Pilot Study Relationship Length Effects

There were no relationship length effects, *Fs*<2.23, *p*s>.07.

Gender Effects

Pilot Study

There was a main effect of gender, such that male participants (M_{IOS} = 4.91, SE_{IOS} = 0.16; $M_{overlap}$ = 8.11, $SE_{overlap}$ = 0.22) reported higher overlap scores for all target individuals than females (M_{IOS} = 4.23, SE_{IOS} = 0.10; $M_{overlap}$ = 7.23, $SE_{overlap}$ = 0.14) for both the IOS, $F(1, 190) = 13.59$, $p < .001$, and the self-other overlap measure, $F(1, 190) = 11.83$, $p < .001$.

Study 1

Comparison direction. Male participants were more likely than female participants to recall a downward comparison, *b* = -0.68, *SE* = 0.29, *t*(378) = 2.40, *p* = .02, *Odds Ratio* = 1.98:1.

Domain importance. Female participants (*M* = 5.66, *SE* = 0.10) rated domains as more important than male participants (*M* = 5.29, *SE* = 0.15), *b* = -0.19, *SE* = 0.09, *t*(285.99) = -2.03, *p* = .04.

Self-attributions. There was a significant parent by gender interaction for self-attributions, *b* = -0.24, *SE* = 0.10, *t*(269.52) = -2.47, *p* = .01. For sons, there was no difference between parents, *b* = -0.26, *SE* = 0.16, *t*(289.03) = -1.60, *p* = .11. In contrast, daughters made more attributions to the self when comparing their mother relative to their father, *b* = 0.21, *SE* = 0.10, *t*(218.42) = 2.12, *p* = .03.

There was also a significant direction by gender interaction, *b* = 0.24, *SE* = 0.11, *t*(350.26) = 2.23, *p* = .03. For upward comparisons, there no gender difference, *b* = 0.10, *SE* = 0.18, *t*(366.64) = 0.53, *p* = .60. For downward comparisons, sons made fewer self-attributions than daughters, *b* = -0.38, *SE* = 0.14, *t*(319.93) = -2.78, *p* = .006.

Parent attributions. There was a significant parent by overlap by gender interaction for parent attributions, b = -0.12, SE = 0.05, t(238.05) = -2.30, p = .02. The parent by overlap interaction was not significant for daughters, b = -0.005, SE = 0.05, t(209.24) = -0.09, p = .93, but was for sons, b = -0.24, SE = 0.09, t(248.24) = -2.71, p = .007. Low overlap sons made more parent attributions following mother comparisons than father comparisons, b = 0.28, SE = 0.14, t(206.31) = 1.98, p = .049; however, high overlap sons made more parent attributions following father comparisons relative to mother comparisons, b = -0.44, SE = 0.22, t(275.09) = -2.02, p = .044.

Feelings about relationship. There was a significant direction by gender interaction for feelings about the parent-child relationship, b = 0.18, SE = 0.07, t(359.20) = 2.34, p = .02. For upward comparisons, there was no gender difference, b = 0.10, SE = 0.13, t(364.45) = 0.82, p = .41. For downward comparisons, however, daughters (M = 5.46, SE = 0.12) felt more positively about the parent-child relationship than sons (M = 4.97, SE = 0.14), b = -0.25, SE = 0.09, t(310.97) = -2.65, p = .008.

Study 2

Given the small number of fathers we recruited, we did not test for gender effects because they would not be meaningful.

Domain importance. There was an effect of child's gender on importance ratings, b = 0.27, SE = 0.12, t(157) = 2.30, p = .02. Parents rated domains to be more important for sons than daughter. This effect, however, was qualified by a significant overlap by child's gender interaction, b = 0.14, SE = 0.06, t(157) = 2.36, p = .02. For low overlap parents, there was no effect of child's gender, b = -0.01, SE = 0.16, t(157) = -0.08, p = .93. In contrast, there was there

was an effect of child's gender for high overlap parents, $b = 0.56$, $SE = 0.18$, $t(157) = 3.08$, $p = .002$. High overlap parents rated domains to be more important for sons than daughters.

Study 3

Domain importance. There was a significant effect of gender, such that mothers rated domains to be more important than fathers, $b = -0.24$, $SE = 0.08$, $t(288) = -2.87$, $p = .004$.

Child perceptions. There was an effect of gender such that mothers reported more positive child perceptions than fathers, $b = -0.18$, $SE = 0.08$, $t(288) = -2.34$, $p = .02$

Study 1 Culture Effects

Study 1 was the only sample with sufficient diversity to test for culture effects. These findings, however, should be interpreted caution due to the unequal group sizes. In this sample, we only examined cultural differences between East Asians (83 participants) and Western Europeans (40 participants; -1 = East Asians; 1 = Western Europeans). See Supplementary Table 3 for participants' ethnicities for all studies.

Differences in self-parent overlap. There was a greater difference between mother and father overlap in Western Europeans than East Asians, $b = 0.42$, $SE = 0.16$, $t(120) = 2.67$, $p = .009$. There was no difference between East Asians and Western Europeans in mother overlap, $b = 0.09$, $SE = 13$, $t(121) = 0.66$, $p = .51$. However, Western Europeans reported greater overlap with their father than East Asians, $b = 0.49$, $SE = 0.15$, $t(120) = 3.19$, $p = .002$.

Comparison direction. Western Europeans participants were 2.56 times more likely to make downward comparisons than East Asians, $b = 0.94$, $SE = 0.47$, $t(201) = 1.99$, $p = .047$.

External attributions. There was a significant parent by culture interaction, $b = 0.47$, $SE = 0.15$, $t(105.95) = 3.13$, $p = .002$, which was qualified by a parent by direction by overlap by culture interaction, $b = 0.17$, $SE = 0.08$, $t(115.10) = 2.02$, $p = .046$.

To examine these interactions, we first looked at the parent by overlap by culture interaction for each comparison direction. For downward comparisons, there was no significant parent by overlap by culture interaction, $b = -0.003$, $SE = 0.11$, $t(105.20) = -0.022$, $p = .98$, or parent by culture interaction, $b = 0.20$, $SE = 0.14$, $t(104.14) = 1.12$, $p = .26$. There was a significant parent by overlap by culture interaction for upward comparisons, $b = 0.34$, $SE = 0.13$, $t(129.75) = 2.64$, $p = .009$. We then looked at the parent by culture interaction at different levels

of overlap for upward comparisons. At low levels of overlap, there was no parent by culture interaction, $b = 0.24$, $SE = 0.22$, $t(108.43) = 1.13$, $p = .26$. At high levels of overlap, there was a significant parent by culture interaction, $b = 1.24$, $SE = 0.44$, $t(135.82) = 2.80$, $p = .006$. Finally, we looked at cultural differences for each parent. There was no cultural difference for mothers, $b = 0.63$, $SE = 0.48$, $t(54.91) = 1.31$, $p = .19$. In contrast, East Asians made more external attributions for their father than Western Europeans, $b = -1.85$, $SE = 0.74$, $t(136.02) = -2.50$, $p = .01$.

No other cultural effects were significant, ts < 1.89, ps > .06.

Domain Analyses

Study 1 – Parent Comparisons Domain Analysis

To test whether domains differed across parent type (mother or father), overlap, and direction, we conducted eleven logistic multilevel models (i.e., one for each domain) while controlling for questionnaire order.[1] For each analysis, the target domain was coded as 1 and the other domains were coded as 0. We also adjusted the alpha level to .004 (.05/11) to control the familywise error rate for this set of analyses; there were no significant effects, zs < 2.42, ps > .015. Thus, any differences in domain importance for mothers and fathers (discussed in the manuscript) are unlikely to be the result of differences in the types of domains involved in these comparisons. See Supplementary Table 5 for domains for each parent. See Supplementary Table 6 for results of this analysis.

Study 2 – Child Comparisons Domain Analysis

[1] We did not include the interactions between parent type, overlap, or direction because eight of our models failed to converge when the interactions were entered due to multicollinearity. The models for emotional development and financial supportiveness also failed to converge when we included questionnaire order; thus, we excluded order for these two models.

We tested whether self-child overlap (mean-centered), comparison direction (dummy-coded; upward = 0, downward = 1), and their interaction predicted the comparison domain parents recalled using a multinomial logistic regression because comparison domain is a nominal outcome variable (see Supplementary Table 7 for domains). We set the social development domain as the reference group because it was the most popular domain in Study 3. To control for the familywise error rate, we also adjusted the alpha level to .007 (.05/7) because we compared the social development domain to seven other domains.[2] There were no significant effects of direction, *z*s < 1.48, *p*s > .14, overlap, *z*s < 2.04, *p*s > .04, or their interaction, *z*s < 2.42, *p*s > .016, for any of the domains.

Study 3 – Child Comparisons Domain Analysis

A chi-square test indicated that the comparison domain recalled was not contingent upon comparison condition, $\chi^2(8)=10.38$, $p=.24$.

Birth Order Effects

We tested whether comparing one's firstborn or laterborn child moderated any of our primary effects. We entered birth order as an effects-coded variable (1=firstborn; -1=laterborn).

Study 2 – Spontaneously Recalled Child Comparisons

Comparison direction. There was a birth order by overlap interaction for direction of comparison, *b*=-0.23, *SE*=0.09, *z*(177)=-2.57, *p*=.01. There was no overlap effect for when comparing one's firstborn child, *b*=-0.04, *SE*=0.13, *z*(177)=-0.32, *p*=.75; however, there was an overlap effect when comparing one's laterborn child, *b*=0.41, *SE*=0.11, *z*(177)=3.57, *p*< .001.

[2] We did not compare social development comparisons to music comparisons because only one parent reported a comparison in the music domain.

For laterborn children, parents were more likely to make a downward comparison if they reported greater self-child overlap.

Birth order did not moderate any other effects in Study 2, *t*s < 1.81, *p*s > .07.

Study 3 – Child Comparisons Experiment

Child perceptions. There was a significant comparison direction by birth order interaction, *b*=0.16, *SE*=0.07, *t*(294)=2.47, *p*=.01. After an upward comparison, Parents who compared their firstborn child perceived their child more positively than parents who compared their laterborn child, *b*=0.21, *SE*=0.10, *t*(294)=2.13, *p*=.03. There was no difference between perceptions of firstborn and secondborns following downward comparisons, *b*=-0.12, *SE*=0.09, *t*(294)=-1.32, *p*=.19.

Birth order did not moderate any other effects in Study 3, *t*s < 1.73, *p* > .08.

Results from Study 2 Excluding Participants Who Compare Their Children to Each Other

In these analyses, we excluded 30 participants (18 downward comparisons; 12 upward comparisons) who compared their target child to another one of their children.

Importance ratings. Consistent with results using the full sample, greater overlap predicted lower importance ratings regardless of comparison direction, b = -0.14, SE = 0.06, $t(132)$ = -2.19, p = .03. Although upward participants (M = 1.51, SE = 0.21) rated domains as less important than downward participants (M = 1.80, SE = 0.16), the direction effect was no longer significant, b = -0.15, SE = 0.13, $t(132)$ = -1.08, p = .28. Given that the direction effect in Studies 2 and 3 are small ($r_{\text{Study 2}}$ = .16; $r_{\text{Study 3}}$ = .15), this nonsignificant effect is to be expected when the sample is reduced. The direction by overlap interaction was not significant, b = -0.01, SE = 0.06, $t(132)$ = -0.17, p = .86.

Child perceptions. Consistent with the results using the full sample, upward participants (M = 3.78, SE = 0.17) viewed their child less positively than downward participants (M = 6.06, SE = 0.13), b = -1.14, SE = 0.11, $t(138)$ = -10.74, p < .001. Higher overlap also predicted more positive perceptions, b = 0.12, SE = 0.05, $t(138)$ = 2.45, p = .02. There was no interaction, b = 0.07, SE = 0.05, $t(138)$ = 1.35, p = .18.

Attributions. Consistent with results using the full sample, the multivariate regression revealed an effect of direction, $F(3, 132)$ = 5.60, p = .001. Unexpectedly, there was also an effect of overlap, $F(3, 132)$ = 3.08, p = .03. The overlap by direction interaction was not significant, $F(3, 132)$ = 0.57, p = .64.

Self-attributions. For self-attributions, there was only an effect of self-child overlap, b = 0.19, SE =0.08, $t(134)$ = 2.22, p =.03. Parents higher in overlap reported more self-attributions. No other effects were significant, ts < 0.50, ps > .61.

Child attributions. Consistent with results using the full sample, there was an effect of comparison direction, $b = -0.74$, $SE = 0.18$, $t(134) = -4.09$, $p < .001$. Upward participants made fewer child attributions ($M = 3.80$, $SE = 0.29$) than downward participants ($M = 5.28$, $SE = 0.22$). No other effects were significant, ts < 1.56, ps > .12.

External attributions. Consistent with results using the full sample, no effects were significant, ts < 0.91, ps > .36.

Supplementary Table 1.

Factor Loadings for Exploratory Factor Analysis of Self-Other Overlap Measure for Various Close Others (Pilot Study).

Item	Partner	Child	Close Friend	Mother	Father
IOS	.833	.756	.757	.825	.764
I feel very interconnected with my partner/child/friend/mother/father.	.897	.778	.820	.865	.947
My partner/child/friend/mother/father is a major part of who I am	.836	.772	.758	.906	.926
My partner/child/friend/mother/father and I are almost always 'on the same wavelength'	.892	.856	.862	.937	.926
My identity and my partner's/child's/friend's/mother's/father's identity overlap a great deal.	.825	.818	.745	.764	.784
I tend to think of my partner/child/friend/mother/father and I as a unit, not as two separate individuals	.798	.584	.741	.741	.825
Correlation between IOS and mean self-other overlap	.712	.803	.714	.814	.752

Supplementary Table 2.

Factor Loadings for Exploratory Factor Analysis of Self-Other Overlap Measure for Various Close Others (Study 2).

Item	Mother	Father
I feel very interconnected with my mother/father.	.932	.887
My identity and my mother's/father's identity overlap a great deal.	.635	.784
My mother/father and I are very close.	.907	.868
It's hard to imagine what kind of person I would be like without my mother/father.	.752	.846
My mother/father is a major part of who I am.	.674	.898
When thinking about the future, I always think about my mother's/father's future and my own future together, rather than just my future.	.546	.620

Supplementary Table 3.

Child Age Categories for Pilot Study and Studies 2-3.

Age Group	Pilot Study	Study 2	Study 3
Infant (0 – 1 years old)	22	39	41
Toddlers (2 – 3 years old)	28	9	27
Preschoolers (3 – 4 years old)	14	10	43
Grade School Children (5 – 12 years old)	67	62	143
Teenagers (13 – 18 years old)	39	52	49
Young Adult (19 – 24 years old)	12	-	-
Adult (25 – 40 years old)	10	-	-

Note. For Studies 2-3, the child's age is the child's age at the time of the comparison.

Supplementary Table 4.

Participant Ethnicities for All Studies.

	Pilot Study (*N*=192)	Study 1 (*N*=228)	Study 2 (*N*=172)	Study 3 (*N*=303)
Arab	3 (1.56%)	3 (1.32%)		1 (0.33%)
Black or African American	10 (5.21%)	2 (0.88%)	6 (3.49%)	21 (6.93%)
Caucasian/White	147 (76.56%)	51 (22.37%)	122 (70.93%)	229 (75.58%)
East Asian (Chinese, Japanese, & Korean)	2 (1.04%)	83 (36.40%)	18 (10.47%)	2 (0.66%)
Latin American/Hispanic	5 (2.60%)	6 (2.63%)	3 (1.74%)	12 (3.96%)
North American Indian/Alaskan/Aboriginal		1 (0.44%)		1 (0.33%)
South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)	1 (0.52%)	28 (12.28%)		5 (1.65%)
Southeast Asian (e.g., Vietnamese, Cambodian, Filipino, etc.)	2(1.04%)	10 (4.39%)		4 (1.32%)
West Asian (e.g., Iranian, Afghani, etc.)		7 (3.07%)		
Biracial	16 (8.33%)	22 (9.65%)		13 (4.29%)
Multiracial	4 (2.08%)	1(0.44%)	5 (2.91%)	5 (1.65%)
Don't Know				1 (0.33%)
Choose not to respond	2 (1.04%)	3 (1.32%)		8 (2.64%)
Other		11 (4.82 %)	18 (10.47%)	1 (0.33%)

Note. In Study 1, Eastern and Western Europeans are both classified under Caucasian/White.

Supplementary Table 5.

Comparison Domains for Mother and Father Comparisons (Study 1).

Comparison Domain		Mother	Father
Social economic status	Upward	2	4
	Downward	2	9
Emotional development (e.g. able to feel empathy, able to express own emotions)	Upward	9	5
	Downward	9	7
Emotional supportiveness	Upward	21	18
	Downward	41	35
Uniqueness (i.e. has interesting perspectives, hobbies)	Upward	4	2
	Downward	3	9
Financial supportiveness	Upward	0	4
	Downward	3	11
Physical appearance	Upward	2	1
	Downward	4	1
Open communication	Upward	7	13
	Downward	12	10
Health	Upward	1	3
	Downward	4	3
Strictness/Control	Upward	26	16
	Downward	19	21
Parents' relationship quality (e.g., How well your parents get along with one another)	Upward	1	7
	Downward	3	5
Other	Upward	6	7
	Downward	15	6

Supplementary Table 6.

Logistic Multilevel Models Results for Comparisons Domains (Study 1).

	Socioeconomic Status			Emotional Development			Emotional Supportiveness			Uniqueness		
	b	*z*	*p*	*b*	*z*	*p*	*b*	*z*	*p*	*b*	*z*	*p*
Intercept	-3.313	-10.560	< .001	-8.772	-6.127	< .001	-0.901	-5.860	< .001	-3.385	-9.608	< .001
Direction	0.045	0.137	.891	1.157	2.028	.043	-0.171	-1.168	.243	0.168	0.554	.580
Parent	-0.475	-1.530	.126	0.585	1.445	.149	0.149	1.179	.239	-0.504	-1.759	.079
Overlap	0.158	0.694	.488	0.561	1.418	.156	0.028	0.286	.775	0.637	2.422	.015
Order	0.142	0.499	.618	-	-		-0.129	-1.000	.318	0.147	0.545	.586

	Financial Supportiveness			Physical Appearance			Open Communication			Health		
	b	*z*	*p*	*b*	*z*	*p*	*b*	*z*	*p*	*b*	*z*	*p*
Intercept	-14.569	-4.956	< .001	-4.064	-8.875	< .001	-7.509	-7.596	< .001	-16.892	-3.473	< .001
Direction	-2.549	-1.929	.054	-0.282	-0.628	.530	0.203	0.445	.656	4.618	1.273	.203
Parent	-1.251	-1.509	.131	0.254	0.640	.522	-0.043	-0.133	.895	0.503	0.504	.614
Overlap	-2.120	-2.272	.023	-0.401	-1.460	.144	-0.067	-0.214	.831	-0.339	-0.308	.758
Order	-	-	-	-0.124	-0.319	.750	-0.128	-0.257	.797	-0.051	-0.027	.978

	Strictness			Parent Relationship Quality			Other		
	b	*z*	*p*	*b*	*z*	*p*	*b*	*z*	*p*
Intercept	-1.993	-4.662	< .001	-3.551	-9.831	< .001	-10.455	-5.991	< .001
Direction	0.530	2.401	.016	0.393	1.116	.265	-1.812	-2.228	.026
Parent	0.057	0.332	.740	-0.596	-1.691	.091	1.206	2.315	.021
Overlap	0.325	2.012	.044	0.133	0.563	.574	-0.823	-1.843	.065
Order	0.200	0.984	.325	0.383	1.188	.235	0.067	0.095	.924

Note: We adjusted the alpha level to .004 (.05/11) to control the familywise error rate for this set of analyses.

For uniqueness, a 1-unit increase in overlap predicted a 1.89-fold increase in the likelihood that the participant made a comparison about uniqueness instead of a comparison in another domain.

For financial supportiveness, a 1-unit increase in overlap predicted an 8.33-fold increase in the likelihood of making a comparison in a domain other than financial supportiveness.

For strictness, there was a 2.89-fold increase in the likelihood of making a comparison about strictness upward comparison than a strictness downward comparison.

For other domains, there was a 11.16-fold increase in the likelihood of making a comparison in another domain for mothers than for fathers. There was a 37.52-fold increase in the likelihood of making a downward comparison in another domain than an upward comparison in another domain.

Supplementary Table 7.

Comparison Domains for Child Comparisons (Studies 2-3).

Comparison Domain		Study 2	Study 3
Social development (e.g. acts polite, is kind to others, has many friends)	Upward	13	26
	Downward	25	39
Emotional development (e.g. able to feel empathy, able to express own emotions)	Upward	4	9
	Downward	9	6
Language development (e.g. first words, saying simple phrases, understanding sentences)	Upward	8	11
	Downward	8	13
Movement/physical development (e.g. taking first steps, can hold up own head)	Upward	11	17
	Downward	26	22
Cognitive development (e.g. able to think logically)	Upward	7	4
	Downward	8	8
Academic achievement (e.g. good marks in school, positive teacher feedback about intelligence)	Upward	10	32
	Downward	9	47
Sports (e.g. runs fast, is physically fit)	Upward	6	25
	Downward	6	22
Music skills (e.g. able to learn an instrument, able to hold a tune)	Upward	1	1
	Downward	0	4
Other	Upward	10	12
	Downward	19	5