Personality Psychology

Communal Motives Towards Parents and Perceived Self-Parent Agreement

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Associations have been found between communal motives to feel warmly connected with others and perceiving similarities between self and others, presumably because perceived self-other similarity helps satisfy those motives. The current research examined the phenomenon in a novel and consequential context: Young adults' perceived self-parent agreement regarding the values or preferences the young adult should prioritize in making life decisions. First, we describe an unregistered study in which 2,071 undergraduates from eight countries reported the qualities (e.g., attractive, outspoken) they prioritized when evaluating a potential spouse and the qualities they believed their parents would want them to prioritize. Second, we describe a registered study in which 1,141 undergraduates from five countries reported their basic values (e.g., security, hedonism) and the values they believed their parents would want them to prioritize. As hypothesized, stronger communal motives towards parents predicted greater self-parent agreement (regardless of the order in which students completed the measures). We also introduce a method for differentiating sources of individual differences in perceived agreement reflecting covariation between normative (average) and/or distinctive (non-normative) components of participants' profiles of self- and other-ratings. Analyzing these distinct components of agreement suggested that communal motives were associated more strongly with students projecting their values onto their parents than with students introjecting parents' values onto themselves, although both mechanisms—projection and introjection—likely played a role.

Perceived similarity—a positive association between self-descriptions and descriptions of others—generally has positive implications. For the individual, believing that others share your attitudes can feel validating and enhance confidence in those attitudes (Holtz, 2003; Singh et al., 2017). Greater perceived similarity with a group contributes to more favorable attitudes and behaviors towards that group and its members (Robbins & Krueger, 2005). Greater perceived similarity with another person contributes to liking and attraction (Montoya et al., 2008; Selfhout et al., 2009) and expecting that other person to like you (Hampton et al., 2019). In romantic relationships, perceived similarity contributes to feelings of love and relationship satisfaction (Murray et al., 2002; Sels et al., 2020). Because perceived similarity can have important consequences, it is important to understand the variables that contribute to perceived similarity.[1]

The variables that influence perceived perceiver-target similarity regarding an attribute presumably include perceiver variables, target variables, attribute variables, and interactions among them. As an example of an attribute variable, studies suggest perceived similarity is greater for attributes that are personally important, such as honesty (Thielmann et al., 2020). As an example of a target variable, studies suggest perceived similarity is greater with close, liked, or ingroup targets than distant, disliked, or outgroup

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1 Since perceived similarity has been examined from various theoretical and methodological lenses, it has been called many names including *assumed similarity* (Cronbach, 1955), *false consensus* (Marks & Miller, 1987), *social projection* (Seddig, 2020), *self-anchoring* (van Veelen et al., 2016), and *self-stereotyping* (Cho & Knowles, 2013). We use the terms *perceived similarity* (to denote the general phenomenon) and *perceived agreement* (to denote the specific construct our studies assess) mainly because they carry no connotations regarding the causes or accuracy of those perceptions.

targets (Lee et al., 2009; Robbins & Krueger, 2005). Although attributes and targets matter, the current research examines a perceiver variable—namely, a perceiver's goals or motives.

Multiple motives may affect perceived similarity, including epistemic motives, self-enhancement motives, and communal motives. As an example of *Epistemic Motives*, studies have found that people higher in *need for closure* are more likely to assume that ingroup members share their preferences (De keersmaecker & Roets, 2017), presumably because perceived consensus helps satisfy their need to feel certain that their preferences are sensible, appropriate, and correct. As an example of *Self-Enhancement Motives*, research has found that people tend to ascribe desirable but not undesirable elements of ingroup stereotypes to themselves (Biernat et al., 1996), which supports the proposition of social identity and self-categorization theory that people self-stereotype partly to enhance or protect self-esteem. Although epistemic and enhancement motives thus likely play a role, the current research focuses on *Communal Motives*.

Communal Motives and Perceived Similarity

Communal motives refer to the importance that individuals place on feeling understood, supported, and welcomed by others (instead of concealed, shielded, and insulated from others) in interpersonal situations and relationships (Locke, 2000, 2018). Because perceived self-other similarity can help satisfy communal motives (e.g., Hampton et al., 2019; Montoya et al., 2008; Sels et al., 2020), individuals with stronger communal motives may be more motivated to perceive self and others as similar. Indeed, several studies have found that stronger communal motives towards others predicted greater similarity between self-ratings of personality traits and ratings of the traits of liked or ingroup others (Locke et al., 2012; Locke & Christensen, 2007). These effects remained even after controlling for self-esteem and attribute desirability (Locke et al., 2012), which can inflate profile similarity with liked targets (Leising et al., 2015). Studies of two related constructs have yielded analogous results: Individuals scoring higher on "relational-independent self-construal" were more likely to ascribe the same personality traits to themselves and close friends (Cross et al., 2003; Locke & Christensen, 2007), and individuals scoring higher on "need to belong" perceived greater opinion consensus regarding personally important social issues (Morrison & Matthes, 2011).

The aims of the current research are to replicate previous tests of associations between communal motives and perceived similarity and to extend them in three ways. First, in only a few studies of perceived self-other similarity have the target others been parents, but those studies suggest that perceived self-parent similarity can have intrapersonal and interpersonal consequences. Among adults, perceived self-mother similarity in emotional reactions to situations was found to positively predict emotional well-being (Cheng & Grühn, 2016). Among adolescents, perceived self-parent value agreement was found to positively predict perceiving their parents as caring and admirable and the self-parent relationship as close (Barni et al., 2011; Knafo & Schwartz, 2012). Despite the potential personal and social ramifications of perceived self-parent similarity, no studies have examined ties between personal or social motives and perceived self-parent similarity. Thus, the current research will extend previous research by examining if young adult students' communal motives towards parents predict perceived self-parent similarity.

Second, whereas most perceived similarity studies (and all those involving communal motives) assessed similarities in personality dispositions or opinions, the current studies assess similarities in values or priorities. To elaborate, if you are a young adult who wants to get along with your parents, then presumably what matters is that they agree with and support *your* choices (e.g., occupational, spousal, or lifestyle choices) and not that your parents would or did make identical choices for *themselves*. Accordingly, the current studies assessed perceived self-parent agreement regarding which considerations or values the young adult should prioritize in making important life choices.

Third, perceived similarity may be greater for people with stronger communal motives because they ascribe more attributes of the self to others (i.e., *projection*), ascribe more attributes of others to the self (i.e., *introjection*), or both. Interestingly, whether perceived similarity is conceptualized as introjection versus projection tends to vary across literatures. Developmental, sociological, and social identity theory literatures—perhaps because they highlight how individuals become identified with and socialized by their caregivers and societies—generally emphasize introjection (e.g., *internalization* or *self-stereotyping* processes). In contrast, social cognition and person perception literatures—perhaps because they highlight judgmental heuristics and biases—generally emphasize projection (e.g., *self-anchoring* and *false consensus* effects). Regardless, the question of "do projection and/or introjection contribute to perceived similarity" is separable from the question "do *individual differences* in projection and/or introjection contribute to *individual differences* in perceived similarity". We explore the latter question. To do so, we employ a novel method for distinguishing sources of perceived agreement, as detailed below.

Parsing Perceived Agreement

Imagine we ask students to rank how important 20 different items are to them and to their parents. A student's self-parent agreement would typically be quantified as the profile correlation between that student's 20 parent-ratings and 20 self-ratings. However, because rating profiles can be divided into normative and distinctive components, covariation between rating profiles can also be divided into distinct components (Cronbach, 1955; Furr, 2008).

In this case, the *normative profile* of self-ratings is the *average* self-rating across all students for each item. A student's *distinctive profile* of self-ratings shows the degree to which that student's self-rating for each item is *above or below average*. Likewise, the normative profile of parent-ratings shows each item's average parent-rating, while a student's distinctive profile of parent-ratings shows how that student's parent-ratings deviate from the norm.

Separating each raw profile into a normative profile and distinctive profile enables us to separate self-parent agree-

Table 1. Operational Definitions and Simple Examples of Each Type of Perceived Agreement

Type of Perceived Agreement	Covariation between...	Simple Examples for a Male Student "Stu"
Overall: $Overall_{self}$ x $Overall_{parent}$	items a student endorses **x** items the student thinks his or her parents would endorse	Stu prioritizes "security" over "excitement"; Stu thinks his parents prioritize "security" over "excitement"
Normative: $Normative_{self}$ x $Normative_{parent}$	items students typically endorse **x** items students typically think parents would endorse	Typical student prioritizes "security" over "excitement"; typical student thinks his parents prioritize "security" over "excitement"
Distinctive: $Distinctive_{self}$ x $Distinctive_{parent}$	items a student endorses *more/less than other students do* **x** items this student thinks his or her parents would endorse *more/less than other students think their parents would*	Stu prioritizes "security" over "excitement" *more than typical student does*; Stu thinks his parents prioritize "security" over "excitement" *more than typical student thinks his parents do*
Projective: $Normative_{self}$ x $Distinctive_{parent}$	items students typically endorse **x** items this student thinks his or her parents would endorse *more/less than other students think their parents would*	Typical student prioritizes "security" over "excitement"; Stu thinks his parents prioritize "security" over "excitement" *more than typical student thinks his parents do*
Introjective: $Normative_{parent}$ x $Distinctive_{self}$	items students typically think parents would endorse **x** items this student endorses *more/less than other students do*	Typical student thinks his parents prioritize "security" over "excitement"; Stu prioritizes "security" over "excitement" *more than typical student does*

ment coefficients into four distinct sources of agreement: (1) agreement between the normative profile of self-ratings and the normative profile of parent-ratings (i.e., *Normative_self x Normative_parent Agreement* or simply *Normative Agreement*); (2) agreement between a student's distinctive profile of self-ratings and distinctive profile of parent-ratings (*Distinctive_self x Distinctive_parent Agreement* or *Distinctive Agreement*); (3) agreement between the normative profile of parent-ratings and a student's distinctive profile of self-ratings (*Normative_self x Distinctive_parent Agreement*); and (4) agreement between the normative profile of self-ratings and a student's distinctive profile of parent-ratings (*Normative_parent x Distinctive_self Agreement*). Aggregating these four sources of agreement yields *Overall Agreement*: the agreement between a student's raw profiles of self-ratings and parent-ratings (*Overall_parent x Overall_self Agreement*).

Table 1 defines and illustrates each type of perceived agreement. Because the normative self-ratings profile is invariant across students and the normative parent-ratings profile is invariant across students, *Normative Agreement* is invariant across students. Thus, *Normative Agreement* will not itself be relevant to the current research questions (which concern individual differences).

Theoretically, an individual's *Overall Agreement* may reflect projecting your self-perceptions onto your parents, introjecting your parent-perceptions onto yourself, or both. An individual's *Distinctive Agreement* may likewise reflect projecting your *distinctive* self-perceptions onto your parents, introjecting your *distinctive* parent-perceptions onto yourself, or both. It is impossible to disentangle the contributions of projection versus introjection to an individual's overall and distinctive agreement coefficients. However, the two "*Normative x Distinctive*" components of agreement can provide information about individual differences in projection and introjection.

First, consider *Normative_parent x Distinctive_self Agreement*. Students' shared beliefs about how parents want their children to respond (e.g., to survey items) can shape an indi-

vidual student's distinctive responses to a greater or lesser degree. But any individual student's distinctive responses cannot have shaped students' generally shared beliefs about parents. Thus, *Normative_parent x Distinctive_self Agreement* can reflect introjection (*Normative_parent → Distinctive_self*) but not projection (*Distinctive_self → Normative_parent*).

Next, consider *Normative_self x Distinctive_parent Agreement*. Students' normative beliefs about how to respond can shape an individual student's distinctive perceptions of how his/her parents would respond. But any individual student's distinctive perceptions of his/her parents cannot have shaped students' shared normative beliefs. Thus, *Normative_self x Distinctive_parent Agreement* can reflect projection (*Normative_self → Distinctive_parent*) but not introjection (*Distinctive_parent → Normative_self*).

For brevity, then, we will sometimes call perceived agreement's *Normative_parent x Distinctive_self* component *Introjective* and call its *Normative_self x Distinctive_parent* component *Projective*. Figure 1 summarizes the associations between students' normative and distinctive self- and parent-ratings that compose the *Normative, Distinctive, Introjective,* and *Projective* components of *Overall Perceived Agreement*.

Introjective (*Normative_parent x Distinctive_self*) and *Projective* (*Normative_parent x Distinctive_self*) *Perceived Agreement* contribute to an individual's level of *Overall Perceived Agreement* and thus to individual differences in *Overall Perceived Agreement*. However, they do not contribute to average levels of *Overall Perceived Agreement* because their *average* values must equal zero. Recall that *Introjective Perceived Agreement* is the degree to which a student makes *more than or less than other students make* self-ratings that mirror typical parent-ratings; thus, to whatever degree some students do so *more than average* (reflected in positive *Introjective Perceived Agreement* coefficients) there must be other students who do so *less than average* (reflected in negative *Introjective Perceived Agreement* coefficients). Likewise, *Projective Perceived Agreement* is the degree to which

a student makes *more than or less than other students make* parent-ratings that mirror the typical self-ratings; thus, to whatever degree some students do so *more than average* (reflected in positive *Projective Perceived Agreement* coefficients) there must be other students who do so *less than average* (reflected in negative *Projective Perceived Agreement* coefficients).

Another way to understand why the *Introjective* and *Projective* components can only contribute to individual differences and not group averages is to imagine that an entire group of students—on average—grows more prone or less prone to introjecting or projecting normative attitudes. If how much on average each student introjects normative perceived parental attitudes onto her own attitudes increases/decreases, then that would make the *normative* self-rating profile more/less similar to the normative parent-rating profile and thus increase/decrease *Normative* (*Normative_{self}* x *Normative_{parent}*) rather than *Introjective* (*Normative_{parent}* x *Distinctive_{self}*) agreement. Likewise, if how much each student on average projects normative youth attitudes onto her parent-ratings increases/decreases, then that would make the *normative* parent-rating profile more/less like the normative self-rating profile and thus again increase/decrease *Normative* (*Normative_{self}* x *Normative_{parent}*) rather than *Projective* (*Normative_{parent}* x *Distinctive_{self}*) agreement.

Having articulated the conceptual rationale for separating perceived agreement into components, we next detail our method for accomplishing that in the current research. Equation 1 shows that the covariance between two raw profiles ($cov_{1 \times 2}$) equals the sum of the covariance between the two normative profiles ($cov_{N1 \times N2}$), the covariance between the two distinctive profiles ($cov_{D1 \times D2}$), the covariance between the normative component of profile 1 and distinctive component of profile 2 ($cov_{N1 \times D2}$), and the covariance between the normative component of profile 2 and distinctive component of profile 1 ($cov_{N2 \times D1}$).

$$cov_{1 \times 2} = cov_{N1 \times N2} + cov_{D1 \times D2} + cov_{N1 \times D2} + cov_{N2 \times D1} \qquad (1)$$

Equation 1 is subtly but importantly different from the equations for decomposing profile covariance detailed in Furr (2008); specifically, the first two components ($cov_{N1 \times N2}$ and $cov_{D1 \times D2}$) also appear in Furr's equations, but the second two components ($cov_{N1 \times D2}$ and $cov_{N2 \times D1}$) do not. As explained above, we isolated these latter (*cross-profile normative-distinctive agreement*) components because they could help us isolate psychological processes (projection and introjection) underlying perceived self-other agreement. Equation 1 can be applied to any perceived agreement data where individuals from one group describe their own attributes and attributes of an individual from another group (e.g., wives describing their husbands or individuals from one ethnic group describing their acquaintances from a different ethnic group), but can specifically be applied to self-parent agreement profiles in the form of Equation 2:
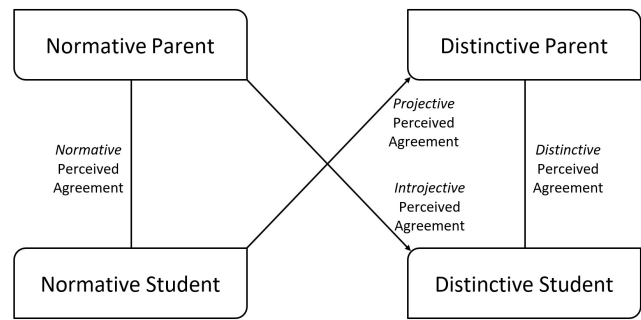
Figure 1. Conceptual model of associations between students' normative and distinctive self- and parent-ratings that compose the *Normative, Distinctive, Introjective,* and *Projective* components of *Overall Perceived Agreement.*

$$cov_{S \times P} = cov_{NS \times NP} + cov_{DS \times DP} + cov_{NS \times DP} + cov_{NP \times DS}, \qquad (2)$$

where N, D, S, and P subscripts refer to *Normative, Distinctive, Self,* and *Parent*, respectively.

In the current research we will compute the components of Equation 2 as follows. First, each raw profile of ratings or rankings from each student will be standardized (relative to the mean [*M*] and standard deviation [*SD*] of that individual's profile), which serves to (a) for ratings, ameliorate effects of individual differences in extreme or acquiescent response styles and (b) for both ratings and rankings, place the subsequently computed covariances onto comparable and more intuitively interpretable correlational metrics.[2] Second, because our participants will be men and women from various countries, and normative responses often differ across genders and nationalities, we will compute separate normative profiles for females' self-ratings, males' self-ratings, females' ratings of their parents, and males' ratings of their parents within each country. Third, we will compute distinctive profiles by subtracting the relevant normative profiles from individuals' raw profiles; for example, if Stu is a Mexican male, then we will compute Stu's distinctive profile of parent-ratings by subtracting Mexican males' normative parent-ratings from Stu's raw parent-ratings. Finally, we will compute covariances between profiles.

Summary of Current Research

The current research extends previous research on communal motives and perceived similarity in multiple ways, including by examining distinct sources of perceived agreement, in a globally diverse sample of participants, with parents as the targets and preferences/values as the attributes. The research tests the following four hypotheses:

H1: Communal motives towards parents will be positively associated with *Overall* (*Overall_{self}* x *Overall_{parent}*) Perceived Agreement;

H2: Communal motives towards parents will be positively associated with *Distinctive* ($Distinctive_{self}$ x $Distinctive_{parent}$) Perceived Agreement;

H3: Communal motives towards parents will be positively associated with *Projective* ($Normative_{self}$ x $Distinctive_{parent}$) Perceived Agreement;

H4: Communal motives towards parents will be positively associated with *Introjective* ($Normative_{parent}$ x $Distinctive_{self}$) Perceived Agreement.

For each hypothesis, support requires the association to be positive ($p < .05$, 1-tailed) and the effect size to exceed the smallest effect size of interest (SESOI); and disconfirmation requires the lack of a significant positive association and—applying an inferiority or directional equivalence test—the upper-bound of the effect size's 90% confidence interval to be less than the SESOI (see Lakens, 2017). For all hypotheses, we set the SESOI as $r = .10$ because the aim of the current research is to identify if meaningful (albeit not necessarily impactful) associations exist between communal motives and components of perceived agreement, and $r = .10$ is conventionally understood as the lower bound for a "small" effect (Gignac & Szodorai, 2016)—i.e., the smallest effect worthy of consideration without further justification.

Based on the theory and research reviewed above, we expect the data to support H1. If the data support H1, then there should be *on average* positive associations with the components of perceived agreement. However, existing theory and research provide no guidance concerning whether all three components—or just one or two components—will contribute to the overall positive association. In short, we have no expectations regarding whether H2 – H4 will be supported.

This manuscript presents two studies: an unregistered study and a registered study. The unregistered study provides a detailed illustration of the methodology and analyses that we will use in the registered study. The unregistered study examines agreement between (a) the qualities (e.g., intelligent, attractive) that students prioritize when evaluating a potential spouse and (b) the qualities they believe their parents would want them to prioritize. The registered study examines agreement between (a) the basic values (e.g., security, hedonism) that students personally prioritize and (b) the values they believe their parents would want them to prioritize.

Unregistered Study

The unregistered study assessed perceived self-parent agreement regarding the qualities young adults should prioritize when evaluating a potential marital partner. The data were collected as part of a broader research project (reported in Locke, Barni, et al., 2020; Locke, Mastor, et al., 2020) in which participants from eight countries described their preferences for various traits (e.g., *shy*) or attributes (e.g., *religious*) in a spouse. The study materials, data, and analysis scripts are posted on the Open Science Framework: https://osf.io/26hru/ .

The assumption underlying the current hypotheses is that communal motives *specifically towards parents* predicts perceived agreement *specifically with parents*. Previous studies assessed perceived similarity with specific targets or groups but assessed communal motives towards other people *in general*. To make the specificity of the assessed motives match the specificity of the assessed targets, both our unregistered and registered studies assess communal motives specifically towards parents. The current unregistered study additionally assessed communal motives towards peers. Although not directly related to our hypotheses, motives towards peers provide another indirect way to test the specificity of the hypothesized associations: If perceived self-parent agreement is associated with communal motives specifically towards parents (rather than with general communal dispositions or response styles), then that association should remain even after controlling for effects of communal motives towards peers.

Method

Participants. Participants (n = 1,266 women and 805 men; *M* age = 19.9 years, *SD* = 1.9) were recruited from undergraduate courses at universities in Canada, India, Italy, Japan, Malaysia, Mexico, the Philippines, and the United States. (For demographics within countries, see Supplemental Table S1). American, Canadian, Filipino, Indian, and Mexican students received course extra credit; Italian participants received 2 EUR; Japanese and Malaysian students received no compensation. Participants were required to be ≤ 30 years old, unmarried, and to prefer a long-term partner of a different gender.

Materials. Native speakers translated the original English materials into Italian, Japanese, Malaysian, Spanish, and Tagalog/Filipino. Other translators translated the materials back into English and made minor modifications to resolve discrepancies.

Attribute Rankings. We used a ranking measure developed by Buss & Barnes (1986) that has been used in numerous studies. The measure asks participants to rank the following 13 attributes from 1 (most desirable) to 13 (least desirable) according to their "*desirability in someone you might marry*": *Kind & Understanding; Good Earning Capacity; College Graduate; Religious; Good Heredity; Intelligent; Exciting Personality; Healthy; Easygoing; Physically Attractive; Creative & Artistic; Wants Children; Good Housekeeper.* To assess perceived agreement, we also asked participants to rank these attributes according to "*how desirable your parent…would consider the characteristics…in someone you might marry*".

Trait Ratings. We selected 10 traits from a pool of traits whose social desirability had been judged on 1 (extremely undesirable) to 9 (extremely desirable) scales by two large independent samples (Hampson et al., 1987; Norman, 1967). To prevent floor or ceiling effects, we chose 10 traits whose average desirability across samples was between 4 and 7. To ensure that they assessed different qualities, we chose traits that formed semantically contrasting pairs. The five pairs chosen were: quiet, outspoken; cautious, carefree; shy, frank; traditional, nonconforming; mischievous, predictable. Participants rated each of these 10 traits individually according to "*how desirable or undesirable you consider each trait to be in a long-term mate or marriage partner for you*" and "*how desirable or undesirable your parent would consider each of these traits to be in a long-term mate or mar-*

**Table 2. Descriptive Statistics and Intercorrelations Among Types of Perceived Agreement –
Unregistered Study**

Type of Perceived Agreement	M	SD	1	2	3	4	5	6	7
Trait Ratings									
1. Overall	.58	.34							
2. Distinctive	.26	.26	.55						
3. Projective	.00	.15	.43	-.18					
4. Introjective	.00	.17	.51	-.14	.25				
Attribute Rankings									
5. Overall	.57	.31	.38	.18	.22	.14			
6. Distinctive	.23	.24	.14	.14	.07	.06	.52		
7. Projective	.00	.19	.20	.13	.21	.02	.54	-.21	
8. Introjective	.00	.13	.12	.09	.09	.17	.34	-.28	.24

Note. *N* = 2030. If |*r*| ≥ .06, then *p* < .01.

riage partner for you" on the following scale: extremely undesirable (1), very undesirable (2), somewhat undesirable (3), neutral (4), somewhat desirable (5), very desirable (6), extremely desirable (7).

Communal Motives. We assessed communal motives towards parents or peers using the 32-item version of the Circumplex Scales of Interpersonal Values (CSIV; Locke, 2000; Locke et al., 2012), which contains six 4-item scales measuring different types of communal or uncommunal interpersonal goals. The CSIV has been used in numerous studies and has consistently demonstrated convergent and discriminant validity with other inventories and relevant behavioral outcomes (e.g., Du et al., 2020; Rek et al., 2018). For each item, respondents indicated the importance of acting or being treated in certain ways when interacting either with "your parents" or with "your peers" on 0 (*not at all important*) to 4 (*extremely important*) scales. Example items from each scale are: "they support me when I am having problems" (*Communal Scale*), "they respect what I have to say" (*Communal & Agentic*), "they approve of me" (*Communal & Unagentic*), "they keep their distance from me" (*Uncommunal*), "they mind their own business" (*Uncommunal & Agentic*), "I not say something stupid" (*Uncommunal & Unagentic*). Supplemental Table S2 lists all the items.

A participant's communal motivation is computed as a weighted mean of the participant's response to each item (see analysis syntax for details). In the current sample, Cronbach αs were .79 for communal motivation with parents and .74 for communal motivation with peers. Communal motivation scores can range from −4 to +4. For example, a participant who judged every communal item "extremely important" (4) and every uncommunal item "not at all important" (0) would obtain an overall communal motivation score of +4, whereas a participant who judged communal and uncommunal items equally important would obtain a communal motivation score of zero. The current sample means for communal motives towards peers and parents were 1.20 (*SD* = .83) and 1.55 (*SD* = 0.95), respectively, indicating that students typically rated experiencing connection with peers and parents as somewhat-to-moderately important.

Procedure. Participants completed a questionnaire containing measures of, in order: communal motives with peers, own partner preferences (using rankings then ratings), beliefs about their parents' preferences (using rankings then ratings), and communal motives with parents. The research was approved by relevant review boards at each participating institution.

Results

We excluded from the analyses 41 careless respondents (2.0% of the sample) defined as either (a) answering fewer than half the items on one of the measures or (b) giving identical responses to every item on one of the measures. Otherwise, missing data were ignored when computing covariances or communal motive scores.

Table 2 reports descriptive statistics and intercorrelations for the various types of perceived agreement. Several findings reported in Table 2 merit consideration or explanation. First, recall that *Projective* and *Introjective Perceived Agreement* only contribute to an individual's—and not a group's average—perceived agreement; thus, the mean values for *Projective* and *Introjective Perceived Agreement* were (and mathematically had to be) zero. Second, although not reported in Table 2, we will note that *Normative Perceived Agreement* can be computed simply by subtracting mean *Distinctive Agreement* from mean *Overall Agreement*; thus, *Normative Perceived Agreement* was .32 (.58 - .26) for trait ratings and .34 (.57 - .23) for attribute rankings.

Third, the correlations along the diagonal in the lower left rectangle show the correlations between the rating and ranking measure for each type of perceived agreement. The correlations were positive but—except in the case of *Overall Perceived Agreement*—were modest in size, which means there were reliable individual differences across measures, but they explained a relatively small portion of the variance in *Distinctive*, *Projective*, and *Introjective Perceived Agreement* scores. Fourth, the correlations in the upper left and lower right triangles show associations between different types of perceived agreement (for the rating and ranking mea-

Table 3. Effects of Communal Motives toward Parents on Perceived Agreement – Unregistered Study

Type of Perceived Agreement	b	95% CI	p	β	90% CI	r²
Trait Ratings						
Overall Perceived Agreement	.075	[.060,.090]	< .001	.219	[.184,.256]	.048
Distinctive	.024	[.012,.035]	< .001	.090	[.054,.127]	.008
Projective	.032	[.025,.038]	< .001	.211	[.176,.248]	.044
Introjective	.020	[.013,.027]	< .001	.117	[.081,.154]	.014
Attribute Rankings						
Overall Perceived Agreement	.057	[.044,.070]	< .001	.184	[.149,.221]	.034
Distinctive	.023	[.012,.033]	< .001	.093	[.057,.130]	.009
Projective	.025	[.017,.033]	< .001	.133	[.097,.170]	.018
Introjective	.009	[.004,.015]	< .001	.072	[.036,.109]	.005

Note. Unstandardized regression coefficients (b) show the absolute change in perceived agreement per *SD* change in communal motivation. *CI* = confidence interval. Because we tested directional hypotheses, *p*s reflect one-tailed tests. Standardized coefficients (β) show the *SD* change in perceived agreement per *SD* change in communal motivation (and here are equivalent to zero-order correlations). The r^2s indicate the proportion of variance explained by communal motives.

sures, respectively). Unsurprisingly, *Overall Perceived Agreement* positively correlated with each of its components. Distinctive perceived agreement negatively correlated with the other two components: The more a student's distinctive self-ratings and distinctive parent-ratings mirrored other, the less that student's distinctive ratings mirrored the normative self-ratings or parent-ratings shared with other students.

Because overall perceived agreement coefficients were computed on standardized profiles, they can be interpreted as correlations. If the current methodology is consistent with previous perceived similarity research, then these perceived agreement correlations should be positive on average. More importantly, because the hypotheses concern *individual differences*, testing the hypotheses requires these overall perceived agreement correlations to show meaningful variation, which we define as *SD*s > 0.1. As [Table 2](#) shows, overall perceived agreement averaged .58 (*SD* = .34) on the rating measure and .57 (*SD* = .31) on the ranking measure. Thus, students on average reported moderate agreement between their preferences and their parents' preferences, but there were also noteworthy individual differences.

To test if those individual differences were related to motives, we regressed each type of perceived agreement on communal motives towards parents. Communal motives were standardized (separately within each gender x nationality). As [Table 3](#) shows, on both the rating and ranking preference measures, students with stronger communal motives towards parents showed greater *Overall* (*Overall$_{self}$ x Overall$_{parent}$*), *Distinctive* (*Distinctive$_{self}$ x Distinctive$_{parent}$*), *Projective* (*Normative$_{self}$ x Distinctive$_{parent}$*), and *Introjective* (*Normative$_{parent}$ x Distinctive$_{self}$*) *Perceived Agreement*. The

estimated *Overall Perceived Agreement* correlations for students 1 *SD* above versus below average in communal motives towards parents were .66 versus .50 (i.e., 0.58 ± .075) on the rating measure and .63 versus .52 (i.e., 0.57 ± .057) on the ranking measure.

Because all associations significantly exceeded zero, no hypotheses were *disconfirmed*. However, support for the hypotheses also requires the point estimates for the effect sizes (the standardized betas) to exceed 0.10. Whereas all four betas for the associations between communal motives and *Overall and Projective Perceived Agreement* exceeded the 0.10 threshold, only one of the four betas for the associations between communal motives and *Distinctive* and *Introjective Perceived Agreement* did. Thus, whereas H1 and H3 received consistent support, H2 and H4 received equivocal support.[3]

According to Equation 2, the unstandardized effect of communal motives on overall agreement should equal the sum of the effects of communal motives on *Distinctive*, *Normative$_{self}$ x Distinctive$_{parent}$*, and *Normative$_{parent}$ x Distinctive$_{self}$* agreement. [Table 3](#) confirmed that this was true (i.e., for trait ratings .075 = .024 + .032 + .020; for attribute rankings .057 = .023 + .025 + .009). Parsing the effect of communal motives in this way enables us to quantify how much of the association between communal motives and overall agreement was attributable to its associations with each component of agreement. Of communal motives' total covariation with *Overall Perceived Agreement*, for trait ratings 31% (.024/.075) was covariation with *Distinctive Perceived Agreement*, 42% (.033/.075) was covariation with *Projective Perceived Agreement*, and 27% (.020/.075) was covariation with *Introjective Perceived Agreement*; and for attribute rankings, 40% (.023/.057) was covariation with *Distinctive Per-*

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3 We did not hypothesize or explore moderating effects of demographic variables. However, for interested readers, Supplemental Tables S3 and S4 report the results from Tables [2](#) and [3](#) separately for each gender and each nationality.

ceived Agreement, 44% (.025/.057) was covariation with *Projective Perceived Agreement*, and 16% (.009/.057) was covariation with *Introjective Perceived Agreement*. Averaging across the ranking and rating measures, communal motives' association with the *Projective* ($Normative_{self} \rightarrow Distinctive_{parent}$) component constituted 43% of communal motives' association with overall agreement, while its association with the *Introjective* ($Normative_{parent} \rightarrow Distinctive_{self}$) component only constituted 21%.

Finally, to test effects of communal motives towards parents while controlling for effects of communal motives towards peers, we repeated the above regression analyses, entering communal motives towards parents and peers as simultaneous standardized predictors. (Communal motives towards parents and peers were positively correlated, $r = .41$). Supplemental Table S5 shows the results. Communal motives towards peers showed at most weak associations with perceived self-parent agreement (i.e., one effect explained 1.0% of the variance and the others explained ≤ 0.2% of the variance). Moreover, the effects of communal motives towards parents were largely unaffected by controlling for communal motives towards peers. Thus, these supplemental findings support attributing the associations reported in [Table 3](#) to relationship-specific communal motives rather than to general communal dispositions, response styles, or methodological artifacts.

Discussion

Youth who expressed stronger communal motives towards parents were more apt to portray themselves and their parents as agreeing about which long-term partner qualities were more/less desirable. The associations between communal motives towards parents and overall agreement as well as the components of overall agreements were all significantly greater than zero, but some were quite weak. Specifically, communal motives' associations with *Distinctive* and $Normative_{parent}$ x $Distinctive_{self}$ agreement typically failed to exceed $r = 0.1$; thus, there was only inconsistent support for Hypotheses 2 and 4. However, communal motives' associations with *Overall* and $Normative_{self}$ x $Distinctive_{parent}$ agreement always exceeded $r = 0.1$ (and some exceeded $r = 0.2$); thus, there was consistent support for Hypotheses 1 and 3.

Framing the effects of communal motives on components of agreement as percentages of the effect of communal motives on overall agreement reinforced the above findings: Twice as much of communal motives' association with overall perceived agreement was attributable to its association with $Normative_{self}$ x $Distinctive_{parent}$ versus with $Normative_{parent}$ x $Distinctive_{self}$ agreement. Because $Normative_{self}$ x $Distinctive_{parent}$ agreement can reflect projection but not introjection and $Normative_{parent}$ x $Distinctive_{self}$ agreement can reflect introjection but not projection, these results are consistent with effects of communal motives on perceived agreement involving more projection than introjection.

Registered Study

Our registered study conceptually replicated the preceding unregistered study but also addressed three limitations.

First, associations between communal motives and perceived agreement theoretically should be evident in any domain where children expect agreement/disagreement to enhance/undermine closeness with their parents. The unregistered study examined one such domain: partner preferences. However, to the degree partner preferences are shaped by variables unique to that domain (e.g., one's relationship status and history), the unregistered study's findings may not generalize to other domains. To address this, the current study tested the hypotheses in a different and broader but equally important domain of preferences: prioritizing basic values, such as achievement versus security versus self-direction (Schwartz, 2012). Agreement about basic values may affect parent-child closeness whenever children face decisions that reflect those values (e.g., occupational, recreational, lifestyle, as well as marital decisions). Accordingly, individuals who want a close self-parent relationship should want strong self-parent value agreement.

Second, participants in the unregistered study reported their own partner preferences before reporting their perceptions of parents' preferences. Thus, when encountering the parent-ratings, participants who wanted self-ratings and parent-ratings to align could not retroactively change their self-ratings to better match their parent-ratings, but they could adjust their parent-ratings to better match their self-ratings. Thus, order-of-presentation effects may help explain why communal motives tended to be more strongly associated with projection (normative self-ratings → distinctive parent-ratings) than introjection (normative parent-ratings → distinctive self-ratings). To control for order effects on self- and parent-ratings, in the current study we randomly assigned participants to either make self-ratings before parent-ratings or parent-ratings before self-ratings. Exploratory analyses will test if the ordering of self- and parent-ratings moderated relationships between communal motives and perceived agreement. Order effects would suggest associations between communal motives and psychological processes occurring while respondents make their ratings—i.e., just-completed self-ratings (parent-ratings) influencing the parent-ratings (self-ratings) currently being made.

Finally, a similar limitation is that the unregistered study always assessed perceived agreement before assessing communal motives. Thus, the observed associations may be unique to this particular ordering. To address this limitation, in the current study participants were randomly assigned to report their communal motives towards parents either before or after assessing perceived agreement. Exploratory analyses will test if relationships between communal motives and perceived agreement depend on which was assessed first. Order effects would implicate processes occurring as respondents make their ratings, such as currently salient communal motives influencing perceived agreement or currently salient perceived agreement influencing communal motives. In sum, the exploratory analyses of order-effects can inform our interpretation of communal motive and perceived similarity scores as indicators of stable traits versus reactive states, and thus our understanding of the mechanisms underlying any observed associations between motives and perceived agreement.

Method

Participants and Power Analysis. Each of the four hypotheses defines support as a positive association between motives and perceived agreement and the SESOI as $r = .10$. A power analysis using G*Power (Faul et al., 2009) indicated a sample of 850 participants would provide 90% power to detect rs = .10 at a one-tailed $\alpha = .05$. (Tests are one-tailed because the hypotheses specify positive associations and the analyses evaluate only if associations are *greater* than zero). Therefore, we planned to recruit a total of 880 participants to allow for excluding careless responders (forecast—based on the unregistered study—to be approximately 3% of the sample).

As planned, participants ($n = 665$ women and 476 men; M age = 20.1 years, $SD = 3.3$) were recruited from a variety of undergraduate courses at universities in Canada, Italy, Japan, the Philippines, and the United States. (For demographics within countries, see Supplemental Table S4). Because data collection proceeded more efficiently than anticipated, we ended up administering the survey to 1,141 (rather than 880) participants, which is not problematic since hypothesis support depends on exceeding a critical SESOI. American, Canadian, and Japanese students received course extra credit; Italian and Filipino students received no compensation.

Basic Values. We assessed basic human values using the Portrait Values Questionnaire (PVQ; Schwartz et al., 2001). Studies conducted across many languages support the PVQ's reliability and validity (Caprara et al., 2017; Schwartz, 2012). Each item portrays a person whose objectives reflect one of 10 basic human values (Schwartz, 2012). For example, "Thinking up new ideas and being creative is important to him/her. He/She likes to do things in his/her own original way" describes someone who values *Self-Direction*. Respondents indicate their similarity to each person described on 1 (*not like me at all*) to 6 (*very much like me*) scales.

As in several previous studies (e.g., Barni et al., 2011; Knafo & Schwartz, 2012; Tam et al., 2012), we also used the PVQ to assess the values respondents expect their parents would want them to endorse. When used for this purpose the PVQ is called the Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP; Danioni & Barni, 2018). The PSVQ-CP and PVQ differ only in their instructions: For each item the PVQ asks respondents "How much like you is this person", whereas the PSVQ-CP asks respondents "How your mother/father would want you to respond to each item". Longer and shorter versions of the PVQ exist, but the current study used the 21-item version because it (a) is long enough to compute robust profile correlations, (b) is short enough to be administered twice without inducing fatigue, and (c) is widely-used, including in the biennial multi-nation *European Social Survey*.

Communal Motives. Communal motives towards parents were again assessed using the CSIV (using the same instructions and scoring procedures as in the unregistered study) but using fewer items. The CSIV was developed to assess social motives across interpersonal relationships (including "with strangers, at work, at social gatherings, and so on"; Locke, 2000) and some items are ill-suited to measuring communal motives with parents. Therefore, the current study used an abbreviated 18-item version that included from each of the six scales only those three items that we judged best-suited to describing communal/uncommunal goals during interactions with parents. Supplemental Table S2 lists the items chosen. In the current sample, the Cronbach α for the 18-item scale was 0.84 and the sample mean was 1.56 ($SD = 1.19$), which indicates that—as in the unregistered study—a typical student rated experiencing connection with parents as somewhat-to-moderately important.

Procedure. Participants completed an online survey consisting of the CSIV, PVQ, and PSVQ-CP (plus three demographic questions). Participants were randomly assigned to complete the survey in one of four different order: (i) CSIV – PVQ – PSVQ-CP, (ii) CSIV – PSVQ-CP – PVQ, (iii) PVQ – PSVQ-CP – CSIV, or (iv) PSVQ-CP – PVQ – CSIV. The registered study's materials and analysis scripts are posted at: https://osf.io/26hru/ .

Results

The registered analyses mirrored those in the unregistered study.

Preliminary Processing and Quality Checks. Careless respondents again were defined as those who either answered fewer than half the items on one of the measures or gave identical responses to every item on one of the measures. We excluded 27 careless respondents (2.3% of the sample). We did not replace missing data or remove outliers.

We computed *Overall*, *Distinctive*, *Projective* and *Introjective Perceived Agreement* covariances (between a participant's profile of PVQ ratings and profile of PSVQ-CP ratings) using the same procedure used to compute those covariances in the unregistered study. Table 4 reports descriptive statistics and intercorrelations for the various types of perceived agreement. *Overall Perceived Agreement* was somewhat lower while *Distinctive Agreement* was slightly higher in this study than in the unregistered study; accordingly, *Normative Perceived Agreement* (which reflects the mean difference between *Overall* and *Distinctive Perceived Agreement*) was also lower—specifically, .42 - .29 = .13.

Our registered quality check criteria were that *Overall Perceived Agreement* have a sample $M > 0$ and $SD > 0.1$. A $M \leq 0$ would suggest that the perceived agreement data is invalid. A $SD \leq 0.1$ would suggest that there is insufficient variance in perceived agreement to test the hypotheses. As Table 4 shows, overall perceived agreement averaged .42 ($SD = .29$). Thus, the data met our quality check criteria: While students typically reported moderate agreement between their priorities and their parents' priorities, there were also noteworthy individual differences.

Hypothesis Tests. To test the hypotheses, each type of perceived self-parent agreement was regressed on communal motives towards parents. Communal motives were standardized (separately within each gender x nationality). We used unstandardized regression coefficients to quantify the absolute change in *Overall Perceived Agreement* as a function of communal motives and the percentages of that change

Table 4. Descriptive Statistics and Intercorrelations Among Types of Perceived Agreement – Registered Study

Type of Perceived Agreement	M	SD	1	2	3
1. Overall	.42	.36			
2. Distinctive	.29	.29	.89		
3. Projective	.00	.12	.59	.25	
4. Introjective	.00	.09	.26	-.06	.20

Note. $N = 1,114$. If $|r| \geq .08$, then $p < .01$.

Table 5. Effects of Communal Motives toward Parents on Perceived Agreement – Registered Study

Type of Perceived Agreement	b	95% CI	p	β	90% CI	r^2
Overall Perceived Agreement	.093	[.073,.114]	< .001	.258	[.211,.307]	.067
Distinctive	.044	[.027,.061]	< .001	.151	[.102,.200]	.023
Projective	.038	[.031,.045]	< .001	.307	[.261,.355]	.094
Introjective	.011	[.006,.016]	< .001	.131	[.083,.181]	.017

Note. Unstandardized regression coefficients (b) show the absolute change in perceived agreement per *SD* change in communal motivation. *CI* = confidence interval. Because we tested directional hypotheses, *p*s reflect one-tailed tests. Standardized coefficients (β) show the *SD* change in perceived agreement per *SD* change in communal motivation (and here are equivalent to zero-order correlations). The r^2s indicate the proportion of variance explained by communal motives.

attributable to each component of perceived agreement; r^2s to clarify and highlight effect sizes; and null hypothesis significance tests and standardized *betas* (i.e., zero-order correlations) to explicitly evaluate the hypotheses.

As in the previous study, we tested the following four hypotheses: Communal motives will be positively associated with *Overall Perceived Agreement* (**H1**), *Distinctive Perceived Agreement* (**H2**), *Projective Perceived Agreement* (**H3**), and/ or *Introjective Perceived Agreement* (**H4**). For each hypothesis, support requires a positive association (*p* < .05, 1-tailed) and an effect size (standardized *beta*) > 0.10. Disconfirmation requires the lack of a significant positive association and an upper-bound of the effect size's 90% confidence interval < 0.10.

As [Table 5](#) shows, students with stronger communal motives towards parents showed significantly greater *Overall* (*Overall*$_{self}$ x *Overall*$_{parent}$), *Distinctive* (*Distinctive*$_{self}$ x *Distinctive*$_{parent}$), *Projective* (*Normative*$_{self}$ x *Distinctive*$_{parent}$), and *Introjective* (*Normative*$_{parent}$ x *Distinctive*$_{self}$) *Perceived Agreement*.[4] The point estimates for all effect sizes (the standardized betas) exceeded 0.10. Thus, the data supported all four hypotheses.

Of communal motives' total covariation with *Overall Perceived Agreement*, 47% (.044/.093) was covariation with *Distinctive Perceived Agreement*, 40% (.038/.093) was covariation with *Projective Perceived Agreement*, but only 12% (.011/.093) was its covariation with *Introjective Perceived Agreement*. In terms of effect sizes, communal motives were much more predictive of overall and projective perceived agreement (r^2s = .07 and .09) than distinctive and introjective perceived agreement (r^2s = .02).

Registered Exploratory Analyses. Exploratory analyses tested if order of administering the PVQ and PSVQ-CP moderated the effects of communal motives by adding presentation order (coded: PVQ first = 0, PSVQ-CP first = 1) and the order x motives interaction to the above regressions. Corresponding analyses tested if the CSIV's location in the survey (coded: at beginning = 0, at end = 1) moderated the effects. Setting two-tailed α = .05, the proposed *n* = 850 (*n* = 425 per presentation-order condition) yielded > 84% power to detect a between-condition Δ *beta* = 0.2, with statistical power increasing as the average *beta* across conditions increases. Because we recruited more participants than planned, the actual *N*s were: 555 completed the PSVQ-CP before the PVQ; 559 completed the PVQ before the PSVQ-CP; 567 completed the CSIV first; and 547 completed the CSIV last. Nonetheless, neither PVQ/PSVQ presentation order nor CSIV presentation order moderated the effect of communal motives on any type of perceived agreement, all |Δ *betas*| ≤ .04, *p*s > .3 (see Supplemental Table S9 for details).

Incidentally, these analyses revealed that overall, distinctive, and (to a lesser degree) projective perceived agreement was lower among participants who completed the PVQ before completing the PSVQ-CP (see Table S9). Because the current manuscript concerns effects of communal

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4 We did not hypothesize or explore moderating effects of demographic variables. However, for interested readers, Supplemental Tables S7 and S8 report the results from Tables [4](#) and [5](#) separately for each gender and each nationality.

motives on perceived agreement—and these exploratory analyses simply aimed to check if presentation order *moderated* those effects of communal motives—we will not further discuss these *direct* effects of presentation order. But we wanted to point out them out as perhaps a cautionary note to researchers seeking to measure absolute levels of perceived agreement and perhaps an encouraging note to researchers seeking to manipulate levels of perceived agreement.

Discussion

Communal motives towards parents were positively associated with overall perceived self-parent agreement regarding the importance of basic human values such as self-direction versus security. The predictive power of communal motives was not trivial: The estimated *Overall Perceived Agreement* correlations for students 1 *SD* above versus below average in communal motives were .52 versus .33 (i.e., 0.42 ± .093). Communal motives were also positively associated (rs > 0.1) with the distinctive, projective, and introjective components of overall agreement. Thus, all four hypotheses received support. Indeed, the associations between communal values and perceived agreement in the current study were slightly stronger than those observed in the unregistered study. Nonetheless, communal motives correlated more strongly with projective and overall agreement than with introjective and distinctive agreement.

Because the current research prioritized internal over ecological validity, we wondered if associations between communal motives and perceived agreement might reflect psychological processes only operative within the artificial conditions of our brief surveys. Specifically, agreement between self- and parent-ratings might influence subsequent ratings of communal motives or vice versa. However, the association between communal motives and perceived agreement did not depend on whether communal motives were assessed before or after perceived agreement nor on whether self-ratings were made before or after parent-ratings. The fact that rearranging the materials did not moderate the associations makes it less likely that the mechanisms linking communal motives with perceived agreement simply entail survey items influencing each other and makes it more likely that those mechanisms are sufficiently robust to be operative in everyday life.

General Discussion

The current research assessed agreement between the considerations that students reported prioritizing when evaluating potential spouses (in the unregistered study) or life paths more generally (in the registered study) and those they believed their parents would want them to prioritize. *Overall Perceived Agreement* between raw profiles of self-ratings and parent-ratings was on average moderate but also varied across students. In accord with Hypothesis 1, overall agreement was greater among students with stronger communal motives (i.e., to feel warmly connected rather than warily guarded with their parents). Communal motives towards parents explained approximately 7% and 4% of the variance in agreement in the registered and unregistered studies, respectively.

Previous studies have likewise reported associations between perceived similarity and communal motives (Locke et al., 2012; Locke & Christensen, 2007) or constructs related to communal motives (Cross et al., 2003; Locke et al., 2014; Morrison & Matthes, 2011). Those studies assessed whether people believed peers (such as friends or ingroup members) shared their personality dispositions or opinions. Therefore, the current studies—by assessing whether people believed their parents shared their preferences and values—expanded the range of targets and attributes across which the association between communal motives and perceived similarity has been observed.

We decomposed the association of communal motives with *Overall Perceived Agreement* into its association with three distinct components: (1) agreement between *Distinctive$_{self}$* and *Distinctive$_{parent}$* profiles (i.e., *Distinctive Agreement*); (2) agreement between the *Normative$_{self}$* profile and *Distinctive$_{parent}$* profiles; and (3) agreement between the *Normative$_{parent}$* profile and *Distinctive$_{self}$* profiles. People with stronger communal motives may show more *Distinctive Agreement* due to projecting themselves onto their parents and/or introjecting their parents' attributes onto themselves. In contrast, *Normative$_{self}$ x Distinctive$_{parent}$ Agreement* can reflect projection but not introjection (thus, we labeled that component *projective*), whereas *Normative$_{parent}$ x Distinctive$_{self}$ Agreement* can reflect introjection but not projection (thus, we labeled that component *introjective*). In accord with Hypotheses 2 - 4, stronger communal motives were positively associated with each of the three (distinctive, projective, and introjective) components of perceived agreement, which suggests the psychological processes linking communal motives to overall perceived agreement include both projection and introjection.

However, communal motives' association with overall agreement was due more to its association with *Projective Perceived Agreement* than to its association with *Introjective Perceived Agreement*. Communal motives also correlated more strongly with projective than introjective perceived agreement; indeed, in the registered study individual differences in communal motives explained 9.4% of the variance in *Projective Perceived Agreement* but only 1.7% of the variance in *Introjective Perceived Agreement*. This pattern of results suggests that communal motives towards parents were associated more strongly with students *projecting* onto their parents what they and other students typically value than with students *introjecting* onto to themselves what their parents and other parents typically value. One speculative explanation for this pattern—which could be tested in future research—is that communal motives exert less influence on those judgments about which students feel more certain, and students generally felt more certain about their own priorities than about what their parents would want them to prioritize.

Limitations and Future Directions

The current studies inevitably sampled particular types of attributes, raters, and targets. Different attributes, raters, and targets might produce different results. For example, because we assessed perceived agreement with parents, our results may not generalize to other targets, such as co-

workers or strangers. Because we assessed agreement regarding life values and partner preferences, our results may not generalize to other attributes, such as aesthetic or consumer preferences. And although our student samples were linguistically, geographically, and culturally diverse, our results may not generalize to groups whose ages or education levels differ from those of young adult undergraduates.

Our cross-sectional non-experimental studies cannot determine to what degree communal motives causally influenced perceived agreement or perceived agreement causally influenced communal motives. On the one hand, in developing our hypotheses we conceptualized communal motivation as a somewhat steady personality disposition that could influence impressions of similarity (Locke, 2018). In support of this assumption, communal motives have demonstrated high levels of test-retest stability (e.g., over two-week intervals; Locke, 2000) and moderate consistency across relationships (e.g., see positive correlation between communal motives towards parents and peers in the unregistered study). On the other hand, since numerous studies suggest that perceived similarity enhances warm positive interpersonal feelings and attitudes (e.g., Montoya et al., 2008), it seems plausible that perceived similarity might enhance communal motives as well. Perhaps bidirectional causal influences are occurring simultaneously, as has been reported for perceived similarity and friendship intensity (Selfhout et al., 2009).

Understanding how communal motives and perceived similarity interconnect is important because (a) communal motives and perceived similarity each independently have impacts on social relationships and (b) understanding their interconnections may advance our understanding of interconnections between social cognition and social motivation more generally. Therefore, we hope that our findings—along with the preceding caveats regarding causality and generalizability—provide an impetus for further investigations into the mechanisms underlying and boundary conditions surrounding the link between communal motives and perceived similarity. In addition, we hope that other researchers might find the methodology we used to study individual differences in distinct sources of perceived self-other similarity useful when investigating other research questions (e.g., "what are consequences of employees perceiving similarities between themselves and their supervisors?") that involve individuals from one group describing themselves and individuals from another group.

Contributions

- Conceptualized and designed the studies: KDL

- Prepared, translated, and/or refined the materials: All Authors
- Collected the data: All authors
- Analyzed and interpreted the data: KDL
- Drafted the article: KDL
- Approved the article: All authors

Competing interests

The authors have no competing interests.

Supplemental Material

Table S1. *Unregistered Study Participants' Nationality, Gender, and Age.*

Table S2. *Circumplex Scales of Interpersonal Values Items in the Unregistered and Registered Studies.*

Table S3. *Descriptive Statistics and Intercorrelations among Types of Perceived Agreement for Each Gender and Country – Unregistered Study.*

Table S4. *Effects of Communal Motives toward Parents on Perceived Agreement for Each Gender and Country – Unregistered Study.*

Table S5. *Effects of Communal Motives toward Parents or Peers on Perceived Agreement – Unregistered Study.*

Table S6. *Registered Study Participants' Nationality, Gender, and Age.*

Table S7. *Descriptive Statistics and Intercorrelations among Types of Perceived Agreement for Each Gender and Country – Registered Study.*

Table S8. *Effects of Communal Motives toward Parents on Perceived Agreement for Each Gender and Country – Registered Study.*

Table S9. *Tests of Moderating Effects of Presentation Order on Communal Motives' Effects on Perceived Agreement – Registered Study.*

Data Accessibility Statement

The materials, laboratory log, data, and analysis scripts are publicly available at: https://osf.io/26hru/ (doi:10.17605/osf.io/26hru). The Stage 1 protocol received in-principle acceptance on 08-Aug-2020 and may be found at https://osf.io/5yk6g/

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