation and power goals were adapted versions of the affiliation and power goals, respectively, used by Job and Brandstätter (2009). Participants could select as many goals as they wanted. The number of affiliation goals chosen served as one of our main dependent variables.

Next, participants were presented with the same 10 goals, one by one, in random order, and were asked to indicate the degree to which they would be motivated to pursue this goal in the job scenario on a 7-point scale, ranging from 1 (*not true at all*) to 7 (*definitely true*). These ratings of participants' motivation to pursue the goals served as our other main dependent variable.

Then, participants proceeded to Block 2, which was similar to Block 1. Block 2 was included to explore the possibility that explicit goal imagery instructions are required to create motive congruence, as in Job and Brandstätter (2009). The procedure was the same as in the first block, except for using a new set of affiliation and power goals and adding an imagery instruction adapted from Job and Brandstätter. The imagery instruction asked participants to imagine as lively as possible what striving for each goal would be like for them, focusing especially on their feelings. Specifically, they were asked to try to picture themselves striving for each goal, what the specific situation would be like, and how good they would feel when striving for it before deciding on a goal and rating their motivation to pursue it.

Next, participants completed three questions assessing their private body consciousness (Miller, Murphy, & Buss, 1981). These questions were included as a manipulation check of the body scan exercise, that is, to measure whether it temporarily increased participants' interoceptive awareness. These questions were roughly based on the Private Body Consciousness Questionnaire (see Miller et al., 1981), and adapted for the present purpose to measure state rather than trait awareness. The items were as follows: "At this

**Table 1.** Correlations Between the Major Study Variables in Block 1.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Implicit affiliation motive	—											
2. Explicit affiliation motive	.156	—										
3. Implicit power motive	-.272*	-.051	—									
4. Explicit power motive	-.086	.059	.074	—								
5. Affiliation goal selection (mindfulness)	.331*	.165	-.202	-.214	—							
6. Power goal selection (mindfulness)	-.136	.240	.124	.203	-.269*	—						
7. Affiliation goal rating (mindfulness)	.344**	.347**	-.121	-.084	.777**	-.132	—					
8. Power goal rating (mindfulness)	-.119	.142	.171	.371**	-.408**	.810**	-.164	—				
9. Affiliation goal selection (control)	.136	.216	-.218	-.270*	.650**	-.072	.555**	-.247	—			
10. Power goal selection (control)	-.007	-.042	-.032	.035	-.115	.402**	-.063	.449**	-.035	—		
11. Affiliation goal rating (control)	.186	.517**	-.143	-.120	.497**	-.027	.591**	-.206	.655**	-.178	—	
12. Power goal rating (control)	.000	.141	.001	.262*	-.138	.459**	-.012	.604**	-.131	.715**	-.105	—

\* $p < .05$ . \*\* $p < .01$ .

moment, I feel very aware of my own body.” “At this moment, I am sensitive to internal bodily sensations.” “Right now, I can easily feel my heart beating.” Participants were asked to indicate to what extent the statements applied to them on a scale from 1 (*not at all*) to 7 (*very much*). The scale was moderately reliable in the mindfulness condition ( $\alpha = .65$ ) and the control condition ( $\alpha = .63$ ).

Finally, participants answered various exit questions about their subjective experience and inferences about the study and were thanked for their participation. An overview of the means and standard deviations of the responses to the exit questions in each condition can be found in the online supplemental material.

**Session 3.** Participants who completed the mindfulness exercise in Session 2 were now assigned to the control condition, and vice versa. The procedure was the same as in Session 2, except that a new scenario describing a study situation, again taken from Job and Brandstätter (2009), and a new set of affiliation-relevant and power-relevant goals was used. The study scenario read,

Imagine you have finished your education. You have spent a short time orienting on the job market and found a career path that you want to pursue. As this career path requires you to get additional education and training, you decide to pursue a second study. The first semester starts in a few days. You are now thinking about the goals you want to strive for at your new study . . .

An example of an affiliation-relevant goal was “I want the atmosphere among the students to be sociable and warm”

and an example of a power-relevant goal was “I would like to become recognized as a talented student” (see the online supplemental material for the complete set of goals).

## Results

**Manipulation check.** As intended, a paired  $t$  test showed that private body consciousness was higher in the mindfulness condition ( $M = 4.62$ ,  $SD = 1.00$ ) than in the control condition, ( $M = 4.08$ ,  $SD = 1.15$ ),  $t(59) = 3.76$ ,  $p < .001$ . This result confirmed that the mindfulness exercise increased participants’ (self-reported) interoceptive awareness.

**Correlations between main variables.** Table 1 gives an overview of the correlations between the major study variables. In line with typical findings in motive research (for a review see Köllner & Schultheiss, 2014), there was no significant relation between the implicit affiliation motive and the explicit affiliation motive,  $r(60) = .16$ ,  $p = .23$ , or between the implicit power motive and the explicit power motive,  $r(60) = .07$ ,  $p = .58$ .

**Analytical approach.** As order (mindfulness at Session 2 vs. at Session 3) was not a variable of interest in the first place, and did not interact with any of the main results, we collapsed all analyses across the two order conditions. Hence, for each participant we calculated a goal selection and a goal motivation score based on her response to the mindfulness condition, and a goal selection and goal motivation score based on her response to the control condition, regardless of whether they were at Session 2 or 3.

**Table 2.** Regression Results Indicating the Predictive Power of the Implicit and Explicit Affiliation Motive on the Selection and Motivation Toward Affiliation-Relevant and Power-Relevant Goals in the Mindfulness and Control Condition.

	Goal selection						Goal rating					
	Affiliation goals			Power goals			Affiliation goals			Power goals		
	B	SE	t	B	SE	t	B	SE	t	B	SE	t
Implicit affiliation motive												
Block 1												
Control condition	.167	.159	1.05	-.008	.155	-0.51	.170	.118	1.44	.000	.122	0.00
Mindfulness condition	<b>.434</b>	<b>.162</b>	<b>2.68*</b>	-.152	.146	-1.04	<b>.324</b>	<b>.116</b>	<b>2.79**</b>	-.107	.117	-0.92
Block 2												
Control condition	.170	.151	1.13	-.157	.152	-1.04	.112	.133	0.84	-.128	.114	-1.13
Mindfulness condition	-.047	.146	-0.32	-.202	.154	-1.31	-.023	.110	-0.21	-.190	.121	-1.57
Explicit affiliation motive												
Block 1												
Control condition	.262	.156	1.68	-.050	.153	-0.32	<b>.471</b>	<b>.102</b>	<b>4.60**</b>	.130	.120	1.08
Mindfulness condition	.215	.168	1.28	.266	.142	1.88	<b>.324</b>	<b>.115</b>	<b>2.81**</b>	.125	.115	1.09
Block 2												
Control condition	<b>.323</b>	<b>.145</b>	<b>2.23*</b>	.105	.151	0.70	<b>.526</b>	<b>.114</b>	<b>4.62**</b>	.135	.112	1.20
Mindfulness condition	.147	.143	1.02	-.143	.154	-0.93	.150	.107	1.40	.075	.122	0.61

\* $p < .05$ . \*\* $p < .01$ .

We conducted separate regression analyses to test main effects of the implicit and explicit motives on goal selection and goal motivation in the two conditions. Where appropriate, we tested for significant differences in slopes between the conditions (mindfulness vs. control) using a mixed-model GLM with goal selection (or motivation rating) as dependent variable, motive score as continuous predictor, and condition as within-subjects factor.

Below, we first report the predictive value of the implicit affiliation motive in the mindfulness and control condition, starting with Block 1, then turning to Block 2. Next, we report the predictive value of the explicit affiliation motive in both conditions, starting with Block 1, then turning to Block 2. Finally, we report the results regarding the power motive.

The regression results regarding the affiliation motive are summarized in Table 2 and regression results regarding the power motive are summarized in Table 3.

**Predictive value of the implicit affiliation motive in Block 1.** In line with our hypothesis, and as reported in Table 2, the implicit affiliation motive predicted the selection of affiliation goals in the mindfulness condition,  $B = .434$ , 95% CI = [.109, .759], while it did not predict the selection of affiliation goals in the control condition,  $B = .167$ , 95% CI = [-.152, .485]. Thus, participants chose to pursue more affiliation goals if their implicit affiliation motive was stronger, but only after they had completed a mindfulness exercise. The Implicit affiliation motive  $\times$  Condition GLM indicated that the difference in slopes between the conditions approached significance,  $F(1, 58) = 3.92$ ,  $p = .052$ ,  $\eta_p^2 = .063$ .

Figure 2 (top panel) shows the predicted values of goal selection for participants high (+1 SD) and low (-1 SD) in

the implicit affiliation motive in the two conditions. For participants with a relatively strong implicit affiliation motive, the predicted number of chosen affiliation goals in the mindfulness condition was 4.08, 95% CI = [3.63, 4.54], and in the control condition 3.62, 95% CI = [3.17, 4.06]. For participants with a relatively weak implicit affiliation motive, the predicted number of chosen affiliation goals in the mindfulness condition was 3.22, 95% CI = [2.76, 3.67], and in the control condition 3.28, 95% CI = [2.84, 3.73]. Thus, the mindfulness exercise tended to increase the number of chosen affiliation goals among participants with a strong implicit affiliation motive, rather than decrease the number of chosen affiliation goals among participants with a weak implicit affiliation motive.

Similarly, the implicit affiliation motive significantly predicted the motivation to pursue affiliation goals in the mindfulness condition,  $B = .324$ , 95% CI = [.091, .556], but not in the control condition,  $B = .170$ , 95% CI = [-.067, .408]. Thus, participants indicated their motivation to pursue the affiliation goals to be higher if their affiliation motive was stronger, but only after they had completed a mindfulness exercise. The Implicit affiliation motive  $\times$  Condition GLM indicated that the difference between the slopes did not reach significance,  $F(1, 58) = 2.00$ ,  $p = .163$ ,  $\eta_p^2 = .033$ . This may be due to the fact that both slopes are positive. With this pattern of results, more statistical power may be needed to observe a significant interaction effect.

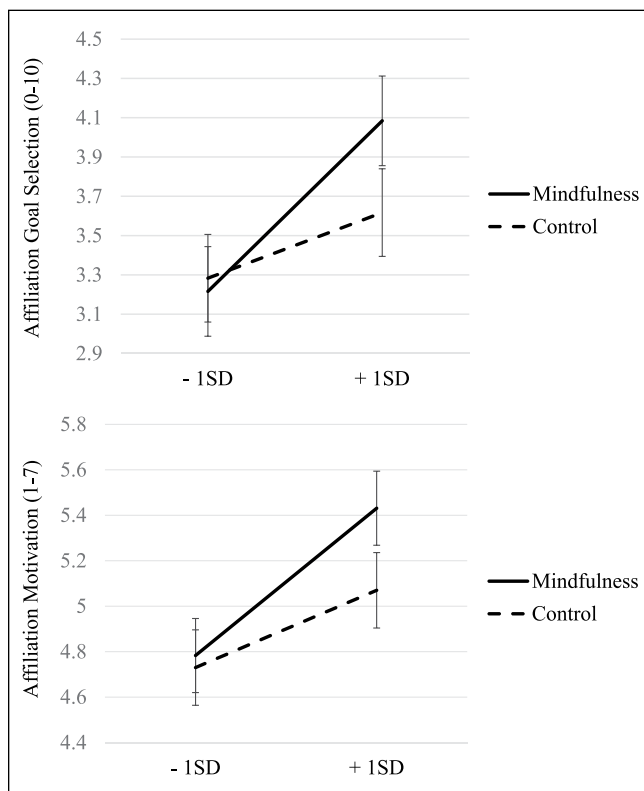
Figure 2 (bottom panel) shows the predicted values of motivation ratings for participants high and low in the implicit affiliation motive in the two conditions. For participants with a relatively strong implicit affiliation motive, the predicted motivation toward affiliation goals in the



**Table 3.** Regression Results Indicating The Predictive Power of the Implicit and Explicit Power Motive on the Selection and Motivation Toward Affiliation-Relevant and Power-Relevant Goals in the Mindfulness and Control Condition.

	Goal selection						Goal rating					
	Affiliation goals			Power goals			Affiliation goals			Power goals		
	B	SE	t	B	SE	t	B	SE	t	B	SE	t
<b>Implicit power motive</b>												
Block 1												
Control condition	-.267	.157	-1.70	-.038	.155	-0.24	-.131	.119	-1.10	.000	.122	0.00
Mindfulness condition	-.264	.169	-1.57	.139	.146	0.95	-.114	.123	-0.93	.153	.116	1.32
Block 2												
Control condition	-.185	.151	-1.23	-.071	.153	-0.47	-.018	.134	-0.13	-.059	.114	-0.51
Mindfulness condition	.103	.145	0.71	-.076	.156	-0.49	.122	.109	1.13	-.094	.123	-0.76
<b>Explicit power motive</b>												
Block 1												
Control condition	<b>-.328</b>	<b>.153</b>	<b>-2.14*</b>	.040	.153	0.26	-.109	.119	-0.92	<b>.242</b>	<b>.117</b>	<b>2.07*</b>
Mindfulness condition	-.279	.167	-1.67	.225	.143	1.58	-.079	.122	-0.64	<b>.329</b>	<b>.108</b>	<b>3.04**</b>
Block 2												
Control condition	.154	.150	1.03	.018	.152	0.12	.122	.132	0.92	.144	.112	1.28
Mindfulness condition	-.151	.143	-1.06	.224	.152	1.47	.062	.109	0.57	<b>.333</b>	<b>.115</b>	<b>2.90**</b>

\*p < .05. \*\*p < .01.



**Figure 2.** Predicted values of affiliation goal selection (top panel) and motivation toward affiliation goals (bottom panel) for participants low (-1 SD) and high (+1 SD) in the implicit affiliation motive in the two conditions.

Note. Error bars represent standard errors of the means.

mindfulness condition was 5.43, 95% CI = [5.11, 5.76], and in the control condition 5.07, 95% CI = [4.74, 5.40]. For participants with a relatively weak implicit affiliation motive, the predicted motivation toward affiliation goals in the mindfulness condition was 4.78, 95% CI = [4.46, 5.11], and in the control condition 4.73, 95% CI = [4.40, 5.06]. Thus, the mindfulness exercise tended to increase the motivation toward affiliation goals among participants with a strong implicit affiliation motive, rather than decrease the motivation toward affiliation goals among participants with a weak implicit affiliation motive.

Furthermore, in neither condition did the implicit affiliation motive predict the selection and motivation toward power goals (*B*s between  $-.152$  and  $.000$ , *t*s between  $-1.04$  and  $0.00$ , *ps*  $\geq .301$ ).

These results confirmed the hypothesis that mindfulness increases the correspondence between the implicit affiliation motive and affiliation goals.

*Predictive value of the implicit affiliation motive in Block 2.* In contrast to the results of Block 1, the implicit affiliation motive did not predict the selection or the motivation toward affiliation goals in the mindfulness condition ( $B_{\text{selection}} = -.047$ , 95% CI =  $[-.338, .245]$ ;  $B_{\text{motivation}} = -.023$ , 95% CI =  $[-.243, .197]$ ). It also did not predict the selection or the motivation toward affiliation goals in the control condition ( $B_{\text{selection}} = .170$ , 95% CI =  $[-.132, .473]$ ;  $B_{\text{motivation}} = .112$ , 95% CI =  $[-.155, .379]$ ). As predicted, the implicit affiliation motive also did not predict the selection and motivation toward power goals (*B*s between  $-.202$  and  $-.128$ , *t*s

between  $-1.57$  and  $-1.04$ ,  $ps \geq .123$ ). Hence, the implicit affiliation motive did not predict any outcome in Block 2. There are various possible explanations for this pattern of findings, which we will address in the discussion.

*Predictive value of the explicit affiliation motive in Block 1.* The results showed that the explicit affiliation motive did not predict the *selection* of affiliation goals in the control condition,  $B = .262$ , 95% CI =  $[-.050, .573]$ , nor in the mindfulness condition,  $B = .215$ , 95% CI =  $[-.122, .552]$ . Although this finding was not directly relevant to our main hypothesis, it is not in line with previous findings in motive research, which suggests that explicit motives are generally good predictors of deliberate decisions such as goal setting (Job & Brandstätter, 2009; McClelland et al., 1989; Schultheiss & Brunstein, 1999, 2002).

That being said, the explicit affiliation motive was a significant predictor of the *motivation* to pursue affiliation goals in both the control condition,  $B = .471$ , 95% CI =  $[.266, .676]$ , and the mindfulness condition,  $B = .324$ , 95% CI =  $[.093, .554]$ . Hence, in contrast to goal selection, this finding does support the general notion in motive research that explicit motives predict goal setting.

As expected, the explicit affiliation motive did not predict the selection or motivation toward power goals ( $B$ s between  $-.050$  and  $.266$ ,  $ts$  between  $-0.32$  and  $1.88$ ,  $ps \geq .065$ ).

Thus, these results partly supported the general notion held in motive research that explicit motives, by default, predict which goals people set for themselves (Hofer et al., 2010; Job & Brandstätter, 2009; McClelland et al., 1989; Schultheiss & Brunstein, 1999, 2002). In both conditions, the explicit affiliation motive significantly predicted higher motivation to pursue affiliation goals. However, this effect was limited to motivation ratings, and did not extend to actually deciding to pursue the relevant goals. The different findings on the two dependent measures may partially be explained by the high correspondence between the explicit motive measure and the motivation rating task (both comprising 7-point Likert-type scales), and the low correspondence between the explicit motive measure and the goal selection task (the latter comprising binary choice).

More central to the present research was the finding that, unlike the results pertaining to implicit motives, mindfulness did not increase the correspondence between explicit motives and goal setting. These results indicate that mindfulness does not simply increase the correspondence between *any* motive and goal setting, for example, by simply increasing the attention paid to goal setting. Instead, supporting our theorizing that mindfulness particularly increases the sensitivity to internal states that signal implicit motives, mindfulness specifically increased the correspondence between the implicit affiliation motive and goal setting.

*Predictive value of the explicit affiliation motive in Block 2.* The results showed that the explicit affiliation motive significantly

predicted the selection of affiliation goals in the control condition,  $B = .323$ , 95% CI =  $[.033, .614]$ , but not in the mindfulness condition,  $B = .147$ , 95% CI =  $[-.140, .434]$ . The same pattern was found for the motivation ratings, where the explicit affiliation motive significantly predicted the motivation toward affiliation goals in the control condition,  $B = .526$ , 95% CI =  $[.298, .753]$ , but not in the mindfulness condition,  $B = .150$ , 95% CI =  $[-.065, .364]$ . The explicit affiliation motive did not predict the selection or rating of power goals ( $B$ s between  $-.143$  and  $.135$ ,  $ts$  between  $-0.93$  and  $1.20$ ,  $ps \geq .235$ ). These results again confirm the general assumption in motive research that explicit motives, by default, predict goal setting (in Block 2, this also included goal selection). Moreover, these results provide even stronger evidence that mindfulness does not increase the correspondence between explicit motives and goal setting. In fact, in Block 2, mindfulness rather *decreased* this correspondence.

*Predictive value of the implicit power motive in Blocks 1 and 2.* Table 3 presents the regression results relating to the power motive. We tested whether mindfulness increased the correspondence between the implicit power motive and goal setting. In Block 1, in contrast to the results of the affiliation motive, the implicit power motive neither predicted the selection, nor the motivation toward power-related goals in the mindfulness condition ( $B_{\text{selection}} = .139$ , 95% CI =  $[-.154, .431]$ ;  $B_{\text{motivation}} = .153$ , 95% CI =  $[-.078, .385]$ ), nor in the control condition ( $B_{\text{selection}} = -.038$ , 95% CI =  $[-.347, .272]$ ;  $B_{\text{motivation}} = .000$ , 95% CI =  $[-.244, .245]$ ). The implicit power motive did also not predict the selection and motivation toward power-related goals in Block 2 ( $B$ s between  $-.094$  and  $-.059$ ,  $ts$  between  $-0.76$  and  $-0.47$ ,  $ps \geq .644$ ). In both blocks, the implicit power motive did also not predict the selection and motivation toward affiliation-related goals. Thus, whereas the mindfulness manipulation increased the correspondence between the implicit affiliation motive and goal setting, it had no effect on the correspondence between the implicit power motive and goal setting. We will address these asymmetric effects of mindfulness in the discussion.

*Predictive value of the explicit power motive in Blocks 1 and 2.* The explicit power motive did not predict the selection of power-related goals in Block 1 or in Block 2 ( $B$ s between  $.018$  and  $.225$ ,  $ts$  between  $0.12$  and  $1.58$ ,  $ps \geq .120$ ). In contrast, the explicit power motive significantly, yet negatively, predicted the selection of affiliation goals in Block 1. However, this was only the case in the control condition,  $B_{\text{control}} = -.328$ , 95% CI =  $[-.635, -.021]$ , not in the mindfulness condition,  $B_{\text{mindfulness}} = -.279$ , 95% CI =  $[-.612, .055]$ , and also not in the mindfulness or control condition in Block 2,  $B$ s:  $-.151$  and  $.154$ ,  $ts$ :  $-1.06$  and  $1.03$ ,  $ps \geq .296$ . Thus, overall, the explicit power motive was not a significant predictor of the *selection* of power-relevant goals, which contradicts previous findings that explicit motives are generally good predictors of goal setting.

That being said, the explicit power motive was a significant predictor of the motivation toward power goals in Block 1, both in the mindfulness condition,  $B = .329$ , 95% CI = [.113, .545], and in the control condition  $B = .242$ , 95% CI = [.008, .476]. The explicit power motive was also a significant predictor of the motivation toward power goals in Block 2, if only in the mindfulness condition,  $B = .333$ , 95% CI = [.103, .562], not in the control condition,  $B = .144$ , 95% CI = [-.081, .369]. Thus, overall, the explicit power motive was a good predictor of the *motivation* toward power-relevant goals, which does converge with previous motive research showing that explicit motives predict goal setting.

**Summary.** In sum, our findings confirmed our main hypothesis by showing that the implicit affiliation motive predicted the selection of affiliation goals and the motivation toward them in Block 1, but only when participants had completed the mindfulness exercise. The implicit motive had no predictive value in Block 2 and did not predict power goal setting.

The explicit affiliation motive predicted only the motivation toward affiliation goals in Block 1, and predicted both goal motivation and selection in Block 2 in the control condition. Similar to the implicit motives, the explicit affiliation motive did not predict power goals.

The mindfulness exercise did not increase the correspondence between the implicit power motive and power goal setting.

## Discussion

The current experiment was designed to examine the role of a mindfulness exercise in increasing the correspondence between the implicit affiliation motive and affiliation-relevant goal setting. Previous research has shown that implicit motives are typically poorly integrated into people's goal setting in daily life as, in contrast to explicit motives, they are not accessible to consciousness and can therefore not be consulted consciously. As a result, people often make choices that are not in line with what truly motivates them, which may negatively affect their happiness and well-being. Here, we reasoned that a brief mindfulness exercise might increase the correspondence between implicit motives and motive-relevant choices, as it could increase the sensitivity to internal affective signals reflecting one's implicit motives during a choice task.

The results relating to the affiliation motive largely confirmed our expectations. Whereas the implicit affiliation motive did not predict affiliation goal setting in the control condition, it did predict affiliation goal setting after the mindfulness exercise. Similarly, the implicit affiliation motive did not predict the motivation to pursue affiliation goals in the control condition, but it did predict motivation in the mindfulness condition. In contrast, and in line with our theorizing, the mindfulness exercise did not increase the correspondence

between the explicit affiliation motive and goal setting. Across the board, the explicit affiliation motive was a better predictor of goal setting in the control condition than in the mindfulness condition, and the implicit affiliation motive was a better predictor of goal setting in the mindfulness condition than in the control condition. Thus, the degree to which participants strongly but implicitly value affiliation predicted the number of affiliation goals they decided to pursue, and their motivation toward these goals, but only after they had completed a mindfulness exercise. In other words, mindfulness increased the congruence between the implicit affiliation motive and affiliation goal setting and motivation.

It is important to note that the increased congruence between the implicit affiliation motive and goal setting was only observed in the first test block after the experimental manipulation (Block 1), and not in the second test block (Block 2). There are various possible explanations for this pattern. It is possible that the effect of a brief mindfulness manipulation lasts only briefly. In addition, participants critically evaluated various goals in the first test block, which may have shifted their focus from bodily signals to conscious cognitions and to thinking about behaviors in external, social settings. Finally, it is possible that the imagery instructions provided in Block 2 interfered with the effects of the mindfulness exercise, for example, by leading participants to focus on different aspects of the choice process than the body scan did. These explanations point to a potential limitation of the mindfulness exercise, namely, that its effect is short-lived and easily overruled by other processes.

Alternatively, the absence of a mindfulness effect in Block 2 may be due to the inherently dynamic nature of motivational processes. Motivation researchers have shown how the expression of a particular motive, for example, by displaying one's commitment to motive-relevant goals, may serve to temporarily satisfy this motive, leading to a momentary reduction in motivational strength (e.g., Schultheiss & Pang, 2007). It is possible, then, that the expression of preferences for affiliation goals in Block 1 temporarily satisfied the implicit affiliation motive, leading to a momentary reduction in affiliation motivation during Block 2. Future research may shed more light on the validity of these explanations.

Although the focus of this research was on the affiliation motive, our experiment also allowed to examine the potential role of mindfulness in power-relevant goal setting. The results for the power motive did not mirror the results of the affiliation motive. The mindfulness exercise did not increase the correspondence between the implicit power motive and power-relevant goal setting. Thus, a more refined conclusion from our results is that mindfulness increases motive congruence in the affiliation domain but not in the power domain. Perhaps interventions that increase congruence in the affiliation domain do not necessarily increase congruence in the power domain, and vice versa. One explanation may be that the positive affective responses associated with affiliation goals are qualitatively different from the affective responses

associated with power goals. Whereas the successful pursuit of affiliation goals is associated with joy, happiness, and pleasure, the successful pursuit of power goals is associated with feelings of strength and impact (Job & Brandstätter, 2009). Perhaps the mindfulness exercise increases access to affiliation-related feelings but not to power-related feelings. Furthermore, studies show that affiliation-motivated people have a preference for calm and relaxed affect, whereas power-motivated people have a preference for excitement (Job, Bernecker, & Dweck, 2012). Mindfulness may cater for the former but not the latter type of affect. Power motive congruence may require other types of interventions that increase access to power-related affect (e.g., goal imagery procedures, Job & Brandstätter, 2009; Schultheiss & Brunstein, 1999).

Alternatively, it could be that the mindfulness exercise did increase access to power motive-related feelings, but at the same time decreased participants' willingness to let these feelings guide their goal choices. Mindfulness training is increasingly popular in Western countries, and it is typically associated with the development of compassion, the search for inner peace, and detachment from modern-day desires. Perhaps the mindfulness exercise reduced participants' motivation to pursue goals related to social status and power (even though they realize it may bring them affective pleasure) because these goals somehow seemed incompatible with the purpose of the mindfulness exercise. Pursuing affiliation goals, in contrast, seems more compatible with a mindset induced by a mindfulness exercise. Examining these possible explanations for the asymmetric effects of mindfulness on affiliation and power would be an interesting avenue for future research.

While acknowledging these boundary effects, we found confirming evidence for our hypothesis that mindfulness increases the correspondence between the implicit affiliation motive and goal setting. In line with previous research, the results in the control condition show that goal selection is independent from implicit motives. By default, people appear to set goals in line with explicit motives, which are generally more attuned to cultural norms and expectations of others (Hofer et al., 2010; McClelland et al., 1989; Schultheiss & Brunstein, 1999). As the results in the mindfulness condition of our experiment show, however, people *can* set goals that reflect their implicit motives, if they have been given a tool to increase access to affective signals that reflect the strength of their implicit motives.

Future research may further uncover the practical value of mindfulness to increase the relation between implicit motives and self-selected goals in daily life. It may well turn out that people who practice mindfulness frequently, or who have a chronically mindful disposition (Brown & Ryan, 2003), have more implicit-explicit motive congruence, while those who are less mindful have less implicit-explicit motive congruence. Such findings may point to a general mechanism by which mindfulness improves people's quality of life. Indeed, there is accumulating evidence that mindfulness increases

the quality of choices people make in various life domains (e.g., Kiken & Shook, 2011, for a review see Karelaia, & Reb, 2015).

Given these promising findings, it would be interesting to explore the underlying processes further. We suggest that the body scan exercise increases access to affective signals that emerge as one is considering each goal and that reflect whether one would enjoy pursuing it or not. This is in line with previous research that has shown that mindfulness and meditation can increase access to unconscious processes (Strick et al., 2012) and increase the acceptance of these processes (e.g., Alberts, Mulken, Smeets, & Thewissen, 2010). This way, the mindfulness exercise can increase the effect of implicit motives on one's explicit goal setting, as well as the effect of implicit motives on one's self-reported explicit motives.<sup>2</sup> In other words, we propose that mindfulness leads people to become more aware of the affective signals caused by implicit motives and reconcile their explicit motives with the propositional implications of this affective arousal (e.g., "I feel great when I think of collaborating closely with others. I guess I should work in a team"; compare Gawronski & Bodenhausen, 2006). This reasoning is also supported by previous findings that mindfulness promotes the integration of implicit and explicit forms of self-knowledge (Koole, Govorun, Cheng, & Gallucci, 2009).

The finding that mindfulness can increase access to implicit motives opens up the intriguing possibility that mindfulness also increases access to other kinds of unconscious information and processes. Better access to unconscious processes is often, though not always, functional. For instance, access to the unconscious has been linked to creativity (e.g., Bowers, Regehr, Balthazard, & Parker, 1990; Zhong, Dijksterhuis, & Galinsky, 2008). Furthermore, research on risk-taking suggests that access to unconscious affective signals increases the capability to learn from mistakes (Bechara, Damasio, Tranel, & Damasio, 1997; Wagar & Dixon, 2006). It would be interesting for future research to examine whether mindfulness improves these important skills by increasing access to unconscious information. Indeed, recent studies suggest that mindfulness can facilitate creative insight problem solving (Ostafin & Kassman, 2012), and that it is particularly the tendency to closely observe one's thoughts and sensations that predicts creative performance (Baas, Neveicka, & Ten Velden, 2014).

The most salient practical implication of our research, however, is that mindfulness may help people make better choices related to goal setting. We should note that we only found significant results in the affiliation domain, not in the power domain. Moreover, our findings are based on a rather small sample of undergraduate students. To generalize the conclusions to real-life choices, it would be important to replicate these findings in a larger sample and in other populations. When considering the application of mindfulness to increase well-being, it is also important to consider the potential dissociation that may arise between goals and

explicit motives. Research by Job, Langens, and Brandstätter (2009) suggests that a low correspondence between goals and explicit motives predicts negative affective outcomes in the achievement domain. Therefore, increasing the correspondence between goals and implicit motives without increasing (or even decreasing) the correspondence between goals and explicit motives may lead people into another sort of potentially harmful discrepancy.

Despite these limitations, the present findings provide new and exciting evidence for the role of mindfulness in connecting implicit motives and goal setting. The study integrates the relatively young field of mindfulness research with the age-old research of implicit motives, which may spur new ideas and research in both areas. Furthermore, the research points to a novel way by which people may improve their choices to ultimately experience more satisfaction and well-being.

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### Supplemental Material

The online supplemental material is available online.

### Notes

1. Initially, the study had a between-participants design and comprised only Sessions 1 and 2. This yielded promising results in line with the main hypothesis. For the sake of stability and reliability, we added Session 3 and switched to a within-participants design.
2. Indeed, a recent preliminary study (Strick & Papies, 2014) suggests that this is the case.

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