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Truth and Wishful Thinking: How Interindividual Differences in Communal Motives Manifest in Momentary Partner Perceptions

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Abstract: Although rooted in reality, partner perceptions often reflect wishful thinking due to perceivers' needs. Dispositional needs, or motives, can differ between persons; however, little is known about their differential associations with everyday partner perception. The present study used data from a 4-week experience sampling study (N = up to 60942 surveys from 510 individuals nested in 259 couples) to examine the effects of perceivers' partner-related implicit and explicit communal motives on the perception of (i) global communal partner behaviour and (ii) specific communal and uncommunal partner behaviours. The results of truth and bias models of judgement and quasi-signal detection analyses indicate that strong implicit communal approach motives and strong explicit communal motives are associated with the tendency to overestimate the partner's communal behaviour. Additionally, strong implicit communal approach motives were associated with the tendency to avoid perceptions of uncommunal partner behaviour. Neither implicit nor explicit communal motives had an effect on accuracy in the perception of particularly communal partner behaviour. The results highlight the relevance of both implicit and explicit communal motives for momentary partner perceptions and emphasise the benefits of dyadic microlongitudinal designs for a better understanding of the mechanisms through which individual differences manifest in couples' everyday lives. © 2019 The Authors. European Journal of Personality published by John Wiley & Sons Ltd on behalf of European Association of Personality Psychology

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From the very beginning of a romantic relationship, people seek to understand why their partner behaves the way he/she does. Communal behaviour appears to be of particular concern (Abele & Wojciszke, 2007). Previous research has corroborated not only its considerable relevance for relationship functioning but also for perceivers' motivation (Horowitz et al., 2006). However, partner perceptions oftentimes deviate from reality and reflect what people *wish* to perceive (Fletcher, 2015; Fletcher & Kerr, 2010). Perceivers may, for example, project their own motives onto the partner (Lemay, Clark, & Feeney, 2007; Sanderson & Cantor, 2001) or perceive and interpret social information provided by their partner's behaviour in ways that fit their own motives (e.g. Kenny & Acitelli, 2001; Murray, Holmes, & Griffin, 1996; Woike & Bender, 2009).

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Accurate and biased partner perceptions are supposed to have strong motivational roots (Fletcher & Kerr, 2010). However, little research has addressed the question how interindividual differences in motives are expressed in everyday partner perceptions. Using data from an intensive dyadic experience sampling study, the present investigation examined whether perceivers' communal motives moderate accuracy and bias in the perception of (i) global communal partner behaviour and (ii) specific communal and uncommunal partner behaviours. This in-depth investigation should not only advance knowledge on partner perception but also help to better understand how individual differences in communal motives manifest in people's everyday lives. In this regard, the present research takes up recent calls in personality psychology to focus on the cognitive, affective, and behavioural processes that characterise individual differences in personality dispositions (Back & Vazire, 2015; Baumert et al., 2017; Fleeson & Jayawickreme, 2015).

PARTNER PERCEPTION

Meta-analytical evidence suggests that partner perceptions reflect both reality and wishful thinking (Fletcher & Kerr, 2010). On the one hand, knowing the partner for who he/she really is may foster understanding and correct

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predictions of the partner's behaviour, altogether rendering couple interactions more harmonious. On the other hand, biased perceptions may lead people to overlook their partner's flaws, strengthen the conviction that their partner is the right one, and increase overall commitment to the relationship. What accurate and biased partner perceptions have in common, though, are their motivational roots (Fletcher & Kerr, 2010; Murray, 1999). Partner perceptions appear to serve partner-related communal goals, such as mutual understanding, harmonious interactions, and overall relationship longevity. However, little is known about their differential associations with perceivers' motives. The only study on the subject of motive perception in couples that we know of (Sanderson & Cantor, 2001) found that individuals' perceptions of their partner's intimacy goals are not only an accurate representation of their partner's actual goals but also positively biased by their own intimacy goals. This study, however, used a relatively small sample of 44 couples and exclusively addressed perceptual effects of perceivers' self-ascribed intimacy goals. It is yet unclear whether these findings apply to perceivers' implicit motives. In addition, Sanderson and Cantor (2001) only looked at perceptions of dispositional communal motives; therefore, the study tells us little about perceptual processes as they occur in couples' everyday lives.

As explicated in the following sections, we propose that perceivers' communal motives influence how they perceive and interpret motive-relevant social information provided in the moment by their partner's behaviour. After defining implicit and explicit communal motives, we elaborate on their perceptual functions and how they may guide partner perceptions.

PARTNER-RELATED COMMUNAL MOTIVES

Motives are defined as individual dispositions that orient, select, and energise behaviour to attain specific classes of incentives and avoid specific classes of disincentives (McClelland, 1987). Motive strength can differ between persons and life domains. In the domain of couple relationships, people may, for example, differ in the amount of communion and closeness they seek with their partner and how much pleasure they experience when they attain this incentive. Relying on the conceptualisation by Hagemeyer and colleagues (Hagemeyer & Neyer, 2012; Hagemeyer, Neyer, Neberich, & Asendorpf, 2013), we refer to these interindividual differences in the preference for closeness and unity with the partner as *partner-related communal motives*.

Partner-related communal motives are supposed to manifest in behaviour that is instrumental in establishing and maintaining communal experiences in the relationship, such as disclosure of feelings and thoughts, showing affection, engaging in warm and reciprocal interactions, or empathic concern. Previous research points to the generally positive associations between partner-related communal motives and relationship functioning. People with stronger partner-related communal motives were, for instance, found to be more satisfied with their relationship (Czikmantori, Hagemeyer, & Engeser, 2018; Hagemeyer, Neberich, Asendorpf, & Neyer, 2013; Hagemeyer, Neyer, et al., 2013; Hagemeyer, Schönbrodt, Neyer, Neberich, & Asendorpf, 2015; Zygar, Hagemeyer, Pusch, & Schönbrodt, 2018), have less disputes with their partner (Czikmantori et al., 2018; Hagemeyer et al., 2015), and even have a lower risk of relationship break-up (Hagemeyer, Neberich, et al., 2013).

Dual-system theories of motivation (McClelland, Koestner, & Weinberger, 1989; Schultheiss, 2001) propose a distinction between two kinds of motives. Explicit motives, on the one hand, refer to self-ascribed goals and values that are part of a person's motivational self-concept. On the other hand, implicit motives operate rather unconsciously and thus cannot be assessed by introspection. Instead, implicit motives are typically assessed indirectly via so-called projective techniques such as Picture Story Exercises (Schultheiss & Hale, 2007). Explicit and implicit motives are only weakly related (Köllner & Schultheiss, 2014; Spangler, 1992) and predict different outcomes. Whereas explicit motives appear to predict reflective behaviour (such as verbal communication), implicit motives seem to predict rather uncontrolled, spontaneous behaviour (such as non-verbal socialising; Hagemeyer, Dufner, & Denissen, 2016; McAdams, Jackson, & Kirshnit, 1984). Moreover, explicit need satisfaction is supposed to result from experiences that validate one's motivational self-concept and contribute to one's sense of meaning and inner coherence (Cantor & Malley, 1991), whereas implicit need satisfaction is supposed to be grounded in affective rewards (Brunstein, Schultheiss, & Grässman, 1998; Hofer & Busch, 2011).

PERCEPTUAL FUNCTIONS OF MOTIVES

Of note for the present research, explicit and implicit motives are supposed to operate through different information processing systems (Schultheiss, 2001; Stanton, Hall, & Schultheiss, 2010). The explicit motive system appears to be tied to propositional–reflective processing of preferably verbal symbolic cues (such as conversations, written words, or questions). The implicit motive system, by contrast, is supposed to operate through associative-affective networks that preferably process non-verbal cues (such as facial expressions of emotions, gestures, or touches). However, real-life partner behaviour mostly reflects a mix of both verbal and non-verbal cues and thus can engage both the perceiver's explicit and implicit motive systems. For example, a couple's intimate verbal communications (e.g. self-disclosure of personal feelings and thoughts) most likely come along with non-verbal signs of empathy, understanding, and appreciation (e.g. smiling and nodding). Also, despite their functional differences, explicit and implicit communal motives should aim for the same kind of motivational outcomes. According to motivation psychology, motives orient a person towards social information linked to incentives and away from social information linked to disincentives (McClelland, 1987).

In line with this notion, motives have been found to orient a person's attention towards situational cues that portend motive-specific incentives. For example, in a study by Schultheiss and Pang (2007), individuals with a stronger

implicit power motive more readily attended to facial expressions of submissiveness (conveying a power incentive; for similar, more recent results, see, e.g., Wang, Liu, & Yan, 2014; Wang, Liu, & Zheng, 2011). Schultheiss and Pang (2007) also found that individuals with stronger implicit affiliation motives more readily attended to faces expressing joy (conveying an affiliation incentive; see also Atkinson & Walker, 1956). Hence, a strong motive appears to enhance the overall sensitivity for social information with positive motivational relevance.

Further, motives seem to modulate the interpretation of and memory for motive-relevant social information. The stronger a person's motive, the more connections between situational cues and motive-specific incentives he/she appears to draw. For instance, an experiment by Woike (1994) found positive relations between implicit communal motive strength and communal interpretations of the social environment. Compared with participants with weaker communal motives, those with a strong communal motive were shown to draw more similarities and links between interacting persons and organise perceptual elements in a more integrative way stressing their interconnections.

In addition, people with strong implicit or explicit communal motives appear to better remember experiences involving social contact, friendship, or intimacy (e.g. McAdams, 1982; McAdams, Hoffman, Day, & Mansfield, 1996; Woike, 1994, 1995, 2008; Woike, Lavezzary, & Barsky, 2001; Woike, Mcleod, & Goggin, 2003). For instance, a diary study by Woike (1995) found that individuals with stronger implicit or explicit communal motives more likely remembered communal events (such as social contact or intimate exchanges with friends and family); these events, however, had to be personally relevant and charged with affect to be memorised. Similarly, in another study by Woike (1994), participants with stronger implicit or explicit communal motives named more communion-related events when asked to report significant autobiographical events (such as peak experiences or turning points).

Nonetheless, social perception may not only be affected by individuals' hope for positive motivational outcomes but also by their motivational fears. For example, the aforementioned study by Schultheiss and Pang (2007) additionally found that individuals with stronger implicit affiliation motives are more vigilant towards angry faces, supposedly because such faces signal social rejection (i.e. an affiliative disincentive). Moreover, individuals with a stronger communal motive seem to not only better remember positive communal experience but also negative ones (such as experiences of loneliness; Woike, 1994). In line with this duality, scholars (e.g. Carver & Scheier, 1990; Gable & Impett, 2012; Weinberger, Cotler, & Fishman, 2010) have argued for a distinction between approach and avoidance motivation. The basic idea of this distinction is that people can, in relation to a single motive domain, interindividually as well as intraindividually differ in their focus on the attainment of positive incentives (referred to as approach motives) or the avoidance of negative disincentives (referred to as avoidance motives), respectively. Approach and avoidance motives are considered distinct constructs that have different manifestations in social perception. Whereas people with strong approach motives seem to focus on social information linked with positive motivational outcomes (see previous paragraphs), people with strong avoidance motives seem to be more strongly concerned with motivational threats. For instance, individuals with stronger avoidance—but not approach—motives have been found to rate negative social events as more important (Gable, 2006) and to interpret neutral social information from hypothetical stories in a negatively biased manner (Strachman & Gable, 2006). The approach-avoidance distinction of motives can likewise be applied to partner-related communion (Hagemeyer & Neyer, 2012); that is, the broader need for communion can be divided into the two related but distinct motives to approach communal incentives (e.g. experiences of intimacy with the partner) and avoid communal disincentives (e.g. loneliness in the relationship), respectively.

COMMUNAL MOTIVES AND PARTNER PERCEPTION

In sum, there is evidence that people with different motive strength differentially attend to, interpret, and memorise motive-relevant social information. Likewise, individuals' communal motive strength should affect how they perceive and process social information provided by their partner's behaviour. We suppose that partner behaviour can have differential motivational relevance, depending on its incentive value. Communal partner behaviour, that is, behaviour that promotes closeness and intimacy in the relationship (such as showing affection, emphatic concern, or efforts to improve the relationship) should have strong communal incentive value, whereas uncommunal partner behaviour, that is, behaviour that promotes distance and loneliness in the relationship (such as ignorance or neglect), should have strong communal disincentive value (Hagemeyer & Neyer, 2012). Based on this notion, we derived the following predictions from the theorised perceptual functions of motives described previously.

First, we expected perceivers with a strong communal approach motive to be positively biased in their perception of their partner's communal behaviour. That is, they should systematically overestimate their partner's communal behaviour. As an example, they might more likely interpret their partner's phone calls as a welcome opportunity to establish contact (i.e. a communal incentive) instead of an unwelcome attempt of control, regardless of the partner's actual intent. Support for this notion can be found in research on partner perceptions of explicit communal motives, suggesting that people assume their partner's intimacy goals to be similar to their own (Sanderson & Cantor, 2001).

Second, we expected perceivers with a strong communal approach motive to demonstrate enhanced accuracy in the perception of their partner's momentary communal behaviour. They should readily attend to and remember when their partner behaves particularly communal (e.g. the partner being particularly responsive), because such behaviour points to the current attainability of closeness in the relationship

(i.e. a communal incentive). However, we also expected that perceivers with a strong communal approach motive would orient away from their partner's rather uncommunal behaviour (e.g. indifference or distance seeking), because such behaviour may pose barriers for the attainment of communal incentives. They may, for example, less likely detect their partner's uncommunal behaviour or reframe its meaning in a more positive (i.e. communal) light. Hence, we suggest that the influence of perceivers' implicit communal approach motives on perceptual accuracy is non-linear. When their partner behaves particularly communal, perceivers with a strong communal approach motive should achieve greater accuracy, compared with perceivers with a weaker motive. In turn, when their partner behaves in an uncommunal manner, their accuracy should be reduced to avoid communal disincentives.

By contrast, we expected perceivers with a strong communal avoidance motive to have a heightened orientation towards potential communal disincentives in their relationship. First, we expected perceivers with a strong communal avoidance motive to systematically overestimate their partner's uncommunal behaviour. Previous studies have, for example, shown that individuals with strong avoidance motives remember more experiences of insecurity in the relationship, compared with individuals with a weaker avoidance motive (Gable & Poore, 2008). Second, perceivers with a stronger communal avoidance motive should more accurately detect rather uncommunal partner behaviour (e.g. indifference or distance seeking), which points to communal disincentives such as loneliness or rejection by the partner. In line with this notion, research suggests that a strong communal avoidance motive is associated with a heightened reactivity to momentary negative partner behaviour (Kuster et al., 2015).

OVERVIEW OF THE PRESENT RESEARCH

The present study investigated how interindividual differences in implicit and explicit communal motives manifest in everyday partner perceptions. Participants reported their own and their partner's momentary behaviour five times per day for 4 weeks (total N = up to 60942 surveys from 510 individuals nested in 259 couples), allowing us to assess couples' perceptual processes in their naturalistic environments. Because our measures did not distinguish between verbal and non-verbal partner behaviour, we also examined whether implicit and explicit communal motives had additive effects on partner perception. Specifically, we focused on the implicit partner-related need for communion (pnCommunion) and the explicit desire for closeness. Previous studies have demonstrated the relevance of these motive dispositions for couples' communal behaviour, communal motivation, and relationship quality (e.g. Czikmantori et al., 2018; Hagemeyer et al., 2015; Hagemeyer, Neberich, et al., 2013; Hagemeyer & Neyer, 2012; Hagemeyer, Neyer, et al., 2013; Zygar et al., 2018). We further differentiated between implicit communal approach motives (pnCommunion Approach) and avoidance motives (pnCommunion Avoidance). Our measure of the explicit desire for closeness did not allow for the distinction between approach and avoidance tendencies. However, item wordings and evidence on the construct validity of the measure from prior studies (Hagemeyer, Neberich, et al., 2013; Hagemeyer, Neyer, et al., 2013; Zygar et al., 2018) indicate that the measure captures mainly communal approach motivation.

Two complementary sets of analyses were carried out, which focused on two different measures of (un)communal behaviour. In the first set of analyses, we examined the effects of perceivers' communal motives on their perceptions of their partner's *global* communal behaviour. We applied West & Kenny's (2011) truth and bias model (TBM), which is increasingly used in research on partner perception (e.g. Clark, von Culin, Clark-Polner, & Lemay, 2017; Muise, Stanton, Kim, & Impett, 2016; Overall, Fletcher, Simpson, & Fillo, 2015; Sadikaj, Moskowitz, & Zuroff, 2017, 2018). In the second set of analyses, we used a quasi-signal detection approach (QSDT; e.g. Gable, Reis, & Downey, 2003) to examine the influences of communal motives on the perception of *specific* communal and uncommunal partner behaviours. Although signal detection analyses are primarily used in experimental research (Macmillan & Creelman, 2005), they are increasingly adopted in naturalistic studies (e.g. Henry, Kobus, & Schoeny, 2011; Mast, Hall, & Ickes, 2006; McClure, Lydon, Baccus, & Baldwin, 2010). Prior research has primarily used QSDT analyses to examine the consequences of partner perceptions for relationship functioning (Finkenauer, Wijngaards-de Meij, Reis, & Rusbult, 2010; Gable et al., 2003; Reis, Maniaci, & Rogge, 2014, 2017; Visserman et al., 2018), whereas the present research addressed its motivational sources.

To our knowledge, no research has integrated both TBM and QSDT analyses in a single study. Doing so should contribute to a broader understanding of perceptual processes in couple relationships, as the two approaches use different operationalisations of communal behaviour. Whereas our TBM analyses assessed purely subjective judgements of global partner behaviour, our QSDT analyses focused on specific behaviours, which were assigned different communal meaning based on theoretical considerations.

Moreover, the different formats of the behaviour measures (continuous vs. dichotomous) allow for different models of accuracy and bias. For instance, whereas TBM measures of accuracy describe perceivers' ability to track relative changes in their partner's overall behaviour from moment to moment, QSDT understands accuracy as participants' ability to correctly identify specific behaviours their partner shows in a single situation. If results converge across the two different analyses and operationalisations of communal behaviour, this would corroborate their generalisability.

METHOD

The data used in the present investigation are accessible as a scientific usefile (Zygar-Hoffmann, Hagemeyer, Pusch, & Schönbrodt, in press). Detailed descriptions of all used measures and reproducible analysis scripts are accessible online at https://osf.io/cbsgq/. All analyses were conducted in R

(R Core Team, 2019), using the following packages: lme4 (Bates, Mächler, Bolker, & Walker, 2015), psych (Revelle, 2018), psycho (Makowski, 2018), and MuMIn (Barton, 2018). Several aspects of our study were preregistered (see https://osf.io/fhtw5/). We will explicitly highlight when this was the case. All other aspects (including the main hypotheses and analyses) were not preregistered.

Participants and procedure

Heterosexual couples were recruited in 2017/2018 via email lists, online advertising, and distribution of flyers at a German university and the offices of couple counsellors. Study participation was divided into two parts. First, participants and their partners completed an entry questionnaire set up via the formr survey framework (R. C. Arslan, Walther, & Tata, 2019; R. C. Arslan & Tata, 2017). Second, after completing the entry questionnaire, participants were asked to install an experience sampling application on their mobile phones. Starting on the subsequent Monday after the first login, participants reported their momentary behaviour and experiences via this application five times per day for a period of 4 weeks. Survey invitations were sent everyday within a fixed period of 10 to 16 hours, that couples scheduled beforehand.

The first four surveys per day were scheduled semirandomly (i.e. approximately evenly throughout the day but with varying time points) to avoid expectancy effects. The invitation to the evening survey was sent at a fixed time. Both partners of a couple received the invitations at the same time but were instructed to complete the surveys on their own and not to discuss any answers with each other. Single surveys were accessible for 45 minutes after invitation (5 hours for the evening survey, because participants were instructed to finish it before going to bed). Median completion time was 2.70 minutes. As compensation, participants received a feedback about their results and a financial compensation of up to €170 per couple (depending on the total number of surveys they completed).

The present study was part of a larger research project on the dynamics of motive dispositions in couple relationships. In planning this project, we aimed for a sample size of 250 couples for two reasons: First, we wanted to ensure at least 80% power to detect effects of average size in psychological research (r = .21; Richard, Bond, & Stokes-Zoota, 2003) on the couple level, which requires at least 175 couples. Second, the maximum sample size was constrained by funding limits regarding monetary compensation for participants. Formal power analyses would require *a priori* estimates about the expected effect sizes as well as (co)variances in the complex dyadic experience sampling data. Given the unexplored nature of our research questions, such estimates were not available. In total, 576 individuals started the study. According to preregistered criteria (see https://osf.io/fhtw5/), 66 participants were excluded from the analyses because they either did not participate in the experience sampling (n = 22) or failed to complete at least one third of their experience sampling surveys (n = 44). In addition, we excluded experience sampling surveys that were collected at night-time because of a software error (n = 26), answered in less than 1 min (n = 1855), or discussed with the partner (n = 171). The resulting sample comprised 510 participants (50.2% female) from 259 couples. Participants were, on average, 31.40 years old (SD = 9.54, range = 18 to 68 years) and in the relationship with their current partner for 6.43 years (SD = 6.43, range = 2 months to 33.17 years). The majority of participants had no children (32% had one to four children), and 327 participants (64%) had a high school degree (German Abitur) or a higher educational degree. Mean response rate during experience sampling was 87.81% per person and 76.53% per couple (referring to surveys that both couple members responded to), providing data from N = up to 60 942 daily surveys admissible to analyses.

Measures

Implicit partner-related need for communion.
Participants' implicit pnCommunion was assessed in the entry questionnaire, using the Partner-Related Agency and Communion Test (PACT; Hagemeyer & Neyer, 2012). Participants were presented a sequence of eight ambiguous pictures depicting social situations as either line drawings or blurred photographs. For each picture, participants were instructed to invent an imaginative story about a situation in romantic relationships and, after indicating the respective protagonist, elaborate on their story by answering three questions: 'What is important to the person in this situation, and what is he/she doing?', 'How is the person feeling in this situation, and how are his/her feelings for his/her partner?', and 'Why is the person feeling this way?'. Two out of five trained coders were randomly assigned to each case and independently scored the answers for the frequency of communal approach and avoidance motive imagery as outlined in the scoring rules (Hagemeyer & Neyer, 2012). Participants with more than two missing PACT tasks (n = 1) were excluded from the analyses. Whereas approach imagery focused on communal incentives such as closeness or shared experiences with the partner (six categories), avoidance imagery focused on communal disincentives as reflected in feelings of loneliness and rejection by the partner (one category). Ambiguous cases were resolved by discussion among all coders. For both coders per case, sums of all communal approach and avoidance categories, respectively, across the eight pictures were computed. Interrater agreement was high, ICC_{approach} (1, 2) = .97, $ICC_{\text{avoidance}}$ (1, 2) = .93. Raw motive scores were computed by averaging the number of communal categories across the two coders, separately for approach motives and avoidance motives. The raw scores were positively correlated with word count (M = 341, SD = 141), r_{approach} = .33, $r_{\text{avoidance}}$ = .14. Because word count can be an indicator of verbal fluency or other constructs distinct from implicit motives, it was partialed out in the total sample using a robust regression approach (Schönbrodt et al., 2019). The residualised implicit motive scores were used for further analyses.

Explicit partner-related desire for closeness.
Participants' explicit partner-related desire for closeness was measured in the entry questionnaire with the ABC

questionnaire of social desires (Hagemeyer, Neyer, et al., 2013). Previous studies have demonstrated the good psychometric qualities of this measure and its validity as a measure of dispositional communal motives (Czikmantori et al., 2018; Hagemeyer, Neberich, et al., 2013; Hagemeyer, Neyer, et al., 2013; Zygar et al., 2018). On a scale ranging from 1 = *never* to 7 = *always*, participants rated how often they usually experience appetitive states (4 items, e.g., 'I like being very close to my partner') and aversive states (4 items, e.g. 'I feel uncomfortable in the presence of my partner') related to closeness with their partner. An average score across all appetence and aversion (reversed) items was computed to reflect participants' dispositional tendency to approach partner-related communion. Internal consistency was high for both women (α = .92) and men (α = .85).

Global momentary communal behaviour.
Self-report. In the experience sampling surveys, participants' own global behaviour towards their partner was assessed with an interpersonal circumplex (IPC) grid. Similar single-item instruments have been shown to be reliable and valid measures of (perceived) interpersonal behaviour (Erickson, Newman, & Pincus, 2009; Fournier, Moskowitz, & Zuroff, 2008; Moskowitz & Zuroff, 2005; Sadikaj et al., 2017). The IPC grid was presented on the touchscreen of participants' mobile devices. By tapping on a position in this grid, participants indicated the extent of their communal (x-axis; continuously ranging from 0 = *rejecting* to 1 = *friendly*) and agentic (y-axis; continuously ranging from 0 = *unobstrusive* to 1 = *dominant*) behaviours toward their partner since the last survey. For the present analyses, the positions on the communion axis were extracted as indicators of participants' global communal behaviour. To facilitate interpretation, the raw scores were multiplied by 10 so that possible values could range between 0 and 10.
Partner perception. Perceptions of the partner's global communal behaviour were assessed analogously to self-reported global behaviour. Participants were asked to rate their partner's agentic and communal behaviours towards themselves by tipping on a position in an IPC grid. Raw communal behaviour values were extracted and multiplied by 10.

Specific momentary communal and uncommunal behaviours.
Self-report. Specific communal and uncommunal behaviours towards the partner were assessed with multiple choice items. Participants indicated whether they had engaged in one or more of a set of different behaviours since the last survey (coded as 1 = *behaviour occured* and 0 = *behaviour did not occur*). Based on an *a priori* discussion among the four authors (see preregistration at https://osf.io/fhtw5/), the single behaviours were weighted according to their communal (signalling communal incentives) or uncommunal (signalling communal disincentives) meaning. Communal behaviours included *affection*, *admiration*, *teasing*, *sacrificing*, *supporting*, *asking about feelings and thoughts*, and *particularly high regard*. Uncommunal behaviours included *disinterest or ignorance* and *particularly low regard*. Exact wordings of these behaviour items are presented online at https://osf.io/cbsgq/. The communal and uncommunal behaviours have been pretested in a pilot study (Zygar et al., 2018), which demonstrated their positive associations with momentary communal motivation.
Partner perception. Participants' perceptions of their partner's specific communal and uncommunal behaviours were assessed analogously to their self-reported behaviours. In each experience sampling survey, they could pick one or more of a list of specific communal and uncommunal behaviours that their partner had shown towards them.

Analysis strategy

Truth and bias model of judgement.
To examine how interindividual differences in communal motives influence the perception of global communal partner behaviour, we conducted dyadic multilevel analyses using West and Kenny's (2011) truth and bias model of judgement. The dyadic experience sampling data had a three-level structure, comprising up to 140 surveys (Level 1) for each member (Level 2) of a couple (Level 3). However, because there were only two members per couple, no random variability could be estimated at Level 2. Instead, the conceptual three levels can be accounted for with a two-level statistical model, with the lower level representing within-person variation and the upper level modelling between-person variation across couples. Within-person and between-person variation in male and female couple members' measures were estimated by including participants' sex (coded as −1 = *male* and 1 = *female*) as fixed and random effect. In all models, intercepts and Level 1 effects of all focal predictors were allowed to vary across couples to reduce the likelihood of Type I error (Barr, Levy, Scheepers, & Tily, 2013). Relationship duration (grand mean centred across couples) was included as a Level 2 covariate in all analyses. To control for systematic changes in partner perceptions over time and during weekends, survey number and time of the week (0 = *weekday*, 1 = *weekend*) were included as Level 1 covariates. As described in the following sections, we fitted the multilevel models in a step-wise procedure with increasing numbers of predictors. The respective model extension was favoured over the simpler model if it resulted in a better fit to the data, as indicated by a significant $\Delta\chi^2$ statistic and a decrease in Akaike Information Criterion (AIC) greater than or equal to 4 (Burnham & Anderson, 2002; Burnham, Anderson, & Huyvaert, 2011). To enhance parsimony, added predictors were discarded if they did not produce a better model fit. All analyses were based on complete couples. Due to missing values in predictor or outcome variables (e.g. when only one partner of a couple responded to a single survey), effective *n* was 40903 surveys in all TBM analyses.
Step 1: baseline model. The baseline model was specified as follows (covariates not displayed):

$$\begin{aligned} \mathrm{P}_{ij} = {} & b_{0j} + b_{1j}\ \text{partner's communal behaviour}_{ij} \\ & + b_{2j}\ \text{perceiver's communal behaviour}_{ij} + \epsilon_{ij} \end{aligned} \quad (1)$$

At each time point (i.e. survey) *i*, perceiver *j*'s perception of the partner's communal behaviour (P) was explained by

an intercept (b_0), the partner's actual reported momentary communal behaviour (b_1), the perceiver's own self-reported momentary communal behaviour ($b2$), and random error (ϵ). Following West and Kenny's (2011, p. 374) recommendations, perceptions of the partner's communal behaviour were centred on the person-mean of the partner's actual reported communal behaviour across all surveys (person-mean centering). Because of this centering, the intercept (b_0) can be interpreted in terms of mean-level bias, that is, the extent to which perceivers typically overestimate or underestimate their partner's communal behaviour. A significant negative intercept indicates that perceivers systematically underestimate their partner's communal behaviour; a significant positive intercept indicates systematic overestimation.

The two predictor variables were likewise centred on the person-mean of the partner's actual reported communal behaviour across all surveys (West & Kenny, 2011). Due to this centering, the association between the partner's actual and perceived behaviour (b_1) assesses the degree to which perceivers can correctly track fluctuations of the partner's communal behaviour over time (referred to as tracking accuracy). A significant positive effect indicates that perceivers can accurately track changes in their partner's communal behaviour from situation to situation. Finally, we controlled for assumed-similarity bias by including perceivers' self-reports of their own communal behaviour (b_2) to obtain undistorted estimates of mean-level bias and tracking accuracy (Kenny & Acitelli, 2001; West & Kenny, 2011). Assumed-similarity bias was allowed to vary across couples ($b_{2j} = \gamma_{20} + \mu_{2j}$).

Step 2: Effect of partner's squared communal behaviour. As described earlier, we assumed that the effects of communal motives on tracking accuracy would differ when the partner behaves more compared with less communal than usual. To test this assumption, it was first necessary to allow general tracking accuracy to vary depending on the levels of the partner's actual communal behaviour. To do so, a quadratic effect of the partner's actual communal behaviour (b_3 in Equation (2)) was added to the baseline model:

$$\begin{aligned} \mathrm{P}_{ij} = {} & b_{0j} + b_{1j}\,\text{partner's communal behaviour}_{ij} \\ & + b_{2j}\,\text{perceiver's communal behaviour}_{ij} \\ & + b_{3j}\,\text{partner's communal behaviour}^2_{ij} + \epsilon_{ij} \end{aligned} \quad (2)$$

Steps 3 to 5: Moderation of mean-level bias and tracking accuracy by communal motive strength. Next, we extended the model by including moderation effects of perceivers' communal motives on their mean-level bias (Step 3) and tracking accuracy (Steps 4 and 5). These model extensions were carried out in three separate models, using perceivers' pnCommunion Approach, pnCommunion Avoidance, and explicit desire for closeness, respectively, as moderators. In the following, we refer to communal motives as a substitute for all three motives.

In the third step, mean-level bias (b_0) was used as a dependent variable at the between-person level and predicted by perceivers' communal motives:

$$b_{0j} = \gamma_{00} + \gamma_{01}\text{Perceiver's communal motive}_j + \mu_{0j} \quad (3)$$

In Equation (3), γ_{00} refers to the general mean-level bias in the perception of the partner's communal behaviour across all participants. Coefficient γ_{01} describes the association between mean-level bias and perceivers' communal motive strength. A significant positive coefficient indicates that perceivers with a stronger communal motive typically view their partner's behaviour to be more communal than it actually is. Interindividual differences in mean-level bias that cannot be explained by perceivers' motives are captured by the couple-specific error term μ_{0j}.

In Steps 4 and 5, the linear (b_1) and quadratic (b_3) components of tracking accuracy, respectively, were predicted by perceivers' communal motives:

$$b_{1j} = \gamma_{10} + \gamma_{11}\text{Perceiver's communal motive}_j + \mu_{1j} \quad (4)$$

$$b_{3j} = \gamma_{30} + \gamma_{31}\text{Perceiver's communal motive}_j + \mu_{3j} \quad (5)$$

In Equations (4) and (5), γ_{10} and γ_{30} refer to the general degree of tracking accuracy across all participants. The effects of perceivers' motives on tracking accuracy were estimated by the cross-level interaction coefficients γ_{11} and γ_{31}. Random variation of tracking accuracy across couples is represented by the error terms μ_{1j} and μ_{3j}.

Previous research using the TBM in a variety of different research contexts (e.g. Muise et al., 2016; Overall et al., 2015; Overall, Clark, Fletcher, Peters, & Chang, 2019; Sadikaj et al., 2018) has generally reported small to moderate effect sizes for mean-level bias and tracking accuracy and moderate to large effect sizes for assumed-similarity bias. In comparison, the reported effects of cross-level interactions with perceivers' stable characteristics appear small in magnitude. According to a simulation study by Mathieu, Aguinis, Culpepper, and Chen (2012), the power to detect cross-level interactions more strongly depends on the Level 1 sample size compared with the Level 2 sample size. The current study used data from up to 140 surveys from 502 participants, resulting in considerably larger power on both levels compared with previous studies applying the TBM.

Quasi-signal detection analyses. To examine the effects of communal motives on the perception of the partner's specific communal and uncommunal behaviours, we adopted a quasi-signal detection approach (Gable et al., 2003; Macmillan & Creelman, 2005). In each experience sampling survey, participants reported whether they had shown any of the nine different communal and uncommunal behaviours towards their partner, and whether their partner had shown these behaviours towards them, since the previous measurement. For each behaviour and each survey of the experience sampling, the perceiver's reports were compared with the partner's and coded to reflect one of four categories: *hits*, *misses*, *false alarms*, and *correct rejections* (dummy coded as 1 = *occured* and 0 = *did not occur*). For instance, a hit was coded when a behaviour was both self-reported by the partner and perceived by the participant, whereas a false alarm was coded when the participant perceived a partner behaviour which the partner did not self-report.

Based on the total count of hits, misses, false alarms, and correct rejections, we calculated *sensitivity* (d') and *bias* (c) scores for each participant and behaviour (Macmillan & Creelman, 2005). Sensitivity reflects the difference between z-transformed hit rates (i.e. the probability to land a hit when the partner reports the respective behaviour: hits/ [hits + misses]) and z-transformed false alarm rates (i.e. the probability to have a false alarm when the partner did not report the respective behaviour: false alarms/ [false alarms + correct rejections]). Sensitivity thus describes participants' ability to correctly discriminate between partner behaviours that were shown versus not shown. The bias measure reflects the sum of the z-transformed hit and false alarm rates multiplied by −0.5 (Macmillan & Creelman, 2005) and describes participants' systematic response tendencies. For better interpretability, we reversed bias scores so that higher values indicate a higher inclination to perceive a partner behaviour, and lower values indicate a higher inclination to not perceive a partner behaviour—regardless of whether the partner self-reported this behaviour or not. Further, we computed weighted means of the sensitivity and bias measures across all seven communal behaviours to assess participants' overall sensitivity and bias, respectively, in the perception of the partner's communal behaviours. The single behaviours were weighted according to their instrumentality for attaining communal goal states, based on discussion among the four authors (these weights were preregistered; see https://osf.io/fhtw5/). The same was done for uncommunal behaviours, which were aggregated with equal weights (also preregistered). To increase comprehensibility, we restrict our presentation of results to these aggregated sensitivity and bias scores. These indices represent formative measures of communal and uncommunal behaviour. Whether or not a person connects a specific behaviour with communal incentives is based on idiosyncratic learning experiences (McClelland, 1987). The specific behaviours should represent alternative implementations of communal motivation (Zygar et al., 2018). At a given moment, the partner most likely does not engage in all specific behaviours simultaneously but rather 'chooses' only one (or a few) specific behaviour(s) to express his/her communal motivation.

To address our research questions, participants' sensitivity and bias scores were next regressed on pnCommunion Approach, pnCommunion Avoidance, and the explicit desire for closeness. All predictor and outcome variables were z-standardised using their means and standard deviations in the total sample. To account for the dyadic nonindependence of data, we ran multilevel models specifying a couple-specific random intercept. In all models, relationship duration (z-standardised across all couples) was included as a covariate. In eight couples, one of the two partners met our preregistered exclusion criteria (see Participants and procedure section). Therefore, no sensitivity and bias scores could be computed for the remaining partner. Our QSDT analyses were thus based on data from $n = 502$ individuals.

RESULTS

Descriptive statistics

Table 1 presents the means, standard deviations, and correlations of participants' measures. Paired sample t-tests found no significant sex differences in participants' residualised pnCommunion Approach scores [$t(249) = 0.05$, $p = .961$, $d < 0.01$], explicit desires for closeness [$t(250) = 0.21$, $p = .835$, $d < 0.01$], typical (referring to participants' individual person-means across all surveys) global communal behaviour [$t(250) = 0.24$, $p = .807$, $d = 0.02$], and typical perceptions of their partner's global communal behaviour [$t(250) = 0.96$, $p = .336$, $d = 0.06$]. However, women had significantly higher scores in the residualised pnCommunion Avoidance, $t(249) = 2.69$, $p = .008$, $d = 0.24$. Interindividual differences in global communal behaviour were strongly correlated with interindividual differences in the perception of global communal partner behaviour (see right-hand side of Table 1). Corresponding correlations on the within-person level were, however, smaller (women: $r = .75$; men: $r = .76$). The distribution of participants' self-reported global communal behaviour (person-centred) is illustrated in the supporting information (Figure S1). Participants reported less communal behaviour than usual in 42.37% and more communal behaviour than usual in 57.63% of all surveys.

Descriptive statistics of the variables used in the QSDT analyses are displayed in Table 2. Women were, on average,

Table 1. Descriptive statistics and correlations

	M (*SD*)		Correlations				
Variables	Men	Women	1	2	3	4	5
1. pnCommunion Approach	3.62 (2.10)	3.88 (2.02)	.12	−.38***	.31***	.17**	.23***
2. pnCommunion Avoidance	1.32 (1.18)	1.67 (1.27)	−.38***	.07	−.09	−.03	−.02
3. Explicit desire for closeness	6.03 (0.66)	6.03 (0.85)	.20**	−.02	.28***	.46***	.48***
4. Global communal behaviour	7.40 (1.13)	7.42 (1.08)	.13*	−.09	.37***	.44***	.91***
5. Perception of partner's global communal behaviour	7.30 (1.14)	7.37 (1.15)	.16*	−.12	.36***	.95***	.54***

Note: $N = 510$. Correlations below the diagonal refer to men, above the diagonal to women, and on the diagonal to within-couple correlations. Residualised PACT scores were used for the correlation analyses. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 2. Mean sensitivities and biases in the perception of the partner's specific communal and uncommunal behaviours

	Sensitivity (d')			Bias (c)		
		M (*SD*)			*M* (*SD*)	
Behaviour	Range	Men	Women	Range	Men	Women
Affection	−1.37 to 2.37	0.73 (0.55)	0.68 (0.56)	−2.21 to 2.04	0.24 (0.79)	0.46 (0.71)
Admiration	−1.48 to 2.65	0.84 (0.62)	0.80 (0.61)	−2.31 to 1.52	−1.05 (0.65)	−1.09 (0.62)
Teasing	−1.40 to 2.49	0.85 (0.60)	0.84 (0.64)	−2.33 to 1.67	−0.99 (0.74)	−0.80 (0.69)
Sacrificing	−0.87 to 2.39	0.73 (0.61)	0.65 (0.60)	−2.34 to 1.45	−1.17 (0.57)	−1.17 (0.59)
Supporting	−1.61 to 2.39	0.73 (0.61)	0.70 (0.63)	−2.32 to 1.11	−1.07 (0.57)	−0.92 (0.55)
Asking about feelings and thoughts	−2.03 to 2.54	0.40 (0.56)	0.43 (0.60)	−2.34 to 1.64	−0.66 (0.91)	−0.48 (0.84)
Particularly high regard	−1.29 to 2.54	0.82 (0.55)	0.79 (0.59)	−2.31 to 1.55	−0.91 (0.71)	−0.70 (0.71)
Communal behaviour index	−0.19 to 1.15	0.48 (0.20)	0.46 (0.20)	−1.20 to 0.63	−0.45 (0.31)	−0.36 (0.29)
Disinterest or ignorance	−0.62 to 3.24	1.32 (0.61)	1.37 (0.53)	−2.20 to 0.34	−1.20 (0.43)	−1.13 (0.45)
Particularly low regard	−0.31 to 2.90	1.40 (0.51)	1.37 (0.53)	−2.13 to −0.10	−1.38 (0.33)	−1.35 (0.33)
Uncommunal behaviour index	−0.41 to 2.68	1.36 (0.43)	1.37 (0.42)	−2.04 to −0.10	−1.29 (0.31)	−1.24 (0.34)

Note: $N = 502$. Sensitivity and bias scores were calculated as outlined in Macmillan and Creelman (2005). For better interpretability, bias scores were reversed, so that higher values indicate a higher tendency to report partner behaviours.

Table 3. Step-wise model comparisons

		pnCommunion Approach				pnCommunion Avoidance				Explicit desire for closeness			
Step	Model addition	ΔAIC	$\Delta\chi^2$	Δdf	Δp	ΔAIC	$\Delta\chi^2$	Δdf	Δp	ΔAIC	$\Delta\chi^2$	Δdf	Δp
1	Baseline model	126210	—	18	—	126210	—	18	—	126210	—	18	—
2	Communal partner behaviour (quadratic)	−254	266.33	6	<.001	−254	266.33	6	<.001	−254	266.33	6	<.001
3	Motive main effect	−15	16.54	1	<.001	−4	5.86	1	.016	−17	18.95	1	<.001
4	Motive × communal partner behaviour (linear)	−24	26.04	1	<.001	1	1.08	1	.299	2	0.08	1	.774
5	Motive × communal partner behaviour (quadratic)	−1	3.25	1	.071	0	1.61	1	.205	1	0.57	1	.450

Note: N = 40,903 surveys. ΔAIC = Difference in the Akaike information criterion compared with the preceding model step; for the baseline model, absolute values are reported. The baseline model included the effects of the partner's communal behaviour, the perceiver's communal behaviour, and covariates (sex, time, weekend, and relationship duration). Model extension Steps 1 and 2 were identical for all three motives.

less sensitive [$t(250) = -2.01$, $p = .046$, $d = -0.09$] and more biased [$t(250) = 3.81$, $p < .001$, $d = 0.31$] towards communal partner behaviours than men. No significant sex differences were found with regard to average sensitivity [$t(250) = 0.31$, $p = .758$, $d = 0.02$] and average bias [$t(250) = 1.74$, $p = .083$, $d = 0.16$] in the perception of uncommunal partner behaviours. In the total sample, correlations between sensitivity and bias scores were negligible for communal behaviours ($r_{women} = -.04$, $p = .503$; $r_{men} = -.08$, $p = .196$) as well as for uncommunal behaviours ($r_{women} = -.13$, $p = .033$; $r_{men} = -.06$, $p = .376$). Average prevalences of hits, misses, false alarms, and correct rejections for single partner behaviours are reported in the supporting information (Table S1).

Perception of partner's global communal behaviour

General mean-level bias and tracking accuracy.

The multilevel model used to analyse mean-level bias and tracking accuracy in the perception of the partner's global communal behaviour was fitted to the data in a step-wise procedure (see Table 3). We first ran a baseline model in which partner perceptions were regressed on the partner's communal behaviour, the perceiver's communal behaviour, and covariates. In a next step, the baseline model was extended by entering the partner's squared communal behaviour as a predictor, which resulted in a significant increase in model fit. Thus, tracking accuracy generally differed depending on the extent of the partner's communal behaviour. As displayed in Table 4, general mean-level bias did not significantly differ from 0. Thus, on average, participants neither underestimated nor overestimated their partner's communal behaviour. Moreover, there was a significant assumed-similarity bias by perceivers' own behaviour. That is, participants who behaved more communally in a given moment also perceived their partner to behave more communally. Nonetheless, independent of this effect, perceivers were able to judge changes in their partner's communal behaviour with significant accuracy. Participants' tracking accuracy was characterised by a non-linear slope; accuracy was strongest when the partner behaved less communal than usual and decreased the more communal the partner behaved (see Figure 1).[1]

[1]Effects were similar without any covariates in the model; please see Table S2.

Table 4. General mean-level bias and tracking accuracy in the perception of partner's global communal behaviour

Effects	Estimate	*SE*	*t*	*p*	CI
Mean-level bias	−0.033	0.022	−1.526	.128	[−0.075; 0.009]
Projection bias	0.664	0.011	59.292	<.001	[0.642; 0.686]
Tracking accuracy	0.127	0.008	16.385	<.001	[0.112; 0.142]
Tracking accuracy^2	−0.021	0.003	−7.094	<.001	[−0.026; −0.015]
Sex	0.047	0.026	1.816	.071	[−0.004; 0.098]
Time	<0.001	<0.001	0.024	.981	[<0.001; <0.001]
Weekend	0.030	0.012	2.487	.013	[0.006; 0.054]
Relationship length	−0.006	0.003	−2.122	.035	[−0.011; <0.001]

Note: N = 40 903 surveys. CI = 95% confidence intervals. Estimates refer to unstandardised effects.

Figure 1. General mean-level bias and tracking accuracy in the perception of partner's communal behaviour. Both the partner's actual behaviour (x-axis) and perceived behaviour (y-axis) were centred on the person-mean of the partner's actual communal behaviour across all surveys. Raw data points are plotted in grey. Figure available at https://osf.io/cbsgq/ under a. CC-BY4.0 licence.

Moderation of mean-level bias and tracking accuracy by communal motives.

Next, we tested whether perceivers' pnCommunion Approach, pnCommunion Avoidance, and explicit desire for closeness moderated mean-level bias and tracking accuracy. The results of the respective models are presented in Table 5 and illustrated in Figure 2; the figure covers the whole range of the investigated variables. Accordingly, slopes for the minimum and maximum motive strength are plotted.

Perceivers' pnCommunion Approach significantly moderated mean-level bias and the linear, but not the quadratic, component of tracking accuracy (see Table 3). Perceivers' pnCommunion Approach had a positive effect on mean-level bias and a negative effect on linear tracking accuracy (Table 5). As illustrated in Figure 2 Panel A, a strong pnCommunion Approach was associated with a positively biased view of the partner's behaviour. In situations in which their partner behaved less communal than usual, perceivers with a strong pnCommunion Approach tended to ascribe higher communal behaviour to their partner and thus demonstrated reduced tracking accuracy, compared with perceivers with a weaker motive. This motivational effect on partner perception, however, decreased the more the partner's actual communal behaviour positively deviated from its typical level.

PnCommunion Avoidance significantly moderated mean-level bias but neither the linear nor the quadratic component of tracking accuracy (Table 3). In contrast to pnCommunion Approach, the effect of the avoidance motive on mean-level bias was negative (Table 5).

That is, perceivers with a strong pnCommunion Avoidance tended to ascribe lower communal behaviour to their partners than perceivers with a weaker avoidance motive, irrespective of the level of the partners' behaviour (Figure 2, Panel B).

The explicit desire for closeness significantly moderated mean-level bias but not tracking accuracy (Table 3). Compared with perceivers with a weaker explicit desire for closeness, those with a strong explicit desire for closeness perceived their partner's communal behaviour to be higher, irrespective of the level of partner behaviour (Table 4; Figure 2, Panel C).[2]

Perception of specific partner behaviours

Table 6 displays the results of the multilevel models used to examine the effects of perceivers' communal motives on their sensitivity and bias in the perception of specific communal and uncommunal partner behaviours. The results pertain to the aggregated (un)communal behaviour indices.

Communal partner behaviours.

Regarding communal partner behaviours, there were no significant associations between sensitivity and perceivers' communal motives. Thus, there was no evidence that

[2]We also ran additional analyses in which we included participants' (perceived) agentic behaviour as covariates (see preregistration at https://osf.io/fhtw5/); all effects reported in Table 5 were robust in these control analyses.

Table 5. Effects of communal motives on mean-level bias and tracking accuracy in the perception of partner's global communal behaviour

Model	Estimate	*SE*	*t*	*p*	CI
pnCommunion Approach					
Mean-level bias	−0.036	0.021	−1.696	.091	[−0.078; 0.006]
Projection bias	0.664	0.011	59.251	<.001	[0.642; 0.686]
Tracking accuracy	0.128	0.008	16.359	<.001	[0.112; 0.143]
Tracking accuracy^2	−0.021	0.003	−7.174	<.001	[−0.027; −0.015]
Communal motive → mean-level bias	0.048	0.010	4.774	<.001	[0.028; 0.068]
Communal motive → tracking accuracy	−0.014	0.003	−5.127	<.001	[−0.019; −0.009]
pnCommunion Avoidance					
Mean-level bias	−0.029	0.021	−1.354	.176	[−0.071; 0.013]
Projection bias	0.664	0.011	59.289	<.001	[0.642; 0.686]
Tracking accuracy	0.127	0.008	16.399	<.001	[0.112; 0.142]
Tracking accuracy^2	−0.021	0.003	−7.086	<.001	[−0.026; −0.015]
Communal motive → mean-level bias	−0.040	0.016	−2.451	.015	[−0.072; −0.008]
Explicit desire for closeness					
Mean-level bias	−0.034	0.021	−1.606	.109	[−0.076; 0.008]
Projection bias	0.664	0.011	59.318	<.001	[0.642; 0.686]
Tracking accuracy	0.127	0.008	16.441	<.001	[0.112; 0.142]
Tracking accuracy^2	−0.020	0.003	−7.005	<.001	[−0.026; −0.015]
Communal motive → mean-level bias	0.119	0.027	4.438	<.001	[0.067; 0.172]

Note: N = 40 903 surveys. CI = 95% confidence intervals. Results pertain to the final models for each motive that were determined by step-wise model comparisons (see Table 3). Estimates refer to unstandardised effects. Not displayed: covariates sex, time, weekend, and relationship duration.

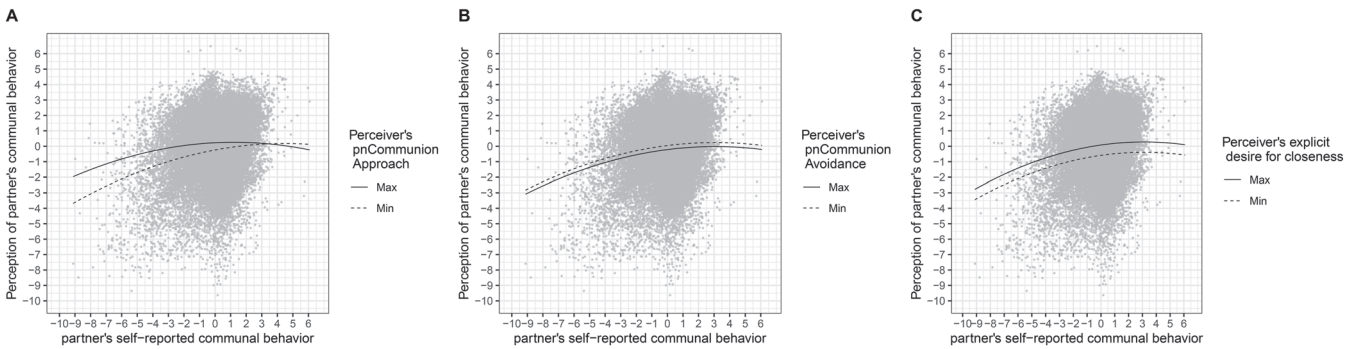

Figure 2. Mean-level bias and tracking accuracy in the perception of partner's communal behaviour as a function of perceivers' pnCommunion Approach (Panel a), pnCommunion Avoidance (Panel B), and explicit desire for closeness (Panel C). Both the partner's actual behaviour (x-axis) and perceived behaviour (y-axis) were centred on the person-mean of the partner's actual communal behaviour across all surveys. Raw data points are plotted in grey. Figure available at https://osf.io/cbsgq/ under a CC-BY4.0 licence.

perceivers with a strong communal motive differed from perceivers with a weaker motive in their detection of communal partner behaviours. However, all three motives were significantly related to biased perceptions of the partner's communal behaviours. Bias (i.e. perceiver's tendency to report the presence of a partner behaviour, regardless of whether the partner self-reported it or not) was positively associated with pnCommunion Approach and the explicit desire for closeness, and negatively with pnCommunion Avoidance. Accordingly, there were significant and positive effects of pnCommunion Approach and the explicit desire for closeness on *z*-transformed hit rates (pnCommunion Approach: $\beta = 0.153$, $SE = 0.043$, $p < .001$; explicit desire for closeness: $\beta = 0.213$, $SE = 0.045$, $p < .001$) and *z*-transformed false alarm rates (pnCommunion Approach: $\beta = 0.142$, $SE = 0.044$, $p = .001$; explicit desire for closeness: $\beta = 0.173$, $SE = 0.046$, $p < .001$).[3] Thus, perceivers with a strong pnCommunion Approach or a strong explicit desire for closeness were more prone than perceivers with a weaker motive to report communal partner behaviours, regardless of whether the partner self-reported such behaviours or not. In contrast, perceivers with a stronger pnCommunion Avoidance overall less likely reported communal partner behaviours; the avoidance motive had significant negative effects on both *z*-transformed

[3]For these additional analyses, hit rates and false alarm rates were computed as follows. For each specific behaviour and person, raw hit rates (hits/[hits + misses]) and false alarm rates (false alarms/[false alarms + correct rejections]) were computed and *z*-transformed. Next, we calculated weighted average hit rates and false alarm rates, respectively, across all communal (uncommunal) behaviours (the same preregistered weights as for the behaviour indices were used). Finally, the weighted average hit and false alarm rates were *z*-standardised in the total sample.

Table 6. Effects of communal motives on momentary perceptions of the partner's communal and uncommunal behaviours

	Sensitivity					Bias				
Motive → behaviour	Estimate	*SE*	*t*	*p*	CI	Estimate	*SE*	*t*	*p*	CI
Communal behaviours										
pnCommunion Approach	0.017	0.032	0.534	.594	[−0.045; 0.079]	0.158	0.044	3.598	<.001	[0.072; 0.244]
pnCommunion Avoidance	0.022	0.031	0.721	.471	[−0.038; 0.083]	−0.115	0.044	−2.607	.009	[−0.201; −0.028]
Explicit desire for closeness	0.022	0.034	0.637	.525	[−0.045; 0.089]	0.207	0.045	4.552	<.001	[0.118; 0.296]
Uncommunal behaviours										
pnCommunion Approach	0.112	0.040	2.800	.005	[0.033; 0.190]	−0.098	0.044	−2.207	.028	[−0.184; −0.011]
pnCommunion Avoidance	−0.021	0.039	−0.527	.598	[−0.098; 0.056]	0.021	0.045	0.469	.639	[−0.066; 0.108]
Explicit desire for closeness	0.192	0.042	4.546	<.001	[0.109; 0.275]	−0.163	0.046	−3.575	<.001	[−0.252; −0.074]

Note: $N = 501$ (pnCommunion Approach and Avoidance) and 502 (explicit desire for closeness). CI = 95% confidence intervals. For better interpretability, bias scores were reversed, so that higher values indicate a higher tendency to report partner behaviours. Estimates refer to standardised effects. Not displayed: covariate relationship duration.

hit rates ($\beta = -0.098$, $SE = 0.043$, $p = .024$) and *z*-transformed false alarm rates ($\beta = -0.122$, $SE = 0.044$, $p = .006$).

Uncommunal partner behaviours.
Regarding uncommunal partner behaviours, there were positive and significant associations between sensitivity and perceivers' pnCommunion Approach and explicit desire for closeness. Both motives were also significantly and negatively associated with bias, indicating that perceivers with a strong pnCommunion Approach or explicit desire for closeness overall less likely reported uncommunal partner behaviours. This result pattern for motivational sensitivity and bias in the perception of uncommunal behaviours points to a stronger effect of motives on false alarm rates than on hit rates. Additional analyses supported this explanation: pnCommunion Approach and the explicit desire for closeness were significantly and negatively associated with *z*-transformed false alarm rates (pnCommunion Approach: $\beta = -0.137$, $SE = 0.043$, $p = .002$; explicit desire for closeness: $\beta = -0.254$, $SE = 0.045$, $p < .001$), but had no significant effects on *z*-transformed hit rates (pnCommunion Approach: $\beta = -0.005$, $SE = 0.045$, $p = .916$; explicit desire for closeness: $\beta = 0.012$, $SE = 0.046$, $p = .797$). Thus, perceivers with a strong pnCommunion Approach or a strong explicit desire for closeness less likely reported uncommunal partner behaviours that were not actually shown by their partner, compared with perceivers with a weaker motive. In turn, perceivers' communal motives appear unrelated to their performance in detecting uncommunal partner behaviours their partner has actually shown.

Finally, neither sensitivity nor bias in the perception of uncommunal partner behaviours were significantly related to perceivers' pnCommunion Avoidance. Accordingly, there were no significant associations between pnCommunion Avoidance and *z*-transformed hit rates ($\beta = 0.011$, $SE = 0.045$, $p = .805$) or *z*-transformed false alarm rates ($\beta = 0.014$, $SE = 0.044$, $p = .754$). Thus, there was no evidence that perceivers with a strong pnCommunion Avoidance were more sensitive or biased in their perceptions of their partner's uncommunal behaviours than perceivers with a weaker motive.[4]

Supplemental analyses

Unique effects of implicit and explicit motives on partner perception.
Implicit and explicit motives are supposed to represent two independently operating motivational systems (McClelland et al., 1989; Schultheiss, 2001). However, direct and indirect motive measures usually show small to moderate associations (Hagemeyer, Neyer, et al., 2013; Köllner & Schultheiss, 2014), which was also the case in the present study (see Table 1). In supplemental analyses, we therefore examined the unique effects of pnCommunion Approach, pnCommunion Avoidance, and the explicit desire for closeness on TBM and QSDT indices of accuracy and bias. In these supplemental models, all three motives were entered simultaneously.

First, for supplemental TBM analyses, we used the respective final model specifications as identified by the step-wise model comparisons (see Table 3). We included perceivers' pnCommunion Approach as moderator of mean-level bias and linear tracking accuracy and their pnCommunion Avoidance and explicit desire for closeness as moderators of mean-level bias. The effects of pnCommunion Approach and the explicit desire for closeness remained robust in this combined model (see Table S3). However, the effect of pnCommunion Avoidance on mean-level bias was no longer significant.

Second, we ran two QSDT models in which perceivers' sensitivity and bias scores, respectively, were regressed on perceivers' implicit and explicit motives. As detailed in Table S4, all effects of the explicit desire for closeness were robust. However, the effects of pnCommunion Approach and Avoidance on bias in the perception of specific communal

[4]The current study was preceded by a pilot study, which is described in detail in the supporting information (Pilot Study section). With the inclusion of the pilot study data, all significant effects of the aforementioned TBM and QSDT analyses remained robust (see Tables S10 and S11).

partner behaviours were no longer statistically significant.[5] In addition, there were no longer significant effects of pnCommunion Approach on sensitivity and bias in the perception of specific uncommunal partner behaviours.

Actual similarity of global communal behaviour.
According to our TBM analyses (see Table 4), perceivers demonstrated a significant assumed-similarity bias. That is, they seem to strongly rely on their own (self-reported) momentary communal behaviour when making judgements about their partner's momentary communal behaviour. Basing one's partner perceptions on assumed similarity may, however, indirectly contribute to accuracy when the two couple members actually behave similarly (West & Kenny, 2011). Thus, total accuracy (i.e. the total effect of the partner's self-reported communal behaviour on partner perception) can be decomposed into two sources: direct accuracy (referring to the unique effect of the partner's self-reported behaviour; b_1 in Equation (1)) and indirect accuracy (referring to the indirect effect of the partner's self-reported behaviour via the perceiver's self-reported behaviour). To determine indirect accuracy, we followed the procedure outlined in West and Kenny (2011). First, we regressed perceivers' momentary communal behaviour on their partners' momentary communal behaviour to estimate actual similarity between couple members.[6] As detailed in Table S5, couples demonstrated significant actual similarity in their communal behaviour, $b = 0.228$, $p < .001$. Second, multiplying this actual similarity parameter with the bias of assumed similarity ($b = 0.664$; b_2 in Equation (1)) yielded an indirect accuracy effect of 0.152. Total accuracy (i.e. indirect + direct accuracy) thus amounted to 0.306; hence, 49.64% of total accuracy was due to the bias of assumed similarity. In addition to indirect accuracy, it is also possible to determine the extent of mean-level bias that is explained by perceivers' communal behaviour (indirect mean-level bias; for details, see West & Kenny, 2011). In our case, indirect mean-level bias was −0.047; perceivers' self-reported communal behaviour thus explained 37.57% of the total mean-level bias (which amounted to −0.126).[7]

In summary, we found that perceivers' self-reported communal behaviour explained about half of the total accuracy and about one third of the total mean-level bias in their partner perceptions. Our main analyses revealed significant moderation effects of communal motives on direct tracking accuracy and direct mean-level bias (Table 5; 'direct' means that we controlled for assumed-similarity bias). To examine whether these moderation effects also apply to total tracking accuracy and total mean-level bias, we reestimated our final TBMs without controlling for assumed-similarity bias (by removing perceivers' self-reported communal behaviour as a predictor). The results of these control analyses are presented in Table S7. All results of the main analyses remained robust.

[5]Notably, the effect of the pnCommunion Approach on bias in the perception of communal partner behaviours was incremental in QSDT analyses of combined data from the main and pilot studies, $\beta = 0.107$, $p = .013$. Thus, with higher statistical power, the effect was robust.
[6]This model included only a random intercept, but no random coefficients as it failed to converge otherwise.
[7]Total mean-level bias and total tracking accuracy can alternatively be estimated by a baseline TBM in which assumed-similarity bias is not controlled for. Fitting this model to the data yielded highly similar estimates of total mean-level bias and total tracking accuracy (for details, see Table S6).

DISCUSSION

The present study investigated how interindividual differences in implicit and explicit communal motives manifest in momentary partner perceptions. We reasoned that partner behaviour pointing to communal incentives or disincentives has motivational relevance for the perceiver. In two complementary sets of analyses, we compared partner perceptions with partner's actual self-reported behaviour for an in-depth investigation of motivational bias and accuracy. We expected that perceivers with a strong pnCommunion Approach or a strong explicit desire for closeness would, compared with perceivers with a weaker motive, (i) systematically overestimate their partner's communal behaviour, (ii) more accurately perceive their partner's momentary communal behaviour, and (iii) less accurately perceive their partner's momentary uncommunal behaviour. In addition, we expected a strong pnCommunion Avoidance to manifest in an increased focus on uncommunal partner behaviour as indicated by (iv) a systematic overestimation of the partner's uncommunal behaviour and (v) enhanced accuracy in the perception of momentary uncommunal partner behaviour. Because our measures of (perceived) partner behaviour did not distinguish between verbal and non-verbal behaviour, we further examined the unique effects of implicit and explicit motives on partner perception. In the following, we discuss how the present results related to our expectations.

Motivational bias

Most importantly, the results consistently indicate that, as expected, individual differences in pnCommunion Approach and the explicit desire for closeness are associated with biased partner perception. First, TBM analyses revealed that perceivers with a strong pnCommunion Approach or a strong explicit desire for closeness tended to ascribe more communal behaviour to their partners, compared with perceivers with a weaker motive. As shown in supplemental TBM analyses, the two motives uniquely contributed to this overperception. Thus, communal approach-oriented individuals seem to perceive their partner's communal qualities in a positively biased light. These findings agree with previous research, which has, for example, shown that people project their own self-ascribed supportiveness, care, and intimacy goals onto their partners (Lemay et al., 2007; Sanderson & Cantor, 2001). In addition, the present study is the first to demonstrate unique motivational bias in everyday partner perceptions due to implicit communal motives. Hence, the present study provides support for the claim that partner perceptions are biased by fundamental partner-related needs (Fletcher & Kerr, 2010; Murray et al., 1996) and extends previous research by showing that such motivational biases are

not universal but differ between persons due to their individual motive strength.

Second, a converging pattern of motivational bias was found in the QSDT analyses. Perceivers with a stronger pnCommunion Approach or a stronger explicit desire for closeness were more biased towards reporting communal partner behaviours, regardless of whether the partner actually reported such behaviour. In addition, both motives were associated with the systematic tendency to report less specific uncommunal partner behaviours. These biasing effects were, however, more robust for the explicit desire for closeness than pnCommunion Approach. Thus, the QSDT findings suggest that communal approach bias is characterised by an exaggeration of partner behaviours linked to communal incentives and an underestimation of partner behaviours linked to communal disincentives. Taken together, the present findings provide support for our assumption that people interpret their partners' behaviour in ways that fit their own communal motives (Woike, 2008).

Furthermore, TBM analyses showed that perceivers with a strong pnCommunion Avoidance ascribed lower communion to their partner's behaviour than perceivers with a weaker avoidance motive. Similarly, QSDT analyses found evidence for such motivational avoidance bias in the perception of specific communal but not uncommunal partner behaviours. Thus, what characterises avoidance-oriented perceivers might not be an exaggeration of uncommunal partner behaviour, as we expected, but rather an underestimation of the partner's particularly communal behaviour. However, the biasing effects of pnCommunion Avoidance were not robust in control analyses and should therefore not be over-interpreted.

Accuracy in the perception of communal partner behaviour

Contrary to our expectation, strong communal motives were not significantly associated with enhanced accuracy in the perception of particularly communal partner behaviour. This null result was consistent across both TBM and QSDT analyses and across all three motive variables. Thus, we found no evidence for the assumption that perceivers with strong communal motives have a greater ability to detect their partner's momentary particularly communal behaviour, compared with perceivers with weaker motives. A potential explanation for this finding might be that high amounts of closeness are a basic element of most couple relationships (Neyer, Wrzus, Wagner, & Lang, 2011) and that most people can contact their partners if they want to (e.g. technically mediated). Particularly communal partner behaviour might have no additional relevance for people with strong communal motives, at least if their relationships already provide sufficient opportunities to realise communal incentives. Nevertheless, it has to be noted that this finding is inconsistent with previous research showing, for example, that people more readily attend to and remember social information linked with incentives that fit their motives (Schultheiss & Hale, 2007; Woike, 2008). Thus, future research is needed to better understand the conditions under which communal incentives are detected. It might be worthwhile to take intrapersonal motivational dynamics into account. For instance, perceivers' typical amount of communal need satisfaction might moderate their orientation towards communal incentives. According to set-point theories of motivation (e.g. Bischof, 1975; Carver & Scheier, 1990), people who can constantly satisfy their partner-related communal needs should rarely experience communal appetence states. Because of their typical high communal satisfaction, they might be less affected by communal partner behaviour than people who lack a fulfilling level of communion in their relationship.

Accuracy in the perception of uncommunal partner behaviour

The results on accuracy in the perception of uncommunal partner behaviour were less consistent across the two analytical approaches. On the one hand, the TBM analyses found that a strong pnCommunion Approach, but none of the other two motives, was associated with decreased perceptual accuracy when the partner behaved less communal than usual. On the other hand, QSDT analyses found that perceivers with a strong pnCommunion Approach or explicit desire for closeness demonstrated greater sensitivity towards uncommunal partner behaviours. At first glance, this finding might suggests that they detected uncommunal partner behaviours with enhanced accuracy, which would contradict the TBM results. However, enhanced sensitivity was not due to a higher hit rate in participants with strong communal motives, but rather due to a lower false alarm rate. Perceivers' with a strong pnCommunion Approach or explicit desire for closeness less likely reported uncommunal partner behaviours that were not self-reported by their partner, compared with perceivers with a weaker motive. At least with regard to pnCommunion Approach, this finding converges with our TBM results, indicating that perceivers with a strong pnCommunion Approach tend to avoid perceptions of uncommunal partner behaviours. Whereas our TBM results point to the avoidance of uncommunal behaviour that was actually shown by the partner, our QSDT results point to an avoidance of misperceptions of uncommunal partner behaviours. This finding provides support for our assumption that perceivers' with a strong pnCommunion Approach orient away from uncommunal partner behaviour, supposedly to avoid communal disincentives (such as loneliness or rejection). Instead, they appear to more strongly adhere to their typical (positively biased) view of their partner than perceivers with a weaker motive.

Unexpectedly, across both TBM and QSDT analyses, accuracy in the perception of uncommunal partner behaviour was unrelated to perceivers' pnCommunion Avoidance. Thus, we found no evidence for the assumption that a strong pnCommunion Avoidance manifests in enhanced accuracy in the perception of uncommunal partner behaviour. Rather, communal avoidance-oriented individuals seem to have no heightened awareness of their partner's momentary uncommunal behaviour. This finding disagrees with previous research which reported, for instance, positive associations between avoidance motives and reactivity to negative partner

behaviour (Kuster et al., 2015). We see two potential causes for this inconsistency. First, most previous studies focused on explicit avoidance motives, which were not assessed in the present study. Second, the measure we used for the assessment of implicit motives quantifies communal avoidance imagery in a narrow manner (one content category). Thus, future research might apply broader measures of implicit communal avoidance motives and extend the current analyses to explicit avoidance motives.

To summarise, the current TBM and QSDT analyses converged in four respects. First, we found consistent evidence that a strong pnCommunion Approach and a strong explicit desire for closeness contribute to positively biased partner perceptions. Second, both analyses indicate that perceivers with a strong pnCommunion Approach tend to avoid perceptions of uncommunal partner behaviours. These contributions of pnCommunion Approach and the explicit desire for closeness were additive in the TBM analyses but not in the QSDT analyses. Third, accuracy in the perception of particularly communal partner behaviour appears to be largely unrelated to perceivers' communal motives. Fourth, although effects of pnCommunion Avoidance on partner perceptions were found, they were less robust and should be interpreted with caution.

Taken together, our results suggest that interindividual differences in communal motives manifest in systematic differences in overall partner perception. Our TBM and QSDT analyses provided consistent evidence for perceptual bias due to perceivers' communal motives. In addition, we also found evidence for motive effects on the detection of changes in the partner's behaviour from one moment to another; it seems that people with strong implicit communal approach motives tend to ignore momentary partner behaviour that is particularly uncommunal. Thus, what differentiates perceivers with strong communal approach motives from those with weaker motives appears to be a general, overly positive view of their partners' communal intentions that also transpires during momentary perceptions.

Differences between TBM and QSDT analyses

Besides their convergences, the results of TBM and QSDT analyses also differed on several accounts. Across both analyses, we found an association between a strong pnCommunion and the tendency to avoid perceptions of uncommunal partner behaviour; however, in our TBM analyses, this tendency pertained to the avoidance of perceptions of uncommunal partner behaviour that actually occurred (according to the partner's self-report), whereas in our QSDT analyses, it pertained to the avoidance of misperceptions of uncommunal partner behaviours that did not actually occur. Moreover, only in our QSDT but not TBM analyses, the tendency to avoid perceptions of uncommunal partner behaviour was associated with a strong explicit desire for closeness. There are some differences between TBM and QSDT analyses that may help to better understand and qualify these discrepancies.

First, TBM and QSDT analyses involved different measures of partner perception. Our TBM analyses focused on perceptions of global communal behaviour, which likely reflected perceivers' subjective characterisations of their partner's behaviour. It is unclear, which concrete behaviours these judgements were based upon. In contrast, our QSDT analyses focused on perceptions of specific partner behaviours, whose communal incentive value was not subjectively assessed by participants, but determined *a priori* by discussion among the authors. The communal incentive values of single partner behaviours are highly idiosyncratic; whether a behaviour is subjectively interpreted as communal should therefore differ from person to person.

Second, TBM and QSDT analyses modelled accuracy in different ways. On the one hand, our TBM analyses assessed whether participants accurately perceived momentary deviations of the partner's self-reported behaviour from its typical level. By including perceivers' communal behaviour as a predictor, assumed-similarity bias was controlled (West & Kenny, 2011). Thus, accuracy in TBM terms does not reflect absolute correspondence between perceived and actual partner behaviour, but the extent to which perceivers were able to track changes in their partner's nonshared communal behaviour, that is, partner behaviour that also deviated from perceiver's own behaviour. In contrast, the QSDT measure of accuracy reflected partners' absolute agreement on whether a specific behaviour occurred or not. This does not preclude that the respective behaviour was shared by the couple.

Third, the perception of continuous changes in partner behaviour (as modelled in TBM analyses) and the perception of categorical 'signals' provided by the partner's behaviour (as modelled in QSDT analyses) may be affected by different perceptual processes and thresholds. For instance, Satpute et al. (2016) recently showed that individuals apply different perceptual thresholds when making continuous versus categorical judgements of facial expressions as either fearful or calm; these shifts in perceptual thresholds varied between persons, and covaried with activation in brain structures that process affective information (such as the amygdala)—structures that also appear to be central for motivation (Hall, Stanton, & Schultheiss, 2010). Future experimental research is needed to more clearly disentangle such perceptual processes and their associations with individual differences in motives.

Limitations and future research

The present research has several limitations. First, the associations between communal motives and partner perception were overall small in magnitude. Both the significant and null results thus require replication in independent, sufficiently powered samples. Nonetheless, even small effects can have meaningful consequences for various life outcomes (Funder & Ozer, 2019; Ozer & Benet-Martínez, 2006). For example, even a slight systematic overperception of one's partner's communal behaviour may have positive short-term consequences such as momentary boosts in relationship satisfaction or the facilitation of positive interactions between partners. Over time, such short-term benefits might cumulate and increase couples' overall relationship functioning and

longevity (Miller, Niehuis, & Huston, 2006; Murray & Holmes, 1997).

Second, our measure of the explicit desire for closeness did not allow for the distinction between approach and avoidance tendencies. Item wordings and previous findings indicate that it assessed mainly explicit communal approach motivation, which is also corroborated by the findings of the present study. Previous research on explicit avoidance motivation in couples suggests its relevance for relationship processes (e.g. Gable & Poore, 2008; Impett et al., 2010; Kuster et al., 2015; Kuster et al., 2017); however, little is known about the effects of explicit avoidance motives on accuracy and bias. Thus, to develop a more comprehensive picture of motivational partner perception, the current analyses should be complemented with investigations of explicit communal avoidance motives.

Third, participants' behaviour and partner perceptions were exclusively assessed via questionnaire reports. The partner's self-reported behaviour was, similar to other studies, used as an accuracy criterion (e.g. Biesanz & Human, 2010; Clark et al., 2017; Fletcher & Kerr, 2010; Human, Carlson, Geukes, Nestler, & Back, 2018; Sadikaj et al., 2017). Self-reports may, however, not be an ideal accuracy criterion as they are susceptible to subjective biases (Vazire, 2010). Future research should extend the present analyses by using more objective indicators of behaviour such as observational or physiological data (e.g. Dufner, Arslan, Hagemeyer, Schönbrodt, & Denissen, 2015) or by utilising the increasing technological possibilities to assess couples' interaction behaviour (e.g. phone tracking to assess changes in spatial proximity to the partner or the frequency of digitally mediated communications). In a similar vein, our investigation is far from exhaustive, in terms of the potential effects of motives on partner perception. It might be promising to extend the present analyses to a wider range of behaviour, by, for instance, accounting for the distinction between verbal and non-verbal behaviour or the expression of emotions. Also, future research could use nonpropositional measures of partner perception, such as implicit evaluations (e.g. Fazio & Olson, 2003), which have stronger conceptual links with implicit motives.

Fourth, future research might more directly test the theorised perceptual functions of communal motives in guiding a person's attention, memory, and social-cognitive information processing in the context of partner perception. Although these functions provided a necessary rationale for our expectations, we could not test them directly with the data at hand. Ideally, future research would employ experimental designs and/or behavioural observations to allow for microanalyses of the perceptual functions of motives.

Finally, we want to address two broader considerations for future research. First, previous studies suggest that accuracy and bias serve distinct functions in the relationship (Gagné & Lydon, 2004; Luo & Snider, 2009). On the one hand, overly positive perceptions seem to promote and maintain love and commitment, especially when people must deal with uncertainty about their partners and the relationship (Murray, 1999). Realistic perceptions, on the other hand, seem to foster mutual understanding and thereby prevent and/or help to resolve conflicts in the relationship (Kilpatrick, Bissonnette, & Rusbult, 2002). Also, accurate detection of communal partner behaviour seems to lay the foundation for gratitude and intimacy in the relationship (Reis & Shaver, 1988; Visserman et al., 2018). Thus, future research might provide an important complement to the current findings on the motivational sources of accurate and biased perceptions of the partner's momentary behaviour by examining their associations with intrapersonal (e.g. are biased perceivers' more committed to their partner?), interpersonal (e.g. are accurately perceived partners more satisfied?), and dyadic outcomes (e.g. do accuracy and bias affect relationship stability?). Ideally, such investigations should account for both short-term and long-term outcomes (such as state and trait relationship satisfaction, respectively) to better understand the processes through which communal motives affect relationship functioning.

Future research might moreover explore whether the current findings generalise to other relational contexts (such as friend, family, or work relationships). We expect this to be the case, as the current predictions were in part based on general assumptions from motivation psychology about the perceptual functions of motives. However, we note that people can differ in which relationships they preferably express their global communal needs; for instance, some people may particularly enjoy closeness with friends, whereas others may prefer closeness with the partner (Hagemeyer & Neyer, 2012). Thus, future research should ideally, like in the current study, use relationship-specific motive measures to draw a more exact picture of the motivational processes that are relevant to social perception in the specific type of relationship.

CONCLUSION

An increasing body of literature corroborates that individual characteristics shape the way people perceive and interact with their social environments (Back et al., 2011; Mund, Finn, Hagemeyer, & Neyer, 2016). The present study complements this research by showing how accurate and biased partner perceptions relate to perceivers' implicit and explicit communal motive strength. We used data from a high-powered dyadic experience sampling study, allowing us to investigate couples' perceptual processes in their everyday lives using two complementary statistical approaches: truth and bias models of judgement and quasi-signal detection analyses. Communal motives primarily manifested in wishful thinking; strong implicit communal approach motives and strong explicit communal motives were associated with the differential tendency to ascribe higher communal behaviour to the partner. Additionally, strong implicit communal approach motives appear to manifest in the tendency to avoid perceptions of uncommunal partner behaviour. In contrast, there was no evidence supporting the assumption that communal motives would enhance accuracy in the perception of particularly communal partner behaviour. These findings were consistent across the two analytical approaches and highlight the benefits of accounting for explicit as well as

implicit motives in research on partner perception. Future research should extend the present investigation to experimental and observational studies to further explore the perceptual processes that characterise individual differences in motive dispositions.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Mean Prevalences (in %) of Hits, Misses, False Alarms, and Correct Rejections in the Detection of the Partner's Specific Communal and Uncommunal Behaviours
Table S2. General Mean-Level Bias and Tracking Accuracy in the Perception of Partner's Global Communal Behaviour (Without Covariates)
Table S3. Unique Effects of Communal Motives on Mean-Level Bias and Tracking Accuracy in the Perception of Partner's Global Communal Behaviour
Table S4. Unique Effects of Communal Motives on Momentary Perceptions of the Partner's Communal and Uncommunal Behaviours
Table S5. Actual Similarity Between Couple Members' Self-Reported Communal Behaviour
Table S6. Total Mean-Level Bias and Total Tracking Accuracy in the Perception of Partner's Global Communal Behaviour
Table S7. Effects of Communal Motives on Total Mean-Level Bias and Total Tracking Accuracy in the Perception of Partner's Global Communal Behaviour
Table S8. Descriptive Statistics and Correlations (Pilot Sample)
Table S9. Mean Sensitivities and Biases in the Perception of the Partner's Specific Communal Behaviours (Pilot Sample)
Table S10. Effects of Communal Motives on Mean-Level Bias and Tracking Accuracy in the Perception of Partner's Global Communal Behaviour (Combined Data from the Main and Pilot Study)
Table S11. Effects of Communal Motives on Momentary Perceptions of the Partner's Communal Behaviours (Combined Data from the Main and Pilot Study)
Figure S1. Distribution of participants' self-reported global communal behaviuor (person-centred).

Supporting info item

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