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Published on: 01 Feb 2019 - [Personality and Social Psychology Bulletin](#) (SAGE Publications)

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DOI: <https://doi.org/10.1177/0146167218781335>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-177629>

Journal Article

Accepted Version

Originally published at:

Nikitin, Jana; Freund, Alexandra M (2019). Who Cares? Effects of Social Approach and Avoidance Motivation on Responsiveness to Others. *Personality and Social Psychology Bulletin*, 45(2):182-195.

DOI: <https://doi.org/10.1177/0146167218781335>

Who Cares? Effects of Social Approach and Avoidance Motivation on Responsiveness to Others

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Author Note

This study was supported by Grant 2012/12 (Project “Changes in Adaptivity of Social Approach and Avoidance Behavior across Adulthood”) from the Suzanne and Hans Biäsch Foundation for the Promotion of Applied Psychology (PI: Jana Nikitin), and by Grant 100019_159399 (Project “Why Is Social Avoidance Motivation Detrimental to Young But Not Older Adults?”) from the Swiss National Science Foundation (PI: Jana Nikitin). Correspondence concerning this article may be addressed to the first or second author: jana.nikitin@unibas.ch or freund@psychologie.uzh.ch. We are grateful to Julia Stoll and Silvia Bettinaglio for their help with studies preparation and data collection and to both labs (Basel and Zurich) for fruitful discussions of the work.

10,978 words

Abstract

Responsiveness to others (i.e., our understanding, validation, and support of important aspects of others) significantly contributes to positive social relationships. In the present research, we found evidence that responsiveness has motivational origins. In two experiments, participants who were approaching positive social outcomes had a higher level of responsiveness compared to participants who were avoiding negative social outcomes. A third experiment disentangled the roles of motivation and situation valence. Positive (compared to negative) social situations were associated with higher approach motivation, lower avoidance motivation, and a higher level of responsiveness. However, within a given situation, both approach and avoidance motivation were associated with a higher level of responsiveness. This association was even stronger in negative situations, suggesting that both approach and avoidance motivation might be ways of behaving responsively in potentially difficult social situations. The effects were independent of relationship closeness and partly weaker in older compared to younger adults.

Keywords: approach motivation, avoidance motivation, responsiveness, adult age differences

Who Cares? Effects of Social Approach and Avoidance Motivation on Responsiveness to Others

Imagine you want to undertake an exciting road trip with a friend. You call her to discuss the idea. Now imagine the same friend, but you are debating about a topic on which you disagree. You want to defend your position, but also avoid conflict. In which of the two situations would you be more responsive to your friend's needs and well-being?

Responsiveness is defined as one's understanding, validation, and support of important aspects of the other person (Reis, Clark, & Holmes, 2004). Responsiveness has a clear benefit for people's relationships, regardless of whether the relationships are close (Debrot, Cook, Perrez, & Horn, 2012), less close (Canevello & Crocker, 2010), formal (Reis et al., 2008), or encounters with strangers (Reis et al., 2010). By contributing to a positive social relationship, responsiveness can help to satisfy one of the most important human needs: the need for affiliation (Reis & Gable, 2015).

We know surprisingly little about how responsiveness originates (Canevello & Crocker, 2010; Winczewski, Bowen, & Collins, 2016). In their model of the intimacy process, Reis and Shaver (1988) argued that responsiveness originates from people's motives, needs, goals, and fears. Based on affiliation theory (Mehrabian & Ksionzky, 1974), Reis and Shaver speculated that social approach and avoidance motivation might determine responsiveness, although the authors did not discuss the idea in depth. In the present research, we seize Reis and Shaver's suggestion and propose that social approach motivation predicts higher levels of responsiveness than social avoidance motivation.

Social approach and avoidance motivation are two fundamental motivational orientations that affect how people behave and feel in social situations (e.g., Gable & Berkman, 2008). Every day, we experience various social situations in which we either focus on approaching potentially positive outcomes, such as an exciting road trip with a friend (i.e., *social approach motivation*) or

on avoiding potentially negative outcomes, such as a conflict with a friend (i.e., *social avoidance motivation*). We maintain that the approach of positive social outcomes broadens one's focus to all potentially helpful information for this goal (including others' needs), whereas the avoidance of negative social outcomes narrows one's focus to one's own concerns, leaving less attentional capacity free for others' needs (Derryberry & Tucker, 1994; Förster & Higgins, 2005; Impett et al., 2010).

To our knowledge, only one study has tested the association of social approach and avoidance motivation on the one hand, and responsiveness on the other (Impett et al., 2010; Study 2b). In that study, romantic couples reported their habitual approach and avoidance relationship goals before they came to a laboratory session where they discussed a positive event in their relationship. During the discussion, responsiveness was coded. Supporting a differential association of social approach versus social avoidance motivation and responsiveness, people high (compared to low) in habitual approach goals and their partners were more responsive, whereas people high (compared to low) in habitual avoidance goals and their partners were less responsive.

Although the Impett et al. (2010) study provides first support for a link of social approach and avoidance motivation on the one hand, and responsiveness on the other, their findings are based on correlational data, precluding the possibility of establishing causality and of ruling out the effect of possible third variables associated with approach and avoidance motivation such as extraversion and neuroticism, respectively (Gable, Reis, & Elliot, 2003). In addition, it is unclear whether and how social approach and avoidance motivation affect responsiveness in relationships other than romantic ones and beyond young adulthood. Finally, we know rather little about responsiveness and subjective well-being, that is, whether being responsive makes responsive people happy (or only their interaction partners). The present research addresses these questions.

We hypothesize that participants show a higher level of responsiveness when pursuing positive social outcomes than when avoiding negative social outcomes. People who are attempting to create positive social experiences broaden their attention to include all potentially helpful information (Derryberry & Tucker, 1994; Förster & Higgins, 2005; Impett et al., 2010). Thus, people with stronger approach motivation are expected to be attentive to the needs of the other person, as the needs of the social interaction partner are potentially important for creating a positive social interaction. In contrast, people aiming to avoid negative experiences narrow their attention. They are concerned with potential threats (Vorauer, Cameron, Holmes, & Pearce, 2003), which leaves them with little capacity to pay attention to others' needs.

The Role of Age

To date, research on the motivational origins of responsiveness has been conducted exclusively in young adulthood, a phase of life in which it is particularly important to form new relationships (Nikitin & Freund, 2008). As Gable (2006) argued, social relationships do not just happen, they have to be actively approached and pursued. Accordingly, previous research demonstrated that social approach motivation is more important for feelings of social integration in young compared to older adults (Nikitin & Freund, 2018) and that young adults suffer more than older adults do when they cannot fulfill an approach goal (Nikitin, Schoch, & Freund, 2014). Responsiveness may be one way to effectively implement approach goals. Consequently, young people may be particularly responsive when they are approach motivated.

As people age, their interest in maintaining existing social relationships gradually outweighs their interest in new social relationships (Fung, Carstensen, & Lang, 2001). In addition, older people presumably increasingly seek harmony in the here and now instead of investing resources into the future (Carstensen, 2006). The avoidance of negative social encounters seems to be an adaptive strategy in this regard. In fact, older adults profit more from

the avoidance of negative social encounters (Charles, Piazza, Luong, & Almeida, 2009). One way in which older adults master potentially negative social interactions may be by maintaining a high level of responsiveness. There is indirect evidence for this proposal. For example, compared to younger adults, older adults tend to focus more on others' needs (Freund & Blanchard-Fields, 2014); this focus on others' needs may then help them to remain responsive in difficult social situations. In addition, older adults report having better control over their emotions (Gross et al., 1997), which may enable them to focus more on others' than on their own emotions. Taken together, older adults may maintain a high level of responsiveness in difficult social situations despite avoidance motivation.

The Role of Relationship Closeness

Do the motivational origins of responsiveness differ with respect to relationship closeness? Cialdini and colleagues define *relationship closeness* as a sense of oneness that involves interconnected identities with others and feelings of closeness (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). Not surprisingly then, compared to relationships with acquaintances or strangers, close relationships are potentially both more rewarding in good times and more stressful in bad times (Myers, 1999). This could intensify the effects of social approach and avoidance motivation on responsiveness. Specifically, in close relationships, one may be more responsive when striving for positive outcomes, but less responsive when avoiding negative outcomes. However, the effects of social approach and avoidance motivation may also be relatively independent of relationship closeness because—as discussed above—they involve general processes such as the allocation of attention. Irrespective of relationship closeness, these general processes could result in more or less attention to the needs of the other person.

Overview of the Present Studies

The present research is the first to test a causal hypothesis concerning the motivational origins of responsiveness. Based on the definition of social approach and social avoidance motivation as the striving for positive and the avoidance of negative social outcomes, respectively, we operationalized approach versus avoidance motivation as the goal to approach a positive outcome versus the goal to avoid a negative outcome in a specific social situation (see Nikitin et al., 2014). In three online experiments, we used different methods (narratives in Study 1, scenarios in Study 2, and daily social situations in Study 3) to induce social approach and avoidance motivation. We assessed responsiveness using text analysis in Study 1 and self-report in Studies 2 and 3. To explore the possibility that social approach and avoidance goals affect responsiveness differently as a function of relationship closeness, we manipulated (Studies 1 and 2) or measured (Study 3) relationship closeness. In addition, to explore possible age-differential effects of social approach and avoidance motivation on responsiveness, we included participants of a wide age range (18–87 years) in all three studies. To test age-differential effects, we ran subgroup analyses with three age groups that are widely accepted in the developmental literature as meaningful and distinguishable (Staudinger & Bluck, 2001): young (18–39 years), middle-aged (40–59 years), and older adults (≥ 60 years). Finally, all three studies assessed subjective well-being to determine whether responsiveness and subjective well-being are positively correlated. Although it is often assumed that responsiveness and subjective well-being are positively correlated, most studies on responsiveness have focused on relationship satisfaction rather than the participants' subjective well-being (see Reis & Gable, 2015). Online supplemental material provides the exact wording of the instructions and the instruments used in the studies. Descriptive statistics of all studies are reported in Table 1. All studies are in compliance with the guidelines of the local ethics committee.

Study 1: Narratives of Social Situations

In Study 1, we induced social approach and avoidance motivation by asking participants to describe a social situation that they had recently experienced, in which they had either approached a positive outcome or avoided a negative outcome. Half of the participants described a situation that they had recently experienced with a person (or people) they felt close to; the other half described a situation that they had recently experienced with a person (or people) they did not feel close to. Responsiveness was measured as the percentage of words in the participants' narratives that were first person plural pronouns (e.g., we, us, our). There is robust empirical evidence that use of first person plural pronouns expresses “we-ness,” a psychologically inclusive form defined by feelings of emotional closeness, connection, inclusion, and integration (for an overview of this research, see Pennebaker, Mehl, & Niederhoffer, 2003). “We-ness” aims at the inclusion of actor and partner (Brown & Levinson, 1987); expresses a coming together during a shared crisis (Stone & Pennebaker, 2002); is related to high emotional involvement in a romantic relationship (Cegala, 1989), to interdependence (vs. independence) in married couples (Sillars, Shellen, McIntosh, & Pomegranate, 1997), and to positive regard for the needs and feelings of others (Pennebaker & Lay, 2002). As Pennebaker and colleagues put it, use of first person plural pronouns in natural language is a marker of “the degree to which people focus on or relate to others” (Pennebaker et al., 2003, p. 569), rendering it a suitable indirect method of assessing responsiveness.

Method

Participants. The sample consisted of $N = 330$ participants aged 18–87 years ($M = 43.14$ years, $SD = 17.83$ years; $n = 151$ young, $n = 93$ middle-aged, and $n = 86$ older adults). Among them, 70% were female and 63% reported being in a stable relationship. We used various online social platforms to recruit the participants. A power analysis for a two-way ANCOVA, using an

α error probability of 0.05, a power ($1-\beta$ error probability) of 0.8, and a sample size of $N = 330$, revealed that Study 1 was sufficiently powered to find an effect size of $d = 0.31$.

Procedure and manipulation. After giving informed consent, participants completed a questionnaire assessing sociodemographic information and were randomly assigned to one of four conditions defined by the combinations of motivation (approach or avoidance) and level of relationship closeness (low or high). The participants were to think about a recently experienced social situation that fulfilled the criteria of the condition to which they had been assigned and to describe that situation in writing, in the form of a narrative. Subsequently, they responded to two manipulation check questions and reported their level of subjective well-being directly after experiencing the social situation.

Manipulation of relationship closeness and motivation. The participants assigned to the high closeness condition were asked to describe a social situation they had recently experienced that involved a person (or people) they felt close to (e.g., friends or family). Those assigned to the low closeness condition were asked to describe a social situation they had recently experienced that involved a person (or people) they did not feel close to (e.g., acquaintances or strangers). The participants in the approach motivation condition described a social situation in which they had approached a positive outcome. The participants in the avoidance motivation condition described a situation in which they had avoided a negative outcome. In the written instructions, we informed the participants that approaching positive outcomes and avoiding negative outcomes can mean many things, gave them examples of both, and stated that we were interested in the participant's own example.

Manipulation checks. To check whether the participants had followed the instructions, we assessed their approach and avoidance motivation in the situation and how close they felt to the person/people with whom they had experienced the situation: "How strongly did you

approach something positive [avoid something negative] in the situation?”, “How close is your relationship with the person/people described in the situation?”. As is true for all reported response scales (unless stated otherwise), the response scales ranged from 0 (*not at all*) to 6 (*very much*).

Assessment of responsiveness. We used the German adaptation (Wolf et al., 2008) of the Linguistic Inquiry and Word Count program (LIWC; Pennebaker, Booth, & Francis, 2007) to count the number of first person plural pronouns that participants wrote in their narratives. To control for the total number of words participants wrote in their narratives ($M = 79.58$, $SD = 44.24$), we calculated the percentage of words in the narratives that were first person plural pronouns. This percentage (hereafter referred to as “responsiveness”) constitutes our operationalization of responsiveness. To control for the participants’ general use of pronouns in their narratives, we calculated the percentage of words in the narratives that were pronouns (hereafter referred to as “pronoun rate”; $M = 13.74\%$, $SD = 5.76\%$) and used it as a covariate in the analyses.

Assessment of subjective well-being. We used the four-item emotional valence scale of Short Form A of the Multidimensional Mood Questionnaire (Steyer, Schwenkmezger, Notz, & Eid, 1997) to measure subjective well-being. Two items were positive (e.g., “content”) and two were negative (e.g., “uncomfortable”). The participants indicated how they felt directly after experiencing the situation. We inverted the participants’ ratings for the two negative items and averaged each participant’s ratings for the four items to create a subjective well-being score for each participant.

Results

Manipulation checks. Using a repeated-measures ANOVA with self-reported social approach and avoidance motivation as a within-subject factor and motivation condition as a

between-subjects factor, we tested whether the motivation manipulation affected the participants' reports of social approach and avoidance motivation. We found the expected interaction of self-reported motivation and motivation condition, $F(1, 281) = 52.12, p < .001, d = 0.86$: Participants in the approach condition reported higher approach motivation ($M = 4.94, SE = 0.10$) compared to participants in the avoidance condition ($M = 4.10, SE = 0.16$), $t(310) = 4.54, p < .001, d = 0.52$, while participants in the avoidance condition reported higher avoidance motivation ($M = 4.93, SE = 0.13$) compared to participants in the approach condition ($M = 3.69, SE = 0.17$), $t(296) = 5.61, p < .001, d = 0.65$. In addition, the results of an independent-samples t -test showed that the participants in the high closeness condition reported having a closer relationship with the person/people in their narrative ($M = 4.64, SE = 0.11$) compared to the participants in the low closeness condition ($M = 1.84, SE = 0.14$), $t(328) = 15.74, p < .001, d = 1.74$.

Motivation and responsiveness.

Main analysis. To test the main hypotheses, we ran a two-way ANCOVA with motivation and relationship closeness as between-subjects factors, with pronoun rate and age as covariates, and responsiveness as the dependent variable. We examined the main effects as well as all two- and three-way interactions involving motivation, relationship closeness, and age. As hypothesized, the participants' motivation affected their level of responsiveness, $F(1, 321) = 8.92, p = .003, d = 0.33$ (see also Figure 1): The participants in the approach condition used over twice as many first person plural pronouns ($M = 2.25\%, SE = 0.19\%$) as those in the avoidance condition ($M = 0.92\%, SE = 0.20\%$; reported means are adjusted for the covariates). None of the other main effects or interactions were significant (all $ps \geq .07$).

Exploratory analyses. As the main analysis did not reveal the expected linear age-differential effect of motivation on responsiveness, we explored whether the effect could be described with a curvilinear trend. A visual inspection of the data (see Figure S1) suggested that

age had a quadratic effect on the relationship between motivation and responsiveness. To examine this possibility further, we included a quadratic function of age (built from a z-standardized variable) and its interaction with motivation in the previous ANCOVA model. Once again, motivation had a main effect on responsiveness, $F(1, 319) = 23.55, p < .001, d = 0.54$. In addition, there was a significant interaction of $\text{Age}^2 \times \text{Motivation}$, $F(1, 319) = 4.79, p = .03, d = 0.25$. No other effects were significant (all $ps \geq .15$).

To qualify the quadratic age-differential effect of motivation on responsiveness, we repeated the ANCOVA with motivation and relationship closeness as between-subjects factors and pronoun rate as a covariate for each of the predefined age groups (young, middle-aged, and older adults; see Table 2). Motivation had a significant effect on responsiveness in young adults ($F[1, 146] = 13.05, p < .001, d = 0.60$) and middle-aged adults ($F[1, 88] = 19.29, p < .001, d = 0.94$), but not in older adults ($F < 0, p = .90$). We explored whether these differences were qualified by an age-differential level of responsiveness in the approach and the avoidance condition. There was no linear effect of age on responsiveness in either motivation condition ($ps \geq .58$). There was a quadratic effect of age on responsiveness in the approach condition, $F(1,174) = 4.36, p = .04, d = 0.31$. However, the differences between age groups did not reach significance ($ps \geq .06$). There was no quadratic effect of age on responsiveness in the avoidance condition ($p = .40$).

Responsiveness and subjective well-being. Using hierarchical regression analysis, we tested whether responsiveness was correlated with subjective well-being (after controlling for pronoun rate). Responsiveness and subjective well-being were positively associated, $\beta = .24, p < .001, \Delta R^2 = .06$. This association was weaker but remained significant after controlling for motivation condition, closeness condition, and age, $\beta = .12, p = .02, \Delta R^2 = .01$. Although the correlational assessment of responsiveness and subjective well-being does not allow us to

identify responsiveness as a unique mediator, it can be used to rule out the presence of a mediation effect and to examine the degree to which responsiveness accounts for the effect of motivation condition on subjective well-being (for a detailed discussion on this topic, see Fiedler, Schott, & Meiser, 2011). To this end, we ran a mediation analysis using Hayes macro for SPSS (Hayes, 2013). The partial mediation effect accounted for $\Delta R^2 = .04$ (95% CI [.02, .07]) of the variance in subjective well-being (for detailed results of the mediation analysis, see Figure S2).

Discussion

Study 1 provides first indirect evidence that people are more responsive (as operationalized by the percentage of words in the participants' narratives that were first person plural pronouns) when they approach positive than when they avoid negative social outcomes. It is important to note that this effect was not driven by the participants' general use of pronouns in their narratives, but specifically by their use of first person plural pronouns. This was independent of the closeness (high, low) of the participants' relationship with the person/people in their narrative. The effect of motivation (approach, avoidance) on responsiveness was moderated by a quadratic function of age: The effect was significant in young and middle-aged adults, but not in older adults. However, age differences in responsiveness did not reach significance in the approach or the avoidance condition. Finally, and replicating previous studies (e.g., Seider, Hirschberger, Nelson, & Levenson, 2009), responsiveness was positively associated with subjective well-being. This finding supports the assumption that the feeling of "we-ness" is not only beneficial for the relationship, but also for the person's own well-being.

Although Study 1 provides a first confirmation of the hypotheses, it has several shortcomings. First, various factors (e.g., current emotions, appraisals, coping efforts, personality traits; Levine & Safer, 2002) may bias participants' descriptions of past experiences. Moreover, participants' descriptions of past experiences may vary with respect to many dimensions, such as

relationship quality (which may be generally higher in older adulthood; Akiyama, Antonucci, Takahashi, & Langfahl, 2003), emotional intensity (which may be generally lower in older adulthood; Charles & Piazza, 2007), or elapsed time since the event occurred (past experiences are perceived as more positive than similar more recent experiences; Morewedge, 2013). Second, although there is broad empirical support for the association between participants' rate of first person plural pronoun use and responsiveness-related psychological constructs such as emotional closeness, interdependency, and inclusion (Pennebaker et al., 2003), rate of first person plural pronoun use is merely an approximation to the construct of responsiveness. In fact, there is some evidence that rate of first person plural pronoun use can also be driven by social dominance (Neysari et al., 2016). Third, the age-differential effect of motivation condition on responsiveness followed a quadratic trend. It is an open question whether this effect can be replicated in further studies.

Study 2: Scenarios of Social Situations

In Study 2, to counteract possible biases in the participants' recollection, we used scenarios involving approach and avoidance motivation. Moreover, to rule out the possible confound of motivation and relationship quality, we presented approach and avoidance scenarios in a within-subject design and asked the participants to think about interacting with the same person in each of the scenarios. Responsiveness was assessed using a more direct method than that used in Study 1, namely, that of self-reported focus on the other person's well-being in the scenarios.

Method

Participants. The sample consisted of $N = 203$ participants aged 19–81 years ($M = 59.15$ years, $SD = 17.53$ years; $n = 64$ young, $n = 69$ middle-aged, and $n = 70$ older adults). Among them, 44.8% were female and 63% reported being in a stable relationship. A power analysis for a

within-between mixed design ANOVA, using an α -error probability of 0.05, a power ($1-\beta$ error probability) of 0.8, and a sample size of $N = 203$, revealed that Study 2 was sufficiently powered to find an effect size of $d = 0.20$. We recruited the participants using an online recruitment service.

Procedure. After giving informed consent, the participants completed a questionnaire assessing sociodemographic information. Then we randomly assigned each participant to one of two conditions of relationship closeness (high, low). The participants read six scenarios and imagined interacting with the same person, to whom they did (or did not) feel close, in each of the scenarios. Three of the six scenarios involved approach motivation and three involved avoidance motivation. After reading each scenario, the participants answered questions about their emotions and their focus on the other person's subjective well-being in the scenario. The order of scenario presentation was randomized across participants.

Approach and avoidance scenarios. The participants were asked to think of a person to whom they did (or did not) feel close, to indicate the category of relationship they have with this person (e.g., "a friend"), and the degree of closeness of the relationship. The participants were asked to imagine the same person in all six scenarios; to remind them of this, the person's relationship category appeared in the scenario descriptions (e.g., "You do not want to hurt this person ["a friend"]"). Social approach and avoidance motivation were induced by three scenarios each. In the approach condition, participants read short descriptions of a situation involving the approach of a positive social outcome (i.e., experiencing something together with the other person; [re]establishing contact with the other person; bringing joy to the other person). In the avoidance condition, participants read short descriptions of a situation involving the avoidance of a negative social outcome (i.e., avoiding a conflict with the other person; not hurting the other person; avoiding appearing incompetent in front of the other person). The participants were asked

to imagine pursuing the goal described in the given scenario and respond to questions regarding their motivation and subjective well-being in the situation. Their responses were aggregated across scenario type (approach or avoidance). As is true for all reported response scales (unless stated otherwise), the response scales ranged from 0 (*not at all*) to 6 (*very much*).

Manipulation checks. For each scenario, we assessed approach and avoidance motivation: “Do you want to experience something positive/avoid something negative in the situation?”. We assessed relationship closeness before the participants read the six scenarios: “How close is your relationship with this person?”.

Assessment of responsiveness. For each scenario, the participants reported the extent to which they cared about the other person’s well-being in the given situation: “How important to you is the other person’s well-being in this situation?”.

Assessment of subjective well-being. Using the valence scale of the Self-Assessment Manikin scales, the participants indicated how they felt in the situation (Bradley & Lang, 1994). Five manikins in a row expressed five gradations of (un)happiness corresponding to a five-point scale ranging from 0 (*unhappiness*) to 4 (*happiness*). The participants clicked on the box below the manikin that best expressed their level of subjective well-being in the situation.

Results

Manipulation checks. A 2×2 repeated-measures ANOVA with self-reported motivation and motivation condition yielded the expected interaction effect, $F(1, 177) = 51.14, p < .001, d = 1.07$. Participants reported higher approach motivation in the approach condition ($M = 5.03, SE = 0.08$) compared to the avoidance condition ($M = 4.52, SE = 0.08$), $F(1, 200) = 43.69, p < .001, d = 0.93$, and they reported higher avoidance motivation in the avoidance condition ($M = 4.49, SE = 0.11$) compared to the approach condition ($M = 3.71, SE = 0.15$), $F(1, 178) = 32.91, p < .001, d = 0.86$. Relationship closeness was also affected by the closeness condition: Participants reported

feeling closer to the other person in the high closeness condition ($M = 5.58$, $SE = 0.09$) compared to the low closeness condition ($M = 2.38$, $SE = 0.15$), $t(201) = 17.93$, $p < .001$, $d = 2.53$.

Motivation and responsiveness.

Main analysis. We ran a mixed-design ANCOVA with motivation condition (approach, avoidance) as a within-subject factor, closeness condition (high, low) as a between-subjects factor, age as covariate, and responsiveness as the dependent variable. We tested all main effects and all two-way and three-way interactions between motivation condition, closeness condition, and age. Replicating the findings of Study 1, responsiveness was lower in the avoidance condition ($M = 4.78$, $SE = 0.07$) compared to the approach condition ($M = 5.09$, $SE = 0.07$), $F(1, 199) = 10.51$, $p = .001$, $d = 0.46$ (see also Figure 1). None of the other main effects or interactions were significant, all $ps \geq .10$.

Exploratory analyses. As in Study 1, we explored whether the age-differential effect of the motivation scenarios on responsiveness followed a quadratic trend (for a visual inspection, see the plotted graphs in the supplemental material, Figure S3). We included in the previous ANCOVA model a quadratic function of age (built from a z-standardized variable) and its interaction with motivation condition. Motivation condition had a significant effect on responsiveness, $F(1, 197) = 49.48$, $p < .001$, $d = 1.00$. In addition, there was a significant interaction between $\text{Age}^2 \times \text{Motivation Condition}$, $F(1, 197) = 11.06$, $p = .001$, $d = 0.47$. None of the other effects were significant, all $ps \geq .05$.

To qualify the quadratic age-differential effect of motivation condition on responsiveness, we repeated the ANOVA with motivation condition and closeness condition in the predefined age groups (see Table 2). The effect of motivation condition on responsiveness was significant in all three groups: young adults: $F(1, 62) = 9.18$, $p = .004$, $d = 0.77$; middle-aged adults: $F(1, 67) = 43.47$, $p < .001$, $d = 1.61$; older adults: $F(1, 68) = 4.03$, $p = .049$, $d = 0.49$. We also explored

whether age affected responsiveness in the approach or the avoidance condition. Neither the linear nor the quadratic age effect was significant in either motivation condition ($ps \geq .19$).

Responsiveness and subjective well-being. Using regression analysis, we found a positive association of responsiveness and situational well-being, $\beta = .45, p < .001, R^2 = .20$. The association remained significant after including age group, closeness condition, and motivation condition as predictors, $\beta = .43, p < .001, \Delta R^2 = .12$. The mediation analysis with responsiveness as a mediator of the effect of motivation condition on subjective well-being yielded a significant partial mediation effect of $R^2 = .06, 95\% \text{ CI } [.02, .10]$ (see supplemental materials, Figure S4).

Discussion

Study 2 largely replicated the findings of Study 1 in an independent sample using different stimuli and measures of responsiveness. Even when all participants imagined the same social situations, when they were thinking about the same person in all scenarios, and when responsiveness was assessed by a different method than in Study 1, social avoidance (compared to approach) motivation resulted in lower levels of responsiveness. As in Study 1, the age-differential effect followed a quadratic trend, indicating that the effect is strongly driven by the group of middle-aged adults. However, the effect was significant in all age groups and the age differences did not reach significance in either motivation condition. Relationship closeness did not moderate the effects, supporting the findings of Study 1 that the effects of approach and avoidance motivation on responsiveness are similar across very different social relationships. Again, responsiveness was positively related to subjective well-being.

One shortcoming of both Studies 1 and 2 is that social approach and avoidance motivation are potentially confounded by situation valence (approaching *positive* vs. avoiding *negative* social outcomes). Although the manipulation checks revealed the expected effects of motivation condition on self-reported approach and avoidance motivation, we cannot rule out the possibility

that the effects of motivation condition on responsiveness (not only) originate from motivation, but (also) from the situation valence. Although, to our knowledge, there is no empirical evidence showing that positive compared to negative social interactions result in more responsiveness (see also Winczewski et al., 2016), one could assume that people are more responsive in positive situations because they feel more secure. Feeling secure, in turn, is associated with responsive behavior (Lemay, Clark, & Feeney, 2007). The confound between motivation and situation valence may be very natural in real-life situations (i.e., most people usually approach positive, not negative social outcomes, and avoid negative, not positive social outcomes). However, for our understanding of the motivational origins of responsiveness, it is important to disentangle the effect of motivation from the effect of situation valence. Study 3 addressed this issue by manipulating situation valence and by testing how much of the variance in responsiveness is additionally explained by self-reported social approach and avoidance motivation.

Study 3: Daily Social Situations

Study 3 investigated the association between social motivation and responsiveness in people's daily social lives. In a diary, the participants recalled the most positive and the most negative interpersonal situation of the day and then reported their social approach and avoidance motivation in these two situations. We expected that the participants report higher approach motivation in the most positive situation because positive interpersonal situations have to be actively approached (Gable, 2006). In contrast, we expected that the participants report higher avoidance motivation in the most negative situation because most people automatically avoid negative experiences (Frijda & Mesquita, 1994). In addition, we hypothesized that positive compared to negative situations are associated with a higher level of self-reported responsiveness. Finally, we hypothesized that self-reported approach motivation is associated positively, whereas self-reported avoidance motivation is associated negatively with responsiveness, regardless of the

valence of the situation. As in the previous studies, we tested for linear and quadratic age-differential effects. Because relationship closeness did not moderate the effects of the motivations in Studies 1 and 2, we did not manipulate relationship closeness in Study 3. However, we statistically controlled for self-reported relationship closeness.

Method

Participants. The sample consisted of $N = 744$ participants aged 18–83 years ($M = 49.28$ years, $SD = 16.50$ years; $n = 239$ young, $n = 253$ middle-aged, and $n = 252$ older adults). Among them, 48.3% were female and 65% reported being in a stable relationship. The participants completed a total of 4,202 diaries with an average of $M = 5.65$ ($SD = 1.79$) diaries per person (for more information about the sample, see Nikitin & Freund, 2018). A power analysis for a linear multiple regression with two predictors and two covariates, using an α -error probability of 0.05, a power ($1-\beta$ error probability) of 0.8, and a sample size of $N = 744$, revealed that Study 3 was sufficiently powered to find an effect size of $d = 0.02$. We recruited the participants using an online recruitment service.

Procedure. After giving informed consent, the participants completed a questionnaire assessing socio-demographic information. Approximately one week later, we asked the participants to fill out an online diary on seven consecutive days (beginning on Monday). On each day, the participants reported the most positive and the most negative social interaction they had experienced in the past 24 hours. A social interaction was defined as any encounter with one or more other person(s), in which the persons interacted with each another. The mere presence of another person was not included in this definition. The participants reported with whom they had interacted and how close the person (or people) in the interaction was (were) to them. In addition, the participants reported their social approach and avoidance motivation and subjective well-

being in each of the two situations. As is true for all reported response scales (unless stated otherwise), the response scales ranged from 0 (*not at all*) to 6 (*very much*).

Assessment of motivation, responsiveness, and subjective well-being. The participants were asked to recall the most positive and the most negative interpersonal situation of the last 24 hours and to describe it in writing, in the form of a short sentence. For each situation, the participants reported social approach and avoidance motivation: “Did you want to achieve something positive/avoid something negative in the situation?”. We assessed responsiveness using the same item as in Study 2. One item assessed subjective well-being: „How did you feel in the situation?“ (0 = *not happy/content at all*, 6 = *very happy/content*).

Control variables. We asked the participants to report relationship closeness with the person (or people) in the social situation: “How close was the relationship with the person(s) in the situation?” (1 = *very close*, 2 = *close*, 3 = *less close*, 4 = *it was a new contact*). We inverted the scale for the analyses so that higher numbers represent higher level of relationship closeness. In addition, we controlled for self-reported intensity of the situation in the analyses. For the most positive situation, the item assessing situation intensity read: “How positive was the situation?” (0 = *only somewhat positive*, 6 = *very positive*). For the most negative situation, it read: “How negative was the situation?” (0 = *only somewhat negative*, 6 = *very negative*). People can differ substantially in the intensity of the situations they experience during the day. For example, older adults may experience fewer and less negative social situations than other age groups (Brose, Scheibe, & Schmiedek, 2013). This difference may confound the participants’ reports on social motivation, responsiveness, or subjective well-being.

Data-analytical approach. Because the data were nested within different levels (Level 1 = situations, Level 2 = persons), we used multilevel modeling to test the hypotheses (e.g., Tabachnick & Fidell, 2001). The random intercept and random slope model yielded similar

results as the random intercept model. For the sake of parsimony, we decided to run the simpler model. We used the Maximum Likelihood Method for the derivation of the estimates (see Raudenbush & Bryk, 2002). Data were analyzed with the linear mixed-models procedure of SPSS Statistics Version 23. We adopted a subgroup-analysis approach to probe age-differential effects (using the predefined three age groups). In all analyses, we controlled for relationship closeness and situation intensity.

Results

Situation valence and motivation. We ran a linear mixed-model analysis with situation valence as predictor of social approach and avoidance motivation. Situation valence was included in the model as a dummy variable (1 = most positive, 2 = most negative social interaction of the day). Approach motivation was significantly lower in the most negative (aggregated $M = 2.21$, $SE = 0.04$) than in the most positive situation (aggregated $M = 3.77$, $SE = 0.03$), $b = -0.91$, $SE = 0.04$, 95% CI [-0.98, -0.83], $t(7,667) = -23.45$, $p < .001$. Avoidance motivation was significantly higher in the most negative (aggregated $M = 2.88$, $SE = 0.03$) than in the most positive situation (aggregated $M = 2.21$, $SE = 0.04$), $b = 0.67$, $SE = 0.04$, 95% CI [0.59, 0.74], $t(7,676) = 16.25$, $p < .001$.

Motivation and responsiveness.

Experimental evidence. First, a linear mixed-model analysis revealed that situation valence (1 = most positive, 2 = most negative social interaction of the day) was a significant predictor of responsiveness, $b = -0.83$, $SE = 0.04$, 95% CI [-0.91, -0.75], $t(8,067) = -21.30$, $p < .001$. Participants reported lower levels of responsiveness in the most negative (aggregated $M = 2.73$, $SE = 0.03$) than in the most positive situation (aggregated $M = 4.54$, $SE = 0.03$; see also Figure 1).

As a next step, we included age and its interaction with situation valence in the model. Age did not predict responsiveness directly ($p = .80$), but it moderated the effect of situation valence on responsiveness, $b = 0.01$, $SE = 0.002$, 95% CI [0.002, 0.01], $t(7,701) = 2.87$, $p = .004$ (see the plotted data in Figure S5 of the supplemental material). The interaction of $\text{Age}^2 \times \text{Situation Valence}$ was not significant ($p = .15$). To qualify the interaction of $\text{Age} \times \text{Situation Valence}$, we split the sample by the predefined age category (young, middle-aged, and older adults) and reran the analyses in each age group separately. The effect of situation valence on responsiveness was significant in all three age groups (young adults: $b = -0.88$, $SE = 0.07$, 95% CI [-1.01, -0.75], $t[2,477] = -13.39$, $p < .001$, middle-aged adults: $b = -0.96$, $SE = 0.07$, 95% CI [-1.09, -0.83], $t[2,718] = -14.27$, $p < .001$, older adults: $b = -0.63$, $SE = 0.07$, 95% CI [-0.76, -0.50], $t[2,877] = -9.19$, $p < .001$; see Table 2). To further explore the interaction of $\text{Age} \times \text{Situation Valence}$, we split the sample by situation valence and tested the associations between age and responsiveness in the most positive and the most negative situation separately. Age predicted responsiveness in both situations (positive situation: $b = 0.07$, $SE = 0.02$, 95% CI [0.03, 0.12], $t[714] = 3.14$, $p = .002$; negative situation: $b = 0.09$, $SE = 0.04$, 95% CI [0.01, 0.18], $t[743] = 2.15$, $p = .03$). Subgroup analyses revealed that, compared to younger adults, older adults reported higher level of responsiveness in both situations (positive situation: $b = 0.09$, $SE = 0.03$, 95% CI [0.03, 0.14], $t[481] = 3.15$, $p = .002$; negative situation: $b = 0.13$, $SE = 0.05$, 95% CI [0.03, 0.24], $t[501] = 2.59$, $p = .01$) and they did not significantly differ from middle-aged adults in either situation ($ps \geq .20$). Young and middle-aged adults differed in the most positive situation ($b = 0.16$, $SE = 0.06$, 95% CI [0.05, 0.27], $t[483] = 2.77$, $p = .006$), but not in the most negative situation ($p = .28$). The quadratic effect of age on responsiveness was not significant in either situation ($ps \geq .38$).

Correlational evidence. First, we ran a model with self-reported social approach and avoidance motivation as predictors of responsiveness. As expected, approach motivation was positively and avoidance motivation was negatively associated with responsiveness (approach motivation: $b = 0.31$, $SE = 0.01$, 95% CI [0.29, 0.33], $t[8,396] = 32.37$, $p < .001$; avoidance motivation: $b = -0.03$, $SE = 0.01$, 95% CI [-0.05, -0.02], $t[8,364] = -3.90$, $p < .001$). In the next step, we included situation valence in the model to test whether self-reported approach and avoidance motivation predicted responsiveness beyond the effect of the situation valence. Whereas approach motivation remained a significant positive predictor of responsiveness, $b = 0.29$, $SE = 0.01$, 95% CI [0.27, 0.31], $t(8,401) = 30.77$, $p < .001$, avoidance motivation turned from a negative to a positive predictor, $b = 0.02$, $SE = 0.01$, 95% CI [0.01, 0.04], $t(8,377) = 2.65$, $p = .008$. In other words, both motivations predicted higher level of responsiveness. Age did not moderate these associations ($ps \geq .34$).

Explorative analyses. To explore whether the relationship between the motivations and responsiveness was moderated by situation valence, we conducted a model with self-reported approach and avoidance motivation, situation valence, and the two-way interactions (Approach Motivation \times Situation Valence, Avoidance Motivation \times Situation Valence) as predictors of responsiveness. Both the relationship between approach motivation and responsiveness and the relationship between avoidance motivation and responsiveness were moderated by situation valence (Approach Motivation \times Situation Valence: $b = 0.04$, $SE = 0.02$, 95% CI [0.001, 0.07], $t[8,183] = 2.04$, $p = .042$; Avoidance Motivation \times Situation Valence: $b = 0.05$, $SE = 0.02$, 95% CI [0.02, 0.08], $t[8,161] = 2.88$, $p = .004$). The relationships between the motivations and responsiveness were stronger in the most negative than in the most positive social situation (approach motivation in the positive situation: $b = 0.15$, $SE = 0.01$, 95% CI [0.13, 0.17], $t[4,041] = 15.47$, $p < .001$; approach motivation in the negative situation: $b = 0.31$, $SE = 0.01$, 95% CI

[0.28, 0.34], $t[4,196] = 20.84, p < .001$; avoidance motivation in the positive situation: $b = 0.03, SE = 0.01, 95\% CI [0.02, 0.05], t[3,854] = 3.88, p < .001$; avoidance motivation in the negative situation: $b = 0.11, SE = 0.01, 95\% CI [0.09, 0.14], t[4,191] = 7.77, p < .001$).

Responsiveness and subjective well-being. We ran a linear mixed-model analysis with responsiveness as predictor of subjective well-being in the situation. Responsiveness and subjective well-being were positively correlated, $b = 0.50, SE = 0.01, 95\% CI [0.48, 0.52], t(8,370) = 46.86, p < .001$. The association remained significant after the inclusion of situation valence and age in the model, $b = 0.39, SE = 0.01, 95\% CI [0.38, 0.41], t(8,397) = 40.77, p < .001$. Responsiveness accounted for $R^2 = .23$ (95% CI [.21, .24]) of the effect of situation valence on subjective well-being (detailed results of the mediation analysis are reported in the supplemental material, Figure S6).

We also explored whether self-reported approach and avoidance motivation predict subjective well-being. Whereas approach motivation was positively associated with subjective well-being ($b = 0.20, SE = 0.01, 95\% CI [0.18, 0.22], t[8,394] = 18.74, p < .001$), avoidance motivation was negatively associated with subjective well-being ($b = -0.22, SE = 0.01, 95\% CI [-0.24, -0.20], t[8,358] = -23.48, p < .001$). These associations remained significant after including relationship closeness, situation intensity, age, and responsiveness in the model (approach motivation: $b = 0.04, SE = 0.01, 95\% CI [0.02, 0.06], t[8,392] = 4.12, p < .001$; avoidance motivation: $b = -0.11, SE = 0.01, 95\% CI [-0.12, -0.09], t[8,395] = -13.86, p < .001$).

Discussion

Replicating the results of Studies 1 and 2, Study 3 showed that social avoidance motivation (induced through the recall of the most negative social interaction of the day) results in lower levels of responsiveness than approach motivation (induced through the recall of the most positive social interaction of the day). As in the previous two studies, responsiveness was

positively associated with subjective well-being in Study 3. Different to the previous two studies, Study 3 allowed us to explore the role of social approach and avoidance motivation for responsiveness regardless of the valence of the situation. Both self-reported approach and avoidance motivation were positively associated with responsiveness, even when controlling for the positive or negative valence of the situation. The associations between the motivations and responsiveness were even stronger in the most negative than in the most positive situation. Despite its positive association with responsiveness, avoidance motivation was negatively associated with subjective well-being. This suggests that a higher avoidance motivation makes people more responsive but less happy, whereas a higher approach motivation makes people both more responsive and happier. Age moderated the effect of the valence of the situation on responsiveness, but not the association of social approach and avoidance motivation on the one hand and responsiveness on the other. The strengths of the associations between social approach and avoidance motivation and responsiveness was similar across all three age groups.

General Discussion

Three experiments using different methods demonstrated that social approach and avoidance motivation affects responsiveness. Whether thinking of a recently experienced social situation (Study 1), imagining scenarios of social situations (Study 2), or reporting daily social situation (Study 3), the participants were more responsive towards their interaction partners when they pursued social approach goals than when they pursued social avoidance goals. In other words, wanting a positive outcome in an interpersonal situation led people to care more about others' needs than avoiding a negative outcome. This was the case across different social situations and differently close relationships, suggesting that the effect is not only robust but may be based on a general underlying mechanism that is active across situations and persons.

The present research also demonstrates that it is important to disentangle motivation from the valence of the situation. Specifically, Study 3 showed that, different to negative situations, positive social situations were associated with higher levels of approach motivation, lower levels of avoidance motivation, and higher levels of responsiveness. At the same time, both self-reported approach and avoidance motivation were positively associated with responsiveness. It seems, then, that being highly socially motivated—be it approach or avoidance motivated—is related to being more responsive to the needs and feelings of social partners. This was particularly the case in negative social situations. In the following, we discuss these results and their possible relevance for future research.

Motivation and Valence

Social approach motivation is generally associated with positive social outcomes, whereas social avoidance motivation is generally associated with negative social outcomes (Gable & Berkman, 2008; Nikitin & Schoch, 2014). This is the case when approach and avoidance motivations are measured as dispositions and also—albeit rarely tested—when the motivations are induced by an experimental manipulation (Nikitin et al., 2014; Strachman & Gable, 2006). The present research added experimental evidence to these findings: Experimentally induced approach and avoidance motivation differently affected responsiveness to others' needs. This is not only in line with previous correlational research (Impett et al., 2010) but also suggests that responsiveness has motivational origins (Canevello & Crocker, 2010; Reis & Shaver, 1988; Winczewski et al., 2016). The present research goes a step further and aims to disentangle the effects of motivation and situation valence. Approach motivation and positive social situations, on the one hand, and avoidance motivation and negative social situations, on the other, are so tightly connected that some researchers argue that there is an evolutionary origin of the motivation-valence association (Kenrick & Shiota, 2008). However, in the present research, we

were able to disentangle motivation and situation valence, and provide evidence that situation valence and motivation are differentially associated with responsiveness. The dissociation was particularly evident for avoidance motivation.

We had not predicted the differential associations of social motivation and situation valence with responsiveness. Moreover, the associations of social motivation and responsiveness are correlative in our study. Thus, our interpretations have to be viewed with caution. It seems plausible that people who are highly responsive are also more sensitive and motivated to avoid threats to a social relationship because they very much value relationships with others (Crocker, Canevello, & Lewis, 2017). From this perspective, high avoidance and approach motivation both lead to being responsive to the needs and feelings of social partners, particularly in a difficult social situation. Further research is needed to test this hypothesis. We maintain that, compared to the approach of positive social outcomes (such as affiliation and acceptance), the avoidance of negative social outcomes (such as conflict or rejection) makes people less responsive to the needs of their social partners.

Social Motivation and Subjective Well-Being

The present studies suggest that responsiveness is an important mechanism linking social approach motivation to positive social outcomes and social avoidance motivation to negative social outcomes. Approach and avoidance motivation not only affected responsiveness, but responsiveness was also reliably associated with subjective well-being across all three studies. This association remained significant after controlling for such powerful predictors of subjective well-being as emotional intensity of the situation or relationship closeness. In addition, the results of the mediation analyses revealed responsiveness as a possible mediator of the effect of motivation on subjective well-being. Although we could not test the causality of the mediation, other empirical evidence supports the proposed causal direction. For example, in a longitudinal

study with university freshmen, compassionate goals (i.e., goals to support others) towards roommates led to more responsiveness, which, in turn, enhanced relationship satisfaction (Canevello & Crocker, 2010).

Despite its positive association with responsiveness, self-reported social avoidance motivation was negatively associated with subjective well-being. One possible explanation for this counterintuitive finding is that avoidance motivation is associated with focus on the negative aspects of the situation (e.g., Nikitin & Freund, 2014) and, thereby, leads to a negative experience of a given situation, irrespective of the level of responsiveness.

Motivation, Age, and Relationship Closeness

Although the effect of social motivation on responsiveness showed some age differences, the pattern was not consistent across the three studies. The age-differential effect of motivation on responsiveness was quadratic in Studies 1 and 2, but linear in Study 3. Although the findings suggest that the effects of approach and avoidance motivation on responsiveness are generally weaker in the older age group, older adults did not report higher level of responsiveness in the avoidance motivation condition than younger adults (as we had hypothesized). In addition, the associations between the self-reported motivations and responsiveness in Study 3 were not moderated by age, suggesting that the age-differential effects of the experimentally induced motivation are driven by other factors than differences in the motivations. Such factors may be older adults' stronger focus on positive compared to negative (social) information (Reed, Chan, & Mikels, 2014), better self-reported emotional regulation (Gross et al., 1997), or a generally stronger orientation towards other people (Freund & Blanchard-Fields, 2014). All of these factors may have attenuated the effects of the experimental manipulation. Future studies are needed to explore these factors more in depth. Our current state of knowledge is that the motivational

effects on responsiveness are generalizable across different age groups, albeit they seem to be weaker in older age.

Finally, the present studies add knowledge to the responsiveness literature by demonstrating that the motivational effects are not limited to a particular relationship but hold across different relationships (characterized by high vs. low relationship closeness). An interesting direction for future research is to investigate whether this effect is caused by similar processes across different relationships, as suggested by the attentional-breadth hypothesis. In fact, there is some evidence that this might be the case. For example, people whose attention was experimentally narrowed performed worse in a face-recognition task than people whose attention was broadened, suggesting that the former missed important social information (Macrae & Lewis, 2002).

Strengths and Limitations

The current research has several strengths such as the experimental design, the manipulation of approach and avoidance goals by different methods (retrospective, hypothetical, and daily social situations), assessment of responsiveness by both indirect (text analysis) and direct (self-report) methods, inclusion of different social contexts (social relationships characterized by high vs. low closeness), and inclusion of different age groups.

Despite these strengths, the studies also have several limitations. First, we did not assess people's responsive behavior. Although there is first evidence by Impett et al. (2012) for the link between social approach and avoidance goals and observed responsive behavior, the causality has to be tested. Second, the present findings are based on online studies with convenience samples, leaving open the question of generalizability of the results to other social groups. Third, although we could disentangle the effects of motivation from the valence of the situation for responsiveness, the findings on motivation are correlative, calling for a more stringent test of the

causality. It is generally difficult to keep the valence of the situation equal when manipulating social approach and avoidance motivation. However, there are some manipulations that are clearly disconnected from the social interaction (Nikitin et al., 2014). Future studies should replicate the present findings using these alternative manipulations.

Conclusions

Good social relationships contribute to psychological and physical well-being, whereas poor relationships undermine health as well as social and psychological well-being (Uchino, Cacioppo, & Kiecolt-Glaser, 1996). Relationship quality depends on perceived responsiveness in a given social relationship. When people perceive their interaction partners as responsive, they experience the relationship as more satisfying than when they perceive their interaction partners as non-responsive (Reis et al., 2004; Reis & Gable, 2015). Little is known about the origins of responsiveness. The present research establishes a connection of social approach and avoidance motivation on the one hand and responsiveness on the other. It thereby supports the notion that responsiveness has motivational underpinnings. It contributes to the previous research by illustrating the causal effect of motivation on responsiveness and by broadening its validity to different social relationships, different contexts, and different age groups. At the same time, it also demonstrates the malleability of the effect (e.g., its moderation by age, difference between induced and self-reported motivation). An interesting direction for future research is to investigate for whom and under what circumstances social approach and avoidance motivation lead to responsiveness.

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Table 1

Descriptive Statistics of Studies 1–3

	<i>n</i> items	<i>M</i>	<i>SD</i>	Range	Cronbach's α
Study 1					
Approach motivation	1	4.57	1.68	0–6	–
Avoidance motivation	1	4.28	1.99	0–6	–
Relationship closeness	1	3.29	2.14	0–6	–
Responsiveness	1	1.66	2.60	0–14.3	–
Subjective well-being	4	4.13	1.72	0–6	.91
Study 2					
Approach scenarios:					
Approach motivation	3	5.04	1.12	0–6	.84
Avoidance motivation	3	3.71	1.96	0–6	.88
Responsiveness	3	5.08	1.04	0–6	.87
Subjective well-being	3	3.18	0.66	0–6	.73
Avoidance scenarios:					
Approach motivation	3	4.51	1.18	0–6	.72
Avoidance motivation	3	4.51	1.40	0–6	.79
Responsiveness	3	4.77	1.07	0–6	.79
Subjective well-being	3	2.42	0.75	0–6	.79
Relationship closeness	1	3.94	2.04	0–6	–
Study 3					
Approach motivation	2	3.32	2.13	0–6	–
Avoidance motivation	2	2.55	2.26	0–6	–
Reponsiveness	2	3.63	2.09	0–6	–
Subjective well-being	2	3.30	1.99	0–6	–
Relationship closeness	2	1.24	1.13	1–4	–
Intensity of most positive social situation	2	4.82	1.46	0–6	–
Intensity of most negative social situation	2	2.43	2.00	0–6	–

Table 2

Age-Differential Effects of Social Approach and Avoidance Motivation Condition on Responsiveness in Studies 1–3

	Study 1			Study 2			Study 3		
	Young	Middle- Aged	Older	Young	Middle- Aged	Older	Young	Middle- Aged	Older
Approach	2.23 (.27)	3.07 (.38)	1.53 (.36)	4.95 (.12)	5.17 (.12)	5.15 (.11)	3.89 (.05)	4.07 (.04)	4.05 (.04)
Avoidance	0.78 (.31)	0.72 (.35)	1.47 (.40)	4.67 (.12)	4.65 (.12)	5.01 (.12)	3.04 (.05)	3.24 (.04)	3.45 (.04)

Note. Approach = approach condition. Avoidance = avoidance condition. Reported are group means and standard errors of the means (in parantheses). In Study 1, we controlled for pronoun rate. In Study 3, we controlled for relationship closeness and situation intensity.

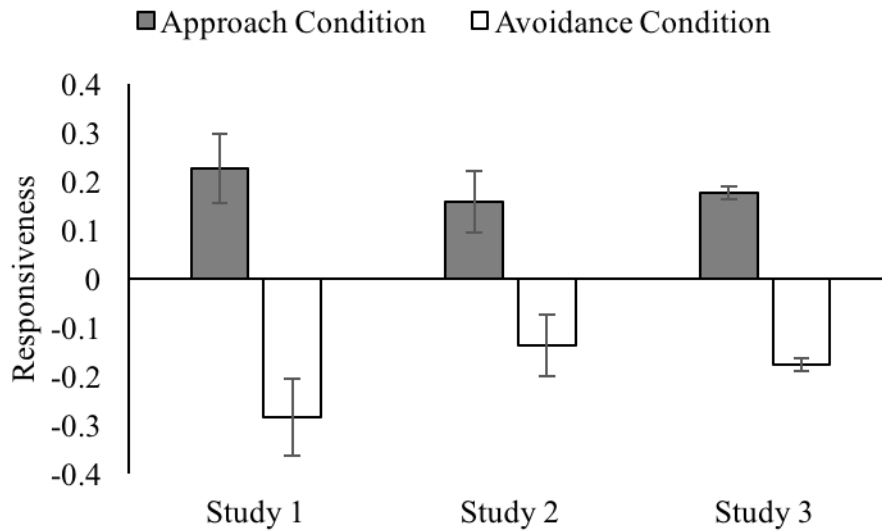


Figure 1. Responsiveness as a function of motivation condition in Studies 1–3. For better comparability between the studies, results of analyses are displayed with z-standardized variables. Error bars represent ± 1 standard error of the mean. Means are adjusted for the covariate (pronoun rate and age in Study 1; age in Study 2; and age, relationship closeness, and situation intensity in Study 3).