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Do Agency and Communion Explain the Relationship Between Perceiver and Target Effects in Interpersonal Perception? A Meta-Analysis on Generalized Reciprocity

Titus Schauf[1], Michael Dufner[2,3], Steffen Nestler[1], and Richard Rau[1]

Abstract

This meta-analysis examines generalized reciprocity, that is, the relationship between how people perceive others and how they are perceived by others. It tests the hypothesis that generalized reciprocity varies as a function of the content domain under investigation. Generalized reciprocity for attributes with primarily communal content (e.g., friendliness) was hypothesized to be more positive than generalized reciprocity for attributes with primarily agentic content (e.g., assertiveness). Sixty-four primary studies reporting correlations between perceiver and target effects with a total number of 17,561 participants were included in the analysis. Results of a multilevel meta-analytical random effects model showed that reciprocity correlations were slightly negative, but around zero, for primarily agentic attributes ($r = -.05$) and became more positive with increasing communal content (up to $r = .18$ for primarily communal attributes). Generalized reciprocity thus varied depending on the extent to which the regarded attribute is agentic versus communal.

Keywords

social relations model, reciprocity, agency and communion, interpersonal perception, interpersonal circumplex

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Generalized Reciprocity

Social interactions make up a major part of our lives. We meet others in our homes, at work, or at the gym and interact with them. During such interactions, we quite naturally form impressions of others and simultaneously, these others also form impressions of us. How are such perceptions related? If Ann sees others as friendly, do these others see her as friendly as well? If Bart sees others as assertive, do these others also see him as assertive or, vice versa, as submissive? Such questions can be addressed with Kenny's (1994, 2019) Social Relations Model (SRM).

The SRM accounts for the complexities of interpersonal perceptions by decomposing them into three distinct components (Back & Kenny, 2010). These components are the general tendencies of perceivers to see others in certain ways (perceiver effects), the general tendencies of targets to be seen in certain ways (target effects), and the unique aspects of a perception about a specific target by a specific perceiver (relationship effects). If the perceiver effect is correlated with the target effect, this is called generalized reciprocity. It indicates that how people see others on some attribute is related to how these others see them on this attribute. This may occur when perceptions track the behavioral dynamics of an interpersonal situation or when perceivers project their self-views onto others (Campbell et al., 1964). For example, imagine Ann behaved friendly and is consequently seen as friendly by others (target effect). This may lead others to behave friendly toward Ann as well, which would let her to see the others as friendly (perceiver effect based on behavioral dynamic). Alternatively, Ann might see others as friendly simply because she sees herself as a friendly person

[1]University of Münster, Germany
[2]University of Witten/Herdecke, Germany
[3]University of Leipzig, Germany

Corresponding Author:
Richard Rau, University of Münster, Fliednerstraße 21, 48149 Münster, Germany.
Email: richard.rau@uni-muenster.de

and believes others to be like her (perceiver effect based on projection).[1]

So, is generalized reciprocity an actual empirical phenomenon? Kenny (1994) meta-analyzed 12 studies reporting correlations between perceiver and target effects and found a coefficient of $r = -.01$ when averaging across the correlations observed on all attributes included in the primary studies. Hence, he concluded that there is "very little evidence" for generalized reciprocity (Kenny, 1994, p. 109), a conclusion he maintained also after considering a more current set of studies (Kenny, 2019). Although Kenny (1994) acknowledged that the lack of an overall effect might be the result of positive and negative coefficients from different content domains canceling each other out, he did not address this possibility empirically. In the current research, we revisit the idea that generalized reciprocity correlations might vary as a function of the content domain that is being investigated. Specifically, we address the possibility that there is negative generalized reciprocity for primarily agentic attributes, such as assertiveness, and positive reciprocity for primarily communal attributes, such as friendliness.

Agency and Communion in Interpersonal Perception

From an evolutionary perspective, social life is governed by two overarching goals (Hogan et al., 1985): Individuals strive to *get along* with others by forming personal ties and being integrated in their ingroup, and they strive to *get ahead* of others by attaining social status and influence. Interpersonal traits or attributes that relate to getting along are primarily beneficial for those surrounding the actor (i.e., *others*) and are said to belong to the domain of *communion*, and attributes that relate to getting ahead are primarily beneficial for the actor (i.e., the *self*) and belong to the domain of *agency* (Abele & Wojciszke, 2007; Bakan, 1966). Also, social perceptions can be categorized as communal (e.g., seeing an actor as *friendly* vs. *hostile*) or as agentic (e.g., seeing an actor as *assertive* vs. *submissive*). Besides such prototypical examples, many types of social perceptions reflect a blend of communal and agentic content (e.g., seeing an actor as *responsible*, which would involve high agency and high communion).

The Interpersonal Circumplex (IPC) conceptualizes agency and communion as orthogonal axes of a circular space in which any attribute of social perception can be located (Gurtman, 1992; Leary, 1957; Wiggins, 1979). Variation in attributes primarily relevant for getting ahead is expressed along the vertical dimension (see the 90° agency axis in Panel A, Figure 1). For instance, if two people are seen as very different regarding assertiveness, they would be placed above/below each other but neither of them would be placed to the left or right of the other. Conversely, two people who differ in friendliness, an attribute primarily functional for getting along, would be placed left and right of each other but not above/below each other (0° communion axis). Variation in an attribute such as responsibleness, a concept reflecting the confluence of high agency and high communion, may be expressed on a 45° axis. As another example, the attribute of competitiveness reflects high agency in conjunction with slightly reduced communion and may thus be expressed roughly along an 112.5° axis. Note that the focus here is on the underlying dimensions rather than the markers used to characterize the dimension's poles. For example, speaking of the dimension of *irresponsibleness* instead of *responsibleness* would not make any difference (see Figure 1, Panel B). In keeping with traditional terminology, we refer to the angular location of a dimension within the IPC as *displacement* (Gurtman, 1992).

Reconsidering SRM Research Through an IPC Perspective

Despite its undoubted relevance and usefulness for the study of interpersonal phenomena, the IPC has hardly been adopted in past SRM studies. Rather, SRM researchers have often either used ad hoc measures to study attributes of specific interest (e.g., leadership behavior, communication style) or they have attended to the Five Factor Model of personality (i.e., extraversion, agreeableness, conscientiousness, neuroticism, openness; John & Srivastava, 1999). However, whereas the Big Five serve well in capturing a large portion of personality variation with few broad factors, they do not accommodate content of interpersonal relevance in a particularly useful way. Specifically, with the exception of agreeableness, the Big Five factors reflect a set of complex and broad constructs which each entail a mixture of agentic and communal interpersonal aspects. Thus, whereas variation in agreeableness can be mapped onto the IPC as being clearly communal, no such unambiguous mapping is possible for the remaining Big Five (Ghaed & Gallo, 2006). When Kenny (1994) investigated generalized reciprocity separately for each Big Five domain, he concluded that "the one consistent result is a correlation for agreeableness." We propose that the relation between the Big Five and the IPC explains this finding.

Interpersonal Complementarity

A fundamental difference between the domains of agency and communion lies in their typical behavioral dynamics. Whereas interaction partners tend to respond to highly agentic behavior (e.g., *assertiveness*) with low agency behavior (e.g., *submission*), they tend to respond to highly communal behavior (e.g., *friendliness*) with high communion behavior (e.g., *friendliness*). This phenomenon is known as interpersonal complementarity and has mostly been studied in dyadic interactions (e.g., Kurzius et al., 2022; Sadler & Woody, 2003). Furthermore,

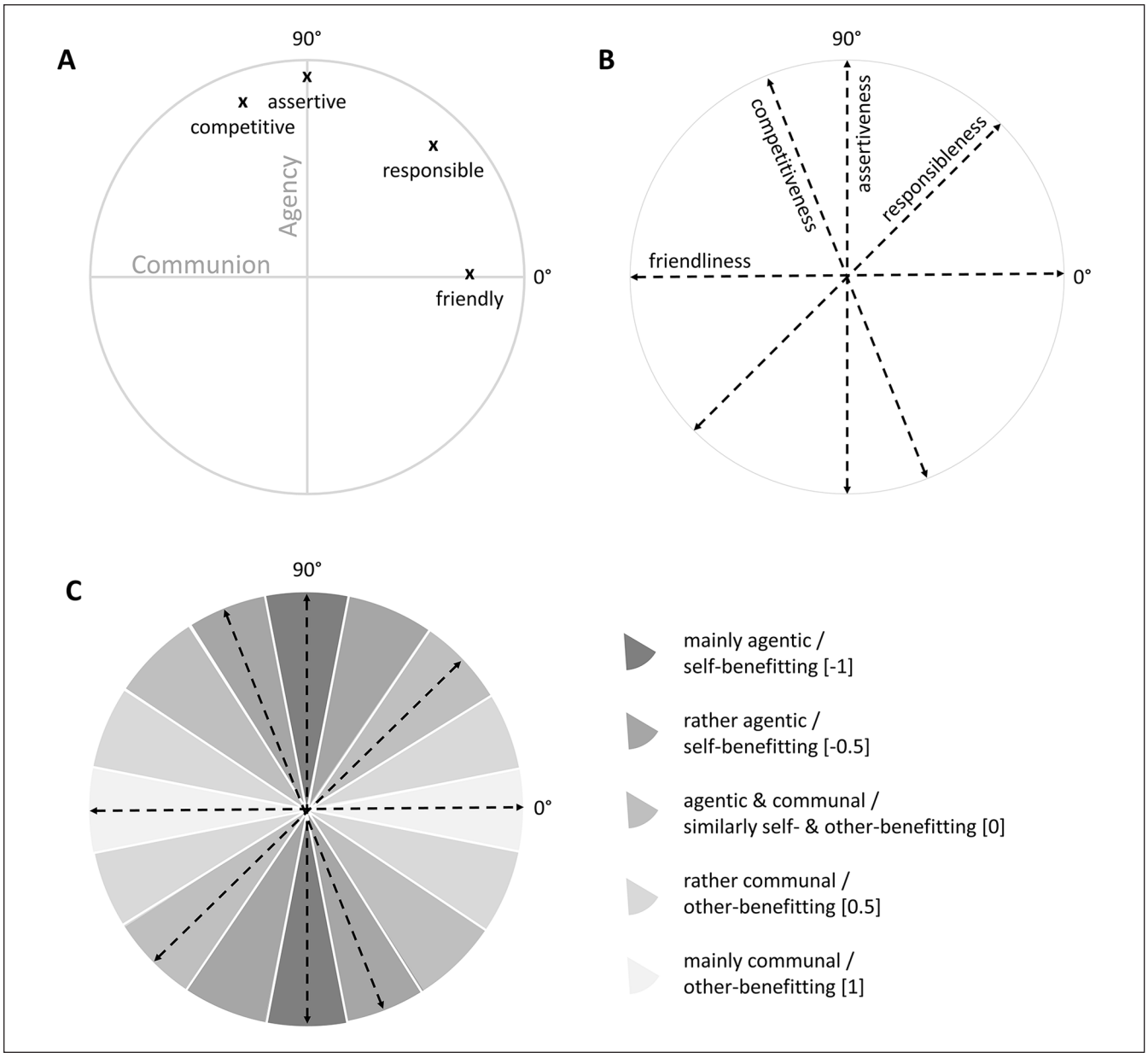

Figure 1. The Interpersonal Circumplex locating specific attributes (Panel A) and their underlying dimension (Panel B). Panel C illustrates our operationalization of displacement as a meta-analytical moderator of generalized reciprocity correlations.

based on past experiences of interpersonal complementarity, people should also have schematic *expectations* of complementarity concerning the social roles and norms within a given social group (Rau et al., 2019). As a consequence of this, mutual perceptions in terms of agentic attributes should quite generally be negatively reciprocal such that someone who is consensually seen as dominant or assertive, for instance, should see others as submissive and insecure. In terms of communal attributes, however, there should generally be positive reciprocity. For instance, someone who is consensually seen as friendly and trustworthy should see others as friendly and trustworthy as well (Dufner et al., 2016).

Based on this reasoning, we suggest that the more communion dominates over agency in an attribute (i.e., the more closely its location in the Circumplex approximates 0°), the more positive generalized reciprocity correlations will be. Vice versa, the more agency dominates over communion (i.e., the more closely its location in the Circumplex approximates 90°), the more negative generalized reciprocity correlations will be.

Initial evidence for this type of pattern was found by Dufner et al. (2016) who studied the correlation between perceiver and target effects separately for agentic and communal attributes in two studies. In the first study, students

worked together in teams and provided mutual personality judgments twice over the course of their first semester. In the second study, participants completed a comprehensive interview which was videotaped and later viewed by unacquainted individuals who provided personality judgments about the person in the video. At the same time, participants also watched the videos of others and provided judgments such that target and perceiver effects could be measured and correlated. In the first study of the article, a null correlation was found for agency ($r = -.03$) and a positive correlation was found for communion ($r = .25$). Results of the second study suggested a negative correlation for agentic traits ($r = -.36$), but a null correlation for communal traits ($r = .01$). A series of follow-up studies among groups of unacquainted individuals by Rau et al. (2019) again found some support for negative reciprocity in agentic judgments but no support for positive reciprocity in communal judgments. In sum, these studies converge on the finding that perceiver-target correlations are strikingly different for agentic versus communal attributes. At the same time, these studies yielded mixed evidence regarding whether the respective effects are different from zero such that agentic reciprocity is significantly negative whereas communal reciprocity is significantly positive.

The absence of a clear evidence for positive communal reciprocity is somewhat surprising given that research on behavioral dynamics unequivocally suggests that interaction partners complement each other not only negatively in terms of agency but also positively in terms of communion. Yet, a certain level of consensus among perceivers, or interrater agreement, is required for these dynamics to manifest in a generalized reciprocity correlation (Kenny, 1994). Consensus has been found to be particularly low when the judged attribute is related to few visible behaviors (John & Robins, 1993) and when perceivers have little exposure to targets (Kenny, 2004). This may explain the absence of generalized reciprocity effects for communion given that this dimension has relatively low visibility and that participants were essentially strangers in the studies described above that found no effect. Furthermore, the relatively low level of exposure may also explain why negative effects for agentic attributes were only found inconsistently across Rau et al.'s (2019) studies. In sum, empirical evidence for negative generalized reciprocity in perceptions of agency and positive generalized reciprocity in perceptions of communion is still preliminary and a larger database is needed that also involves contexts with higher levels of exposure between perceivers and targets. Whereas there exist plenty of such studies in the published literature, very few of them have deliberately investigated perceptions of agency and communion. Nevertheless, the great number and breadth of attributes which have been examined in these studies offers a promising database to take this perspective in a systematic re-analysis.

The Current Research

This meta-analysis re-examines generalized reciprocity correlations from existing interpersonal perception studies through the perspective of an agency-and-communion framework. We expected generalized reciprocity correlations to vary depending on the extent to which an investigated attribute was agentic and self-benefiting versus communal and other-benefiting (*displacement*). We also considered several further moderators that might have an impact on the size of a generalized reciprocity effect. Specifically, we considered the amount of *exposure* between perceivers and targets and the *visibility* of attributes because both of these features contribute to higher levels of consensus and may thus affect the likelihood of observing generalized reciprocity effects (Kenny, 1994). Furthermore, we included information on the *evaluativeness* of attributes because reciprocity in positivity or liking, which is unrelated to trait content, may partially produce perceiver-target correlations as well (Rau et al., 2019). For example, perceivers who like most people may also be liked by most people (Kenny, 2019) and to the degree that an item used to measure some trait has an evaluative tone to it, this (positive) reciprocity in liking will also produce positive reciprocity in the judgments concerning that trait (Leising et al., 2015). We also considered differences in the average number of perceivers who judged a target (*group size*) as this affects the reliability of the perceiver and target effects (Bonito & Kenny, 2010) and therefore might explain variation in effect sizes as well. Furthermore, we also explored the possibilities that studies which used mixed-gender versus same-gender groups (*gender*), which were published versus unpublished (*publication status*) might yield different effect sizes. Finally, we considered the effect of the type of the relationship (*relationship type*, peer groups vs. family groups).

To check whether a narrower, alternative operationalization of agency and communion would be fruitful, we also looked into different sub-facets of the two domains. Specifically, *assertiveness* and *competence* have been proposed as sub-facets of agency, and *warmth* and *morality* have been proposed as sub-facets of communion (Abele et al., 2016). We tested whether different effect size estimates would be obtained when focusing on these sub-facets rather than using a more inclusive operationalization.

Finally, we investigated whether generalized reciprocity is a phenomenon that can be explained by differences in self-views alone or whether behavioral dynamics also likely play a role. To that end, we controlled for self-reports on the attribute at hand (whenever raw data were available to us) and re-estimated the meta-analytic generalized reciprocity effect. If generalized reciprocity was exclusively rooted in the projection of self-views, this should eliminate any systematic variation in generalized reciprocity across content domains.

Method

Literature Search

We used PsychInfo and PSYNDEX to identify published research articles that used SRM methodology to study interpersonal perception. For this purpose, we screened the abstracts of all studies with the keyword *social relations model* combined with *social perception, interpersonal relations, group processes, interpersonal interaction, personality judgment, interpersonal perception, social interaction, trait judgment, group interaction, person perception*, or *individual differences* and of all studies with the keyword *social/interpersonal perception* combined with *group processes, group interaction*, or *individual differences*. This yielded 462 studies using SRM methodology. These studies involved a variety of groups engaging in a variety of social contexts. For instance, some studies were conducted with families, others with class-mates, work teams, psychotherapy patients, and singles meeting in speed dates. Based on the studies' abstracts, we excluded those that studied contexts that appeared nonrepresentative for basic everyday interpersonal perception. For example, we excluded all studies among psychotherapy patients because we wanted to exclusively study non-pathological samples, and we excluded dating studies because mating-related social cognition might overshadow mating-unspecific social perception processes. Past research has, for example, shown that generalized reciprocity for attraction is negative in speed dating contexts, whereas it is positive in non-romantic contexts (Eastwick et al., 2007).

Overall, 126 of the 462 SRM studies met the criterion of addressing basic everyday interpersonal perceptions. Of these, 16 could be directly included because they reported the perceiver-target correlations or covariances for the assessed attributes. For the remaining studies, we contacted the corresponding authors via e-mail and requested the data or the perceiver-target correlation. Of note, one of the studies for which authors provided data was a meta-analysis that featured 24 original studies from the 1980s, 1990s, and 2000s (Kenny & West, 2010). Because this meta-analysis used inclusion criteria identical to ours, we included these studies and did not look further for studies published before 2010. Contacting the authors of all post-2010 articles added another 28 studies. Furthermore, data of an unpublished study were made available to us by acquainted researchers, and one published study was excluded because of a major methodological flaw which we discovered during the literature review process, leaving a total of $k = 68$ studies. Finally, Kenny (1994) suggests that generalized reciprocity correlations should only be interpreted if there is a non-negligible amount of consensus (i.e., 10% target variance) and also in assimilation (i.e., 10% perceiver variance). Therefore, we excluded three studies in which this criterion was not met for either attribute. We excluded one further study because it analyzed the same data as a previously included study, resulting in a final set of $k = 64$ studies. The PRISMA flow diagram (Page et al., 2021) provides a graphical representation of the search procedure (Figure 2).

Usually, SRM studies assess the mutual perceptions of participants on several attributes. Thus, we had to determine for which of the assessed attributes we considered the generalized reciprocity correlations in our meta-analysis. We included attributes that broadly reflected a personality judgment or a trait rating, but excluded attributes focusing on specific behaviors, physical appearance, or liking. The $k = 64$ studies comprised generalized reciprocity correlations for 467 attributes. From these, 77 attributes were excluded because they did not qualify as personality judgments and 96 attributes did not have sufficient perceiver and target variance. Thus, the final data comprised perceiver-target correlations for $j = 294$ attributes from $k = 64$ studies with a total $N = 17{,}561$ participants. Table 1 shows descriptive statistics for the relevant study characteristics and attribute characteristics. We used the perceiver-target correlation as effect size in this meta-analysis. Whenever covariances rather than correlations were reported, we computed the corresponding correlation coefficient based on the perceiver and target variances. When we had access to the raw data, we computed the correlation with the *R* package *TripleR* (Version 1.5.3; Schönbrodt et al., 2012). Additional materials including details on the rating instructions, study-level data, and analysis code can be retrieved from the open science framework (https://osf.io/zv4da/?view_only=18f66a0721684988bdbe6af7ded86587). This study was not preregistered.

Coding of Study Characteristics and Attribute Characteristics

The attributes assessed in the individual studies were rated by 10 trained research assistants on three different dimensions. First, they judged the extent to which each attribute was agentic/self-benefiting versus communal/other-benefiting (*displacement*). They independently rated the attributes on a 5-point scale (0 = *mainly agentic/self-benefiting*, 1 = *rather agentic/self-benefiting*, 2 = *agentic and communal/similarly self- and other-benefiting*, 3 = *rather communal/other-benefiting*, and 4 = *mainly communal/other-benefiting*). For the analyses, we rescaled *displacement* ranging from −1 (*mainly agentic*) to 1 (*mainly communal*). Panel C in Figure 1 illustrates how these categories map onto the Interpersonal Circumplex. Table 2 shows exemplary attributes for the different levels of displacement. Attributes identified as being primarily agentic (i.e., displacement $<$ –0.2) were additionally classified in terms of the sub-facets of agency, that is, as *assertiveness-related, competence-related*, or *other* by the first author. The same was done for primarily communal attributes (displacement $>$ 0.2) with the categories *warmth-related, morality-related*, and *other*.

Raters also evaluated the *exposure* of participants within the study context on a 4-point scale (0 = *zero acquaintance*, 1 = *low level of acquaintance*, 2 = *well acquainted*, 3 = *friends,*

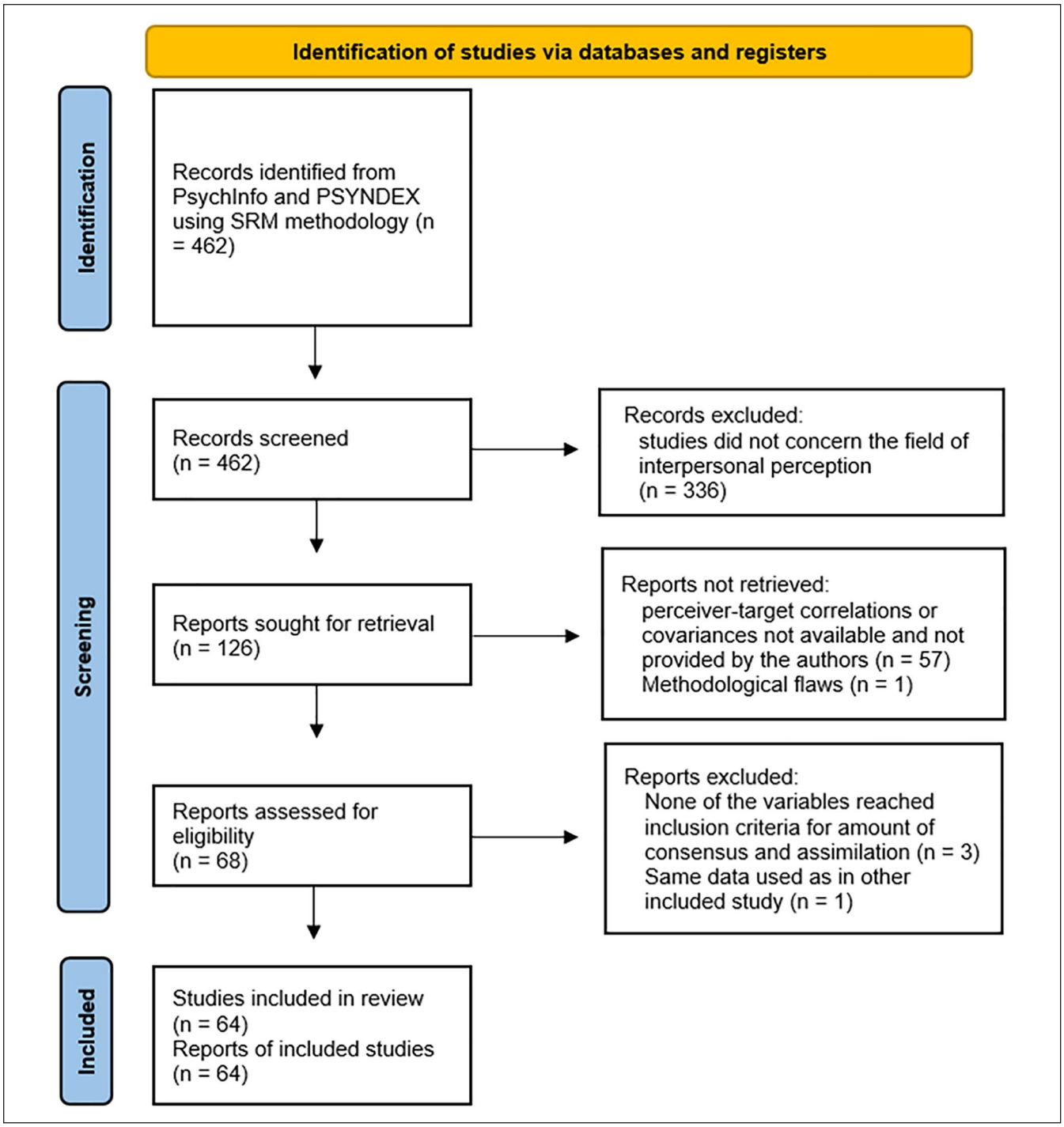

Figure 2. PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers (Page et al., 2021).

family) and each attributes' *visibility* on a 5-point scale (0 = *low visibility*, 1 = *rather low visibility*, 2 = *medium visibility*, 3 = *rather high visibility*, 4 = *high visibility*). Importantly, the visibility of attributes may vary depending on contextual factors (e.g., "thoroughness" can be judged easily when a target is observed working on a task but less so when observed chatting about hobbies). Therefore, attributes were presented to raters along with short descriptions of the respective study's social context (see Online Supplemental Material), and raters were instructed to judge the visibility of the attributes given that context. In addition, the attributes were rated regarding their desirability on 9-point scale (–4 = *highly undesirable*,

Table 1. Descriptive Statistics of Study Characteristics and Attribute Characteristics.

Variable	*M*	*SD*	Minimum	Maximum	Reliability
n (number of participants)	278.7	336.4	30	1,780	
j (number of eligible attributes)	4.59	5.34	1	28	
Displacement (−1 to 1)	0.09	0.55	−1	1	.93
Visibility (0 to 4)	2.63	0.73	0.44	4	.87
Evaluativeness (0 to 4)	2.32	0.87	0.25	4	.96
Exposure (0 to 3)	1.38	0.68	0	3	.97
Group size	11.21	19.83	3	113	
	%				
Gender distribution (% of same-gender vs. mixed-gender studies)	22				
Publication status (% of published vs. unpublished studies)	98				
Relationship type (% of family vs. peer studies)	8				

Note. Reliability was computed as the intra-class correlation coefficient ICC(3, *k*) as proposed by Shrout and Fleiss (1979).

0 = *neutral*, 4 = *highly desirable*).[2] We used the absolute values of these ratings to index evaluativeness (0 = *not evaluative*, 4 = *highly evaluative*). All of the ratings reached high reliability (see Table 1).

In addition to these ratings, we also coded the total number of participants in each study (*n*), the average group size of the studied groups, a dummy variable gender (0 = *perceivers judged mixed-gender targets*, 1 = *perceivers exclusively judged same-gender targets*), a dummy variable publication status (0 = *unpublished*, 1 = *published*), and a dummy variable relationship type (0 = *peers*, 1 = *family*).

Analyses

We meta-analyzed Fisher's *z* transformed generalized reciprocity correlation coefficients using the *metafor* package (Version 2.4-0; Viechtbauer, 2010) in R (R Version 4.0.2; R Core Team, 2020). We estimated a multilevel random effects model that allows for between-study variance, within-study variance, and sampling variance using restricted maximum likelihood estimation. Thus, the model accounted for influences that are constant for different effect sizes coming from the same study, such as dependencies between effect sizes for differing attributes assessed in the same sample, but also for influences that are different for different effect sizes from the same study and for unsystematic variance due to sampling error.[3]

Regarding publication and reporting biases, it is important to note that the primary studies did not investigate the same research question as this meta-analysis. Instead, the studies reflected a very heterogeneous pool of research on various interpersonal phenomena conducted in various contexts. Therefore, asymmetry in generalized reciprocity effect sizes due to publication bias seemed unlikely. To be safe, we nevertheless investigated the model for asymmetry of the data due to publication or reporting biases. We did so by testing whether the magnitude of the effect sizes was dependent on their standard error, a practice that is suited for meta-analytical models with multiple variables and dependencies among effect sizes (Viechtbauer, 2015). The test for asymmetry was negative such that the standard errors of the effect sizes did not have significant influence on the model ($p = .128$).

After establishing our baseline model, we subsequently tested displacement, visibility, evaluativeness, exposure, group size, gender, publication status, and relationship type as potential moderators. We applied the so-called Knapp–Hartung–Sidik–Jonkman estimation method by setting the argument "tdist = TRUE" in all analyses because this method has been found to outperform the standard DerSimonian–Laird approach in terms of warranting nominal Type-1 error rates (IntHout et al., 2014; Knapp & Hartung, 2003; Sidik & Jonkman, 2007). Although we did not run a power analysis, simulation studies suggest that statistical power is excellent for a meta-regression with the number and heterogeneity of effect sizes given in the present analyses, even for the detection of weak moderator effects (Viechtbauer et al., 2015). To explore potential differences in generalized reciprocity *within* the domains of agency and communion, we re-ran our meta-analytic model using different subsets of the data. Specifically, we estimated and compared the average effects when exclusively considering attributes that mapped single facets of the domains of agency and communion.

Aggregation of Dependent Effect Sizes

There were some instances in which multiple effect sizes were available for the same attribute coming from the same study. For example, some studies reported multiple perceiver-target correlations for different groups (e.g., groups of friends and groups of family members) or for different roles

Table 2. Different Levels of Displacement and Exemplary Attributes.

Displacement	Number of attributes	Examples of attributes	Sub-facet classification
Displacement $<$ (−0.6) Mainly agentic/self-benefiting	28	Assertive Ambitious Powerful	Assertiveness Assertiveness Assertiveness
(−0.6) $\leq$ Displacement $<$ (−0.2) Rather agentic/self-benefiting	73	Leadership Intelligent Influential Competitive Effortful	Assertiveness Competence Other Assertiveness Competence
(−0.2) $\leq$ Displacement $<$ 0.2 Agentic and communal/similarly self and other-benefiting	70	Responsible Open to new experiences Calm Relaxed Imaginative	
0.2 $\leq$ Displacement $<$ 0.6 Rather communal/other-benefiting	46	Talkative Attentive Outgoing Contributes to the team Funny	Other Morality Other Morality Other
Displacement $>$ 0.6 Mainly communal/other-benefiting	77	Good-natured Cooperative Agreeable Sympathetic Friendly	Warmth Morality Other Warmth Warmth

within the family (e.g., father, mother, child). Furthermore, there were longitudinal studies which reported effects for several time points. For the majority of our meta-analytic models, we aggregated these effect sizes using Fisher's *z* transformation. However, we considered the possibility that, in longitudinal studies, the level of exposure between participants changed from one time point to another. We thus asked coders to judge *exposure* separately for each time point and averaged only those time points with the same level of exposure. Effect sizes from time points with different levels of exposure were treated as independent when analyzing a potential moderation effect for exposure but were aggregated in all remaining analyses.

Results

Aggregated Effect Size

The average effect size was $\bar{r} = .074$ with a 95% confidence interval [CI] = [.031, .118]. Thus, the generalized reciprocity correlation across all attributes was slightly positive and significantly different from zero. More importantly, there was considerable heterogeneity in effect sizes, $\tau^2 = 0.051$, with a 95% prediction interval [PI] = [−.371, .515]. This suggests that the true population effect sizes across studies and attributes covers a wide range including both positive and negative values. Consistent with this, Cochran's Q statistic indicated significant heterogeneity, $Q(df = 293) = 3{,}274$, $p < .001$. The correlation between effect sizes within studies was estimated to be $\rho = .308$, indicating that part of this heterogeneity was due to systematic variation from study to study and thus implies that features of the designs, samples, or used measures created systematic dependencies in the data. Overall, 28.2% of the variance in effect sizes occurred between studies, whereas 63.5% occurred within studies, and 8.3% were attributable to random sampling error. This implies that the majority of variance was observed between effect sizes coming from the same study and points toward possible moderations by an attribute's displacement, visibility, or evaluativeness. In addition, there was also considerable between-study variance suggesting that study-level differences, such as variation in displacement, visibility, evaluativeness, and also in exposure, group size, gender, publications status, or relationship type may exist as well.

Moderator Analyses

To test for moderation effects, we estimated meta-analytic models for each moderator. Results are presented in Table 3.

Displacement, visibility, and evaluativeness trait moderators that vary between and within studies significantly predicted variation from attribute to attribute. These effects were positive such that larger reciprocity correlations were found for more communal, more visible, and more evaluative attributes. Of the between-study moderators, relationship type explained a significant amount of heterogeneity such that larger reciprocity correlations were found for family studies than for peer studies. To investigate whether or not these moderator effects operated independently from

Table 3. Results of Moderator Analyses.

Level	Moderator	β [95% CI]	*p* value
Trait moderators	Displacement	0.113 [0.069, 0.157]	<.001
	Visibility	0.047 [0.008, 0.087]	.02
	Evaluativeness	0.051 [0.021, 0.080]	<.001
Between-study	Exposure	0.044 [−0.012, 0.101]	.125
	Group size	−0.002 [−0.005, 0.001]	.263
	Gender	0.021 [−0.090, 0.133]	.706
	Publication status	−0.083 [−0.427, 0.260]	.634
	Relationship type	0.329 [0.131, 0.528]	<.001

Note: CI = Confidence Interval.

Table 4. Results of the Moderator Analysis in a Combined Model.

Level	Moderator	β [95% CI]	*p* value
Trait moderators	Displacement	0.084 [0.031, 0.136]	.002
	Visibility	0.020 [−0.020, 0.060]	.322
	Evaluativeness	0.020 [−0.013, 0.053]	.227
Between-study	Relationship type	0.246 [0.053, 0.440]	.013

Note. CI = Confidence Interval.

each other, we entered all significant moderators into a combined model. This was especially indicated due to a strong intercorrelation between displacement and evaluativeness (r = .49; remaining intercorrelations of trait moderators were r_{DispVis} = .18 and r_{EvalVis} = .00) and because the few family studies in the model covered exclusively communal attributes ($M_{\text{Displacement}}$ = .73, *Min* = 0.4, *Max* = 0.95). In this combined model, only the effects of displacement and relationship type remained significant, suggesting that differences in visibility and evaluativeness were only predictive of generalized reciprocity to the extent they were linked to differences in displacement (Table 4). Thus, we do not consider visibility and evaluativeness as unique moderators of generalized reciprocity effects.

To better understand the strength of the moderating effect by displacement, we plotted the generalized reciprocity correlations that are implied for the different levels of displacement in the model with displacement as the only moderator (black elements in Figure 3). For attributes rated as mainly agentic (displacement = −1), the expected correlation coefficient was −.053, 95% CI = [−0.12, 0.01]. With each increment toward more communal content, the expected effect size increased by r = .06. Thus, as hypothesized, higher levels of displacement went along with more positive generalized reciprocity effects and reached a modestly sized expected effect of r = .18 for attributes rated as mainly communal.

Whereas the moderation effect by displacement was in the expected direction, the average correlation for mainly agentic attributes was not significantly negative, as would be expected based on a complementarity mechanism in interpersonal perceptions. One explanation for this might be that negative reciprocity is limited to peer studies given that we observed correlations in family studies to be substantially more positive in general. Another explanation may be that the items meta-analyzed here were not an optimal, random sample in the sense of evenly covering agentic and communal attributes while being balanced for other item characteristics. Instead, the items at hand oversampled communal content and were, on average, somewhat evaluative rather than neutral (see Table 3).

Whereas the evaluative nature of the meta-analyzed items is not problematic for communal attributes, it is potentially problematic for agentic attributes. Evaluation has been argued to be an inherent part of communion (Imhoff & Koch, 2017) which essentially means that by describing a target as highly communal, a perceiver automatically reveals that they like the target. Agentic judgments, however, need not be evaluative such that describing a target as highly agentic does not necessarily reveal liking or disliking of the target. Thus, to explore the range of generalized reciprocity effects spanning from evaluatively neutral items tapping agentic content (0 = *evaluativeness*, –1 = *displacement*) to evaluatively extreme items tapping communal content (4 = *evaluativeness*, 1 = *displacement*) in peer groups (0 = *relationship type*), we additionally plotted the respective conditional effects from a model with these three predictors (see gray elements in Figure 3). This produced a similar forest plot as before except that estimates were slightly spread and shifted in the negative direction, resulting in a statistically significant negative effect for mainly agentic and evaluatively neutral attributes. Thus, whether an attribute comprises agentic versus communal

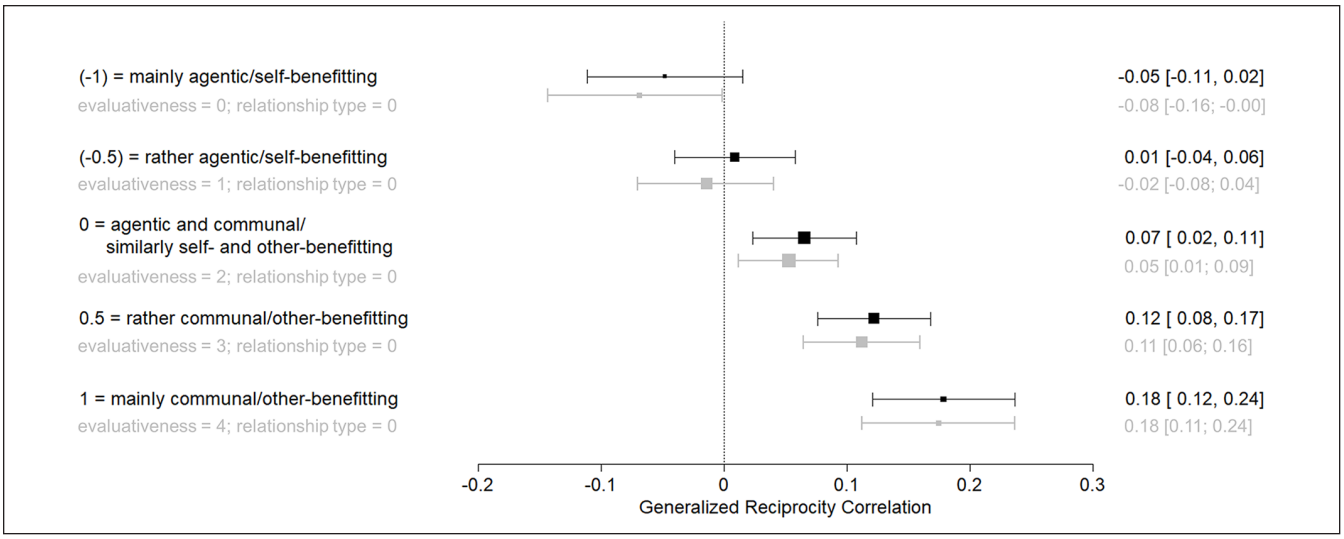

Figure 3. Forest plot showing the predicted correlation coefficients with 95% confidence intervals conditional on displacement (black elements) and conditional on displacement, evaluativeness, and relationship type (gray elements).

Table 5. Results of Sub-Facet Level Analyses for Agency and Communion.

Domain	Facet	Mean displacement	*j*	*k*	*n*	$\bar{r}$ [95% CI]
Agency	Competence	−0.49	33	23	5,973	−.026 [−.123, .071]
	Assertiveness	−0.59	39	25	4,447	.021 [−.074, .116]
	Other	−0.63	15	10	1,874	−.036 [−.111, .038]
Communion	Warmth	0.78	42	28	7,217	.173 [.07, .276]
	Morality	0.59	26	16	2,984	.155 [.032, .277]
	Other	0.58	55	30	7,484	.087 [.008, .166]

Note. j = number of attributes; k = number of studies; n = number of participants.

content can change the sign of a perceiver-target correlation from negative to positive as long as agentic attributes are assumed to be evaluatively neutral whereas communal attributes are assumed to be highly evaluative. Finally, we explored whether the effect of displacement was moderated by any of the remaining variables, but we found no significant interaction effects upon correcting the Type 1 error rate for multiple testing (all $ps > .05 / 7 = .007$).

Additional Analyses

In addition to our primary analysis, we considered the possibility that displacement may explain the occurrence of generalized reciprocity better under a narrower definition of agency and communion. To this end, we estimated the average effect sizes separately for attributes from each of the subfacets of agency and communion. The results from a model with displacement as the only moderator are shown in Table 5. Similar to the main findings above, perceiver-target correlations for both sub-facets of agency and the rest category were not significantly different from zero whereas communal attributes from all categories were significantly positive. Within each domain, differences between the categories were not significant as is implied by their overlapping confidence intervals. Thus, the relative weakness of effects could not be explained by discrepancies between facets. We also tested another post hoc explanation for the limited size of negative reciprocity for agentic attributes by rating the level of interdependence among participants based on the study descriptions and exploring whether more negative effects would be found in high versus low interdependence settings. The rationale behind this is that only when people have interdependent goals may agentic information about the other be of direct relevance to the self (Abele & Wojciszke, 2007; Wojciszke & Abele, 2008; Ybarra et al., 2001). However, we found no evidence for this explanation either.

Finally, we explored whether or not generalized reciprocity correlations persist, once variation in self-views is controlled. To this end, we meta-analyzed the effect sizes of eight studies for which the necessary raw data to compute partial correlations between perceiver and target effects controlling for self-perceptions were available to us ($j = 76$, $n = 2{,}244$). This subset of studies was similar to the full set of studies in terms of demographic variables and design

features (for details, see the appendix) and revealed that the crucial result remained virtually unchanged no matter whether zero-order correlations versus partial correlations were analyzed. Specifically, whereas the overall effect size of the eight studies was slightly negative both for zero-order and for partial correlations, $\bar{r} = -.105$ and $-.032$, they both were moderated by *displacement* just as they were in our main analysis, $\beta s = .061$ and .043 ($ps < .001$), respectively. Thus, the pattern of more positive perceiver-target correlations occurring with an attribute's increasing relation to communion over agency was independent of variation in self-views. This supports the notion that generalized reciprocity is likely produced by actual behavioral dynamics within the interpersonal situation rather than by perceptual biases grounded in the perceiver's personality self-concept.

Discussion

The current research tested whether generalized reciprocity in interpersonal perception varies depending on the degree to which the investigated attribute is communal (i.e., primarily beneficial to others) versus agentic (i.e., primarily beneficial to the self). Specifically, we hypothesized that people may see others similar to how they themselves are seen on attributes that are more communal than agentic but that they are seen as dissimilar on attributes that are more agentic than communal. We meta-analyzed 296 perceiver-target correlations originating from 64 independent studies involving 17,561 participants. In line with our hypothesis, the heterogeneity of effect sizes was partly explained by the primary content domain of the judged attribute, ranging from agentic to communal, and this moderation effect went in the hypothesized direction. Generalized reciprocity was positive, moderate in size, and significantly different from zero for communal attributes. Somewhat other than predicted, effects for agentic attributes were descriptively negative but small in size and not significantly different from zero when considering the entire range of primary studies. However, significant negative effects for agency were observed when people interacted with peers (rather than family members) and when they judged neutral (rather than extremely desirable or undesirable) personality attributes. Taken together, the findings indicate that the notion of "very little evidence" for generalized reciprocity in trait judgments (Kenny, 1994, p. 109) needs to be revised. One would conclude that generalized reciprocity is indeed an empirical phenomenon that spans both negative, zero, and positive effects depending on the agentic versus communal content of the judged attribute. This pattern lines up with findings from the few previous studies on generalized reciprocity that have deliberately addressed the role of trait content (Dufner et al., 2016; Rau et al., 2019). Thus, by employing an IPC perspective, the current research resolves a lingering issue in the social perception literature.

Implications

For researchers, a key take-away from this meta-analysis is that the concepts of agency and communion can effectively be used to organize the content of interpersonal perceptions and explain patterns in perceiver-target correlations that may otherwise be overlooked. Even though only five of the 64 primary studies analyzed here originally adopted an IPC perspective (12 adhered to the Five Factor Model, and the remaining studies did not adhere to any particular trait model whatsoever), we were able to reliably map the assessed attributes onto the IPC by collecting ratings of displacement. While it is our contention that a deliberate assessment of the IPC octants promises the most insights into interpersonal phenomena such as reciprocity, even a post hoc mapping of personality items from the Big Five tradition (Entringer et al., 2021) or other inventories onto the IPC may often be worthwhile.

Substantively, the most important insight is the robust positive meta-analytic effect for primarily communal attributes implying that judgments concerning warmth versus coldness, friendliness versus hostility, or honesty versus manipulativeness tend to be reciprocated across many social contexts. That is, irrespective of whether a perceiver interacts with few or many others, whether these others are a same-gender or a mixed-gender group, and whether they are poorly versus well known to the perceiver, his or her tendency to see them as more or less communal likely resonates somewhat with his or her reputation in terms of communion among them. In families, this effect is enhanced which suggests that variation in how friendly and warm people see their brothers, sisters, parents, or children, is a quite powerful predictor of how friendly and warm they themselves are seen by these family members.

The most obvious explanation for the positive reciprocity effect lies in the behavioral dynamics that are implied by people's perceptions of others' communion: High perceived communion in the other affords highly communal behavior by the self, whereas low perceived communion affords less communal behavior by the self (and vice versa). This explanation was corroborated indirectly by our additional analyses, which showed that reciprocity cannot be explained away by an alternative process in which differences in terms of people's communal self-concepts cause the reciprocity effect. In the words of Campbell and colleagues (1964), who first speculated about sources of generalized reciprocity, there seems to be "complementary projection" rather than mere "similarity projection" or "contrast projection."

Although there was clear evidence for positive reciprocity in communal judgments and although this effect became increasingly negative with increasing agentic trait content, we found no clear evidence that generalized reciprocity in judgments of primarily agentic attributes is generally negative, even so after we considered potential differences between sub-facets (competence, assertiveness) and between degrees of interdependence between perceivers and targets as post hoc explanations. However, we observed a zero-order

effect of evaluativeness such that more evaluative items produced more positive generalized reciprocity effects, and evaluative items were overrepresented in our meta-analysis. Taking this into consideration yielded a slightly larger range of conditional effects spanning not only positive effects for evaluatively extreme communal attributes but also negative effects for evaluatively neutral agentic attributes in peer studies.

The role of evaluativeness has important theoretical implications and deserves some elaboration. What distinguishes an evaluative item from a neutral one is that with the former, perceivers not only express their substantive trait perception of a target but also how much they like or dislike the target (Leising et al., 2015). Consider the items "smart" (evaluativeness = 4) and "analyzes information" (evaluativeness = 0.25). Both these items tap agentic content (competence facet) but only the former is additionally capable of communicating the perceiver's attitude toward the target. If Ann dislikes Bart and witnesses him solve a complex analytical problem, she will readily describe him as analytical but be reluctant to describe him as smart. The reason why this is relevant is that research has shown that perceivers differ quite strikingly in how much they generally like versus dislike others such that a substantial amount of the variance in perceiver effects goes back to differential *positivity* (Heynicke et al., 2021; Rau et al., 2021; Srivastava et al., 2010). This implies that a highly positive perceiver (i.e., a "liker") who sees others as smarter than the average perceiver, for instance, may not necessarily do so because of some competence-related observation they have made of the targets but perhaps out of a general habit of seeing the best in people.

Now, just as for communion, one might expect a positive perceiver-target correlation for constructs related to unspecific positivity (e.g., "likers are liked"), a notion that has received some empirical support (Kenny, 2019). As a consequence of this, perceiver and target effects for an item such as "smart" may be largely uncorrelated because a positive relation is expected for the evaluative portion of the perceiver effect whereas a negative relation is expected for the substantive portion of the perceiver effect. In other words, negative generalized reciprocity effects for agentic attributes might be obscured by effects of unspecific positivity differences between perceivers.

Considering the evaluativeness of attributes as a meta-analytic covariate yielded some support for this argument in that it slightly shifted the conditional effects so as to produce negative reciprocity for primarily agentic attributes. However, our approach likely did not address the entire complexity of the role global evaluation plays in reciprocal interpersonal perception and the best way forward will be for future primary studies to deliberately assess perceptions on agentic items that are evaluatively neutral. In terms of communion, it seems that judgments about others are intertwined with global evaluation (Imhoff & Koch, 2017) so whether, and if so, how the positive reciprocity effects of communal trait content can and should be isolated from effects of liking or global evaluation is an important question to be resolved in future primary studies. In addressing this issue, researchers should take a multivariate approach that allows for statistically modeling higher-order factors (Nestler et al., 2020) rather than examining interpersonal perceptions in a trait-by-trait manner, as has traditionally been done.

Limitations and Future Directions

Although we found unambiguous evidence for the hypothesis that generalized reciprocity correlations vary with an attribute's relation to agency versus communion, it needs to be noted that this moderator accounted only for a minor part of heterogeneity in the observed effects. Whereas the meta-analytic regression coefficient implies that displacement can explain a difference in perceiver-target correlations for two different attributes of up to $\Delta r = .23$, true effect sizes were estimated to span from $r = -.37$ to $r = .51$ (95% PI), thus illustrating the large portion of heterogeneity remaining to be explained by variables other than an attribute's location in the IPC. Although we found that studies involving families rather than peer groups showed greater generalized reciprocity, none of the remaining moderators we considered were able to explain heterogeneity in our data. This might indicate that the occurrence of generalized reciprocity traces back to highly specific situational characteristics of the studies or combinations thereof which we were unable to capture in our meta-analytic review.

Regarding the effect of families versus peers, it has to be mentioned that only five of the 64 primary studies involved family members and that those five studies assessed exclusively communal attributes. As such, the effect of particularly positive reciprocity among families should be interpreted with caution as there was a built-in imbalance in the data that hampers generalizations to the agentic domain. Future work studying reciprocity among family members could make a valuable contribution by deliberately assessing mutual perceptions in terms of agency. It would also be promising to investigate reciprocity on the relationship-level, that is dyadic reciprocity, in family studies. Other than in members of peer groups, family members have natural roles (father, daughter, etc.), and it seems plausible that interpersonal perceptions are reciprocated differently depending on the particular combination of roles. For example, perceptions of dominance and submissiveness may be highly reciprocal in parent–child dyads but less reciprocal in child–child or parent–parent dyads.

Another aspect in which our data were not particularly informative concerns the follow-up analyses controlling for variation in self-views for which we only had access to a drastically reduced sample of effect sizes. However, this reduced sample was fairly representative of the overall sample of effect sizes such that a certain confidence in the finding that reciprocity does not appear to result from projection still seems warranted. Nevertheless, additional work is needed that elaborates further on the role of self-views. Here, we treated self-views as a measure of stable differences in people's personality self-concept, but they may also be regarded as the product of

an ongoing process of identity negotiation within a social situation (Swann, 1987) and might thus also be involved more dynamically in creating reciprocal perceptions. For instance, experimental studies suggest that the spontaneous self-construal of people who anticipate an interaction with a particular partner complements this partner in terms of agency (contrast) and communion (assimilation; Tiedens et al., 2007; Tiedens & Jimenez, 2003). Future studies should therefore try to incorporate self-perceptions not only on a trait-level but also on a state-level. More generally, zooming in on temporal dynamics will be an important step in better understanding the causal mechanisms behind generalized reciprocity. For example, dynamic reciprocal perceptions within work teams or families may be captured repeatedly using ambulatory assessment or they may be directly linked back to specific behaviors that are continuously observed in the video laboratory.

In sum, a generalized reciprocity correlation is likely the product of a complex interplay of self-construal, other-perception, behavior, and reputation operating dynamically over time and on different levels of the trait hierarchy (global positivity, trait-specificity). While recent statistical advances make it possible to model these complexities (Nestler et al., 2020, 2022), a comprehensive theoretical model that organizes all of the above-mentioned aspects and generates testable predictions is still lacking and would go a long way in advancing research on generalized reciprocity and interpersonal perception more broadly.

Constraints on generality. The primary studies that were included in this meta-analysis almost exclusively investigated White, educated, industrialized, rich, and democratic (WEIRD) samples. One study included half of the participants from China (Locke et al., 2014), another study investigated delinquent youths (Grafeman et al., 2015), and another investigated groups of sex-offenders in a mental health center (Mahaffey & Marcus, 2006). Also, the five family studies and three studies among school children included non-WEIRD participants. Nevertheless, WEIRD participants were clearly overrepresented in our analysis, and results should not be generalized to non-WEIRD contexts. In collectivistic (rather than individualistic) societies for example, reciprocity has been argued to be particularly high whenever there is an imbalance in status with strong behavioral norms existing both for high-status individuals (leadership) and low-status individuals (followership; Triandis, 2001). As such, negative generalized reciprocity for perceptions of agency might be pronounced in these societies, at least when studied in contexts involving mixed-status groups. At the same time, positive generalized reciprocity for perceptions of communion might be reduced in societies that have strong general norms for high communion behavior. For instance, there is a strong norm for politeness in Japan and a consequence of this could be a lack of variation in interpersonal behavior along the communion axis of the IPC which would attenuate effects of reciprocity in the perception of warmth, friendliness, and so forth.

Conclusion

The present meta-analysis has shown that generalized reciprocity is not some kind of abstract principle that can be observed for any attribute of interpersonal perception but that it instead manifests first and foremost when judgments concern the overarching theme of "getting along." Despite the discussed limitations and open questions that need to be addressed in future research, the fact that whether an attribute primarily taps into agentic versus communal content emerged as a clear moderator of generalized reciprocity testifies to the usefulness of a two-dimensional framework of trait content as discussed in the interpersonal (Wiggins, 1979, 1991) and social psychological (e.g., Abele & Wojciszke, 2007) literature. As such, thinking in terms of agency and communion appears promising when trying to explain how people meeting at the bakery or the gym will perceive each other.

Appendix

Descriptive Statistics of Study Characteristics and Attribute Characteristics of the Eight Studies With Self-Reports.

Variable	*M*	*SD*	Minimum	Maximum
n (number of participants)	224.4	153.2	95	543
j (number of eligible attributes)	9.50	4.44	4	18
Displacement	2.20	1.17	0.2	4
Visibility	2.37	0.72	0.5	3.7
Exposure	1.20	0.54	0	2
Group size	5.17	0.78	4.43	6.39
	%			
Gender distribution (% of same-gender vs. mixed-gender studies)	0			
Publication status (% of published vs. unpublished studies)	100			
Relationship type (% of family vs. peer studies)	0			

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ORCID iD

Titus Schauf https://orcid.org/0000-0003-2571-968X

Supplemental Material

Supplemental material is available online with this article.

Notes

1. Above and beyond these person-level processes, there may also exist reciprocity on the level of relationship effects such that the unique ways in which a perceiver sees a specific target gets reciprocated by that target toward the specific perceiver (i.e., dyadic reciprocity; Kenny, 1994). Computing generalized reciprocity involves removing dyadic reciprocity. Apart from that, dyadic reciprocity is not considered in the present work.
2. These ratings were collected later from four trained raters in response to a reviewer comment.
3. In their influential study on similarity and agreement in self and other perception, Kenny and West (2010) used regular multilevel regression rather than multilevel random effects meta-analysis to investigate moderators of Social Relations Model (SRM) parameters from 24 studies because it is possible that the use of multilevel random effects meta-analysis of adjusted and disattenuated correlations, rather than regular correlation coefficients, leads to an over-estimation of the level of heterogeneity. To check for robustness toward this approach, we re-ran all analyses presented here as multilevel regressions. Results were essentially identical to the ones presented here, both in terms of effect sizes and statistical inference, and can be requested from the first author.

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