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**The Development of Self–Other Overlap from Childhood to Adolescence**

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**Abstract**

This study aimed to clarify the developmental course of self–other overlap (SOO) from mid-childhood to late adolescence. Results showed that SOO’s development varied across relationship type: whereas self–stranger overlap rose, one’s overlap with mother, father, friend, and classmate all declined, with those for parents dipping most.

*Keywords*:Self–other overlap,inclusion of other in self, interpersonal relationship, self, adolescence

**The Development of Self–Other Overlap from Childhood to Adolescence**

Self–other overlap (SOO) is an index of perceived psychological closeness between self and other (Aron et al., 1992). SOO is a useful way to characterize one’s relationship with parents, friends, romantic partners, acquaintances, and strangers (Aron & Fraley, 1999; Braams & Crone, 2017; Collyer & Marcovitch, 2019). Moreover, it is often via the role of SOO that various interventions aiming to promote empathy and prosocial behavior work (Cooke et al., 2018; Feng et al., 2020).

Despite its importance in understanding and shaping interpersonal relationships, SOO’s developmental course is poorly understood. A remarkable transition in interpersonal relationships take place from mid-childhood to late adolescence (Smetana et al., 2006). As a cognitive representation of self–other relationship, SOO may also change during that period. Preliminary evidence supports this possibility. In a sample of 9- to 26-year-olds, SOO with mother and best friend decreased with age (Braams & Crone, 2017). Another study found that, although 5- to 6-year-olds and 7- to 8-year-olds were comparable on self–peer overlap, older (than younger) children were more differentiating on SOO between a best friend and an acquaintance (Collyer & Marcovitch, 2019). Nevertheless, those studies are limited in relationship range (mother and peers), sample size (*N*=233 or 90), and cultural background (individualistic culture only). Moreover, the finding of age group interacting with relationship type in influencing SOO (Collyer & Marcovitch, 2019) implies that the development of SOO varies across relationship type, but this possibility remains untested.

Given the potential relevance of SOO to children’s development in critical domains of social interactions, such as motivation to social engagement, a sense of belonging, and social learning (Collyer & Marcovitch, 2019), it is necessary to increase understanding of SOO in childhood and adolescence. We set that goal in the present study, while addressing limitations in the literature. We recruited a large sample (*N*=2,097; 1198 boys, 899 girls) across a broad age range (7–18 years, *M*=13.58, *SD*=2.83) in a collectivistic culture (China). We assessed SOO across diverse relationships: mother, father, friend, classmate, celebrity, and stranger, by using the Inclusion of Other in Self (IOS) scale (Aron et al., 1992). The IOS scale is a single-item measure of psychological closeness, with good convergent validity (Aron & Fraley, 1999). Participants viewed seven pairs of circles; for each pair, the first circle represented the self, the second represented another person. The space between the two circles varied from no overlap (1) to almost complete overlap (7). Participants indicated which pair reflected their relationship with another person. They completed the IOS scale six times, with the second circle representing their mother (*M*=5.48, *SD*=1.57), father (*M*=4.93, *SD*=1.70), friends (*M*=4.52, *SD*=1.52), classmates (*M*=3.79, *SD*=1.50), a Chinese celebrity (Ming Yao, a former basketball player; *M*=2.01, *SD*=1.56), or anonymous strangers (*M*=1.60, *SD*=1.35). This study was approved by the Ethics Committee of the Institute of Psychology of the Chinese Academy of Sciences. All participants provided written informed consent.

Our study design had a hierarchically structured dataset, with the six IOS scores nested within-subjects. We adopted multilevel analysis (via SPSS26), which can account for associations among the IOS scores from the same participant. We used a generalized linear mixed model (GLMM) to handle the ordinal nature of the IOS scores. To test whether the development of SOO varies across relationship type, we included the Relationship Type × Age interaction in the model. In addition, we tested exploratorily the Relationship Type × Sex and Relationship Type × Age × Sex interactions to examine whether boys and girls would differ on SOO while relationship types (and their ages) vary.

Age interacted with relationship type to influence SOO, *F*(6, 12506)=123.37, *p*<.001. Overlap with mother (*B*=-0.35, 95% CI [-0.38, -0.31], odds ratio [OR]=0.71, *p*<.001) or father (*B*=-0.21 [-0.24, -0.18], *OR*=0.81, *p*<.001) obviously declined across age, whereas the decrease in self–classmate (*B*=-0.08 [-0.11, -0.05], *OR*=0.92, *p*<.001) or self–friend (*B*=-0.04 [-0.07, 0.00], *OR*=0.97, *p*=.028) overlap was relatively small. In contrast, self–stranger overlap increased across age (*B*=0.26 [0.22, 0.31], *OR*=1.30, *p*<.001). Self–celebrity overlap did not vary by age (*p*=.174).

Sex interacted with relationship type in predicting self–other overlap, *F*(6, 12506)=11.31, *p*<.001. Results revealed no sex differences on SOO for mother, friend, or classmate (*p*s>.09), but significant sex differences on SOO for father (*B*=0.23 [0.06, 0.41], *OR*=1.26, *p*=.010), celebrity (*B*=0.71 [0.51, 0.90], *OR*=2.02, *p*<.001), and stranger (*B*=0.30 [0.07, 0.52], *OR*=1.35, *p*=.009), with girls reporting less SOO than boys. Given such sex differences, we display SOO’s developmental trend separately for boys and girls (Figure 1). Notably, the Relationship Type × Age × Sex interaction was not significant (*p*=.162).

We illustrated SOO’s developmental course from mid-childhood to late adolescence. SOO for mother, father, classmates, and friends declined with age. This finding replicated prior results that self–mother and self–friend overlaps decline chronologically in individualistic culture (Braams & Crone, 2017). We extended the literature by demonstrating that decrease in SOO varied by relationship type, with the decline being stronger for self­–parent than self–peer overlap. The decline of self–parent overlap supports the proposition that parental influence wanes constantly throughout adolescence (Harris, 2009; Smetana et al., 2006). The decrease of self–peer closeness indicates that peer influence does not rise monotonically. This result pattern opposes popular views that peer influence grows while youths progress from childhood to adolescence (Harris, 2009; Smetana et al., 2006), thus implying a complex pattern of peer influence. The finding of increasing self–stranger overlap suggests rises in relatedness with generalized others from mid-childhood to late adolescence. Exploring this transition can complement research on social interactions between strangers (Feng et al., 2020).

 Besides age, SOO was also influenced by sex, whose effect was qualified by relationship type. Girls manifested smaller SOO for father, celebrity, and stranger than boys, whereas they evinced comparable SOO for mother, friend, and classmate. However, a prior study on a Western sample reported a sex difference in self–friend overlap, with it being larger among girls (Braams & Crone, 2017). The inconsistency may arise from the fact that (1) the prior study focused on best friend, whereas we focused on non-specific friends, and/or (2) the prior study was underpowered. Nevertheless, the prior finding and ours together suggest that sex plays a role in shaping children’s psychological closeness with others.

In conclusion, our study begins to clarify SOO’s developmental course from middle childhood to late adolescence. Follow-up investigations might use additional SOO measures (e.g., the trait misattribution task; Collyer & Marcovitch, 2019) and longitudinal designs, which can eliminate cohort effects and uncover development at both group and individual levels.

**Disclosure of Conflict of Interest**

There is no conflict of interest.

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**Figure Captions**

**Figure 1.** (A) Developmental course of self–other overlap for boys. (B) Developmental course of self–other overlap for girls.