Self-Other Overlap and the Differentiation of Related Concepts: Postprint

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Abstract

On the basis of summarizing the conceptual development, measurement methods, structure, and commonly employed modification approaches of self-other overlap, this study clarifies its essential characteristics by analyzing its relationships with relational self and self-expansion, as well as its similarities and differences with social distance. Self-other overlap constitutes a relational self that emphasizes shared representations between self and other, resulting from individuals' incorporation of others' resources, perspectives, and traits driven by self-expansion motivation. Future research may draw upon findings regarding the neural mechanisms of relational self to investigate the neural underpinnings of self-other overlap, and may also delve deeper into the detrimental effects of excessively high self-other overlap on intimate relationships.

Full Text

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Abstract

Self-other overlap refers to the overlap in self-concept between individuals and others. Previous research has proposed multiple conceptualizations of self-other overlap and developed various measurement tools to assess its two dimensions: perceived closeness and overlapping representation. Additionally, numerous methods have been created to modify individuals'levels of self-other overlap with

others. This article analyzes the relationships between self-other overlap and related concepts including relational self, self-expansion, and social distance. We find that self-other overlap results from self-expanding activities through which individuals incorporate others' identities, resources, and perspectives into the self. Future research should explore the neural mechanisms underlying self-other overlap and investigate its negative impacts on interpersonal relationships.

Keywords: Self-other overlap; relational self; self-expansion; social distance

Humans are inherently social beings, and relationships between individuals and others are of great significance for social interaction (Zickfeld & Schubert, 2017). As interpersonal interactions deepen, individuals increasingly perceive intimacy with others, and their behaviors and viewpoints become more similar—creating a sense of "you in me, and I in you" and "two people becoming like one" (Zhong Yiping, Yang Zilu, & Fan Wei, 2015). This phenomenon is known as self-other overlap, which describes the relationship between an individual and others. Enhancing self-other overlap helps improve interpersonal relationships. Higher levels of self-other overlap lead individuals to unconsciously mimic peers' behaviors (Lumsden, Miles, & Macrae, 2014; Maister & Tsakiris, 2016) and protect companions' positive images in social comparisons (Thai & Lockwood, 2015; Scholer, Ozaki, & Higgins, 2014). Moreover, higher self-other overlap enables individuals to understand others' intentions and emotional states promptly and accurately (Bernstein, Laurent, Nelson, & Laurent, 2015), thereby consolidating relationships (Thai & Lockwood, 2015). Increasing self-other overlap can also improve intergroup relations. When individuals incorporate outgroup members into the self, resulting in higher self-other overlap, they effectively reduce prejudice against outgroups (Hewstone et al., 2014) and decrease stereotypes (Aron et al., 2004; Laurent & Myers, 2011; Wang, Kenneth, Ku, & Galinsky, 2014). Even simply knowing that an ingroup member has a friendship relationship with an outgroup member can produce extended intergroup contact effects that effectively reduce outgroup bias (Simpson & Todd, 2017). Consequently, numerous studies have investigated self-other overlap from various angles, including measurement methods, structure, and techniques for altering its level (Aron, Aron, Tudor, & Nelson, 1991; Aron et al., 2004; Aron, Lewandowski, Mashek, & Aron, 2013; Myers, Laurent, & Hodges, 2014). Building on this existing research, this article clarifies the essential characteristics of self-other overlap by examining its relationship with relational self and its similarities and differences with social distance.

1.1 The Concept of Self-Other Overlap

When studying intimate relationships such as kinship, friendship, and romantic love (Pietromonaco, Uchino & Dunkel, 2013), Aron et al. (1991) first introduced the concept of self-other overlap to characterize the intimacy level between individuals and others. For a period after its introduction, researchers defined self-other overlap from a personality trait perspective as the phenomenon where individuals perceive themselves and others as having identical or similar per-

sonality traits, thereby reducing perceived differences in mental representations between self and other (Aron, Aron, Tudor, & Nelson, 1991; Batson, Early, & Salvarani, 1997; Davis, Conklin, Smith, & Luce, 1996). For instance, Batson et al. argued that self-other overlap arises from "psychological indistinguishability," where individuals view themselves and others as a single entity, confusing their respective traits and making it difficult to distinguish self from other (Batson et al., 1997). Similarly, Davis et al. regarded self-other overlap as an overlap in mental representations between self and other—a cognitive phenomenon representing the fusion of self and other in terms of personality traits (Davis et al., 1996). Aron et al. (1991) asked participants to recall nouns from a free recall task and found no significant difference in recall performance between nouns associated with participants' mothers and those associated with themselves. The "Me/Not me" task also revealed that when trait adjectives were suitable for describing both participants and their spouses, participants showed the shortest reaction times and lowest error rates in making judgments. In such cases, participants exhibited self-other confusion in representing personality traits, indicating that they shared certain cognitive representations of personality traits with close others. This confusion in representing self and other led participants to feel that others had become part of the self, incorporating others into the self (Aron et al., 2004). Therefore, Aron et al. (1991) defined self-other overlap as the overlap in cognitive representations of personality traits between individuals and others to characterize intimate relationships.

Recent research has expanded the concept of self-other overlap to include the increasing similarity in viewpoints and resources that occurs as intimacy between individuals and others develops (Aron et al., 2013). When individuals incorporate others' "resources" —material, knowledge, or social assets that help achieve personal goals—into the self, they come to believe they possess or can utilize these resources (Aron et al., 2004). Examples include friends sharing study materials, couples sharing a house, or knowing a friend' s friends. This resource sharing leads individuals to view others' gains and losses as equally important as their own. In a decomposed-game money allocation experiment, Aron et al. (1991) found that participants made fairer allocations between themselves and their best friends compared to allocations with acquaintances, strangers, or disliked individuals, and some even allocated more money to their best friends. Furthermore, when individuals incorporate others' "viewpoints" into the self, they actively adopt others' perspectives to view situations from their standpoint (Mattingly, Lewandowski, & Jr, 2013). For example, although people typically attribute their own negative behaviors to external situational factors and others' negative behaviors to internal personal factors, when they incorporate others into the self, they more frequently explain others' negative behaviors using situational factors (Aron & Aron, 2009). Thus, self-other overlap represents the phenomenon where individuals reduce distinctions between self and other, include others in the self, treat others' resources, viewpoints, and traits as part of themselves, and exhibit overlapping information representations when representing self and other (Aron et al., 2013).

1.2 Measurement Methods for Self-Other Overlap

Researchers have measured self-other overlap from various perspectives. Among these, the IOS Scale (Inclusion of Other in the Self Scale) developed by Aron et al. (1992) is currently the most widely used method (Laurent & Myers, 2011; Myers et al., 2014; Peterson, Bellows, & Peterson, 2015; Kleps, Jaroszynska & Piaskiewicz, 2015). This scale asks participants to select one pair of circles from seven pairs with varying degrees of overlap to describe their relationship with a target other. The greater the overlap area between the two circles, the greater the perceived overlap between self and other. Hodges, Sharp, Gibson, and Tipsord et al. (2013) developed the Dynamic IOS Scale based on the IOS Scale, requiring participants to move two separate circles until the distance between their centers adequately describes the relationship between themselves and others.

Beyond geometric figures, researchers have also used general feelings to represent self-other overlap levels. The "We-ness" Scale asks participants to rate on a 9-point scale the extent to which they are willing to use "We" to describe themselves and target others (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). The Perceived Similarity Scale measures self-other overlap by asking participants to rate the perceived similarity between themselves and target individuals on a 9-point scale (Batson et al., 1997; Myers & Hodges, 2011).

The Adjective Checklist Overlap and Absolute Difference in Attribute Ratings methods utilize trait adjectives to describe traits of individuals and others. In the adjective checklist method, the more individuals use identical adjectives to describe themselves and others, the higher their self-other overlap (Davis et al., 1996; Myers & Hodges, 2011). Batson et al. (1997) argued that individuals' inability to distinguish themselves from others with high self-other overlap stems from their inability to differentiate personality traits between self and other. Therefore, they used the trait absolute difference scale, asking participants to rate separately the extent to which trait adjectives described themselves and others, using the difference between these ratings to characterize self-other overlap (Myers & Hodges, 2011).

The Relationship Closeness Index (RCI) measures self-other overlap at the behavioral level by using interaction details between individuals and others. The RCI comprises three components: Frequency, which asks participants to estimate the amount of time spent with target individuals in the past week; Diversity, which asks participants to indicate from 38 activity types which ones they engaged in with target individuals during the past week; and Intensity, which asks participants to assess the degree to which target individuals can influence their decisions, activities, and plans—for example, "This person affects my future economic security" or "This person influences important matters in my life" (Berscheid, Snyder, & Omoto, 1989; Myers & Hodges, 2011).

1.3 The Structure of Self-Other Overlap

Myers and Hodges (2011) argued that different measurement methods assess different structures of self-other overlap. Through factor analysis of measurement methods including the IOS Scale, Dynamic IOS, "We-ness," perceived similarity, adjective checklist, absolute difference in attribute ratings, and RCI, they found that self-other overlap comprises two dimensions: perceived closeness and overlapping representation.

Perceived closeness describes the intimacy individuals perceive between themselves and others—the greater the perceived intimacy, the higher the perceived closeness. The IOS Scale, Dynamic IOS, "We-ness," perceived similarity, and the RCI Intensity subscale all loaded onto the perceived closeness dimension. Recent research has also found that perceived intimacy is one of the important factors influencing self-other overlap (Zhou Li & Su Yanjie, 2008; Tan, Zhan, Gao, Fan, Chen, & Zhong, 2015). Zhou Li and Su Yanjie (2008) used the IOS Scale to measure participants' perceived intimacy with romantic partners and found that participants with lower intimacy showed significantly better trait adjective recognition in self-reference conditions than in partner-reference conditions, while participants with higher intimacy showed no significant difference in recognition performance between the two conditions. Tan et al. (2015) asked participants to assess their self-other overlap with immediate family members, extended family members, and distant relatives, finding that participants scored higher on the IOS Scale with closer blood relatives, and that increased social interaction with these relatives further enhanced self-other overlap.

Overlapping representation represents the similarity between individuals and others in terms of traits or attributes—the more similar individuals are to others in personality traits or attributes, the higher the overlapping representation (Myers & Hodges, 2011). For example, sharing certain personality traits, having the same hometown, or liking the same sports team can all increase overlapping representation between individuals and others. Both the adjective checklist and absolute difference in attribute ratings loaded onto the overlapping representation dimension (Myers & Hodges, 2011). Recent research provides evidence that perceived similarity between self and other increases self-other overlap (Cheng & Grühn, 2015; Alves, Koch, & Unkelbach, 2016; Davis, 2016; Burton et al., 2017; Kneebone, Fielding, & Smith, 2017). Researchers informed participants during interactions with others (confederates) that the others shared similar characteristics with them (Cheng & Grühn, 2015; Alves et al., 2016)—for example, having the same hometown, zodiac sign, favorite celebrity, or similar views on certain issues (Alves et al., 2016). Results from both the adjective checklist and perceived similarity scales indicated that when participants perceived high similarity with others, their self-other overlap with those others was also higher.

1.4 Methods for Increasing Self-Other Overlap

To increase self-other overlap, researchers have employed methods requiring participants to imagine or infer others' thoughts, or to actually imitate others' actions, thereby enhancing perceived intimacy and similarity between self and other.

Both perspective taking and knowing that one' s perspective is being taken by others can increase self-other overlap (Galinsky, Maddux, Gilin, & White, 2008; Goldstein, Vezich, & Shapiro, 2014). Perspective taking is the psychological process of imagining or inferring others' viewpoints and attitudes from their position or situation (Diazgranados, Selman, & Dionne, 2016). Researchers commonly present participants with videos, audio recordings, reading materials, or photos related to others, and use virtual reality technology to present specific individual images, requiring participants to adopt either the imagine-self method or the imagine-other method to take target individuals' perspectives (Laurent & Myers, 2011; Myers et al., 2014; Peterson et al., 2015; Sassenrath, Hodges, & Pfattheicher, 2016; Cooke, Bazzini, Curtin, & Emery, 2018; Oh, Bailenson, Weisz, & Zaki, 2016). The imagine-self method asks participants to stand in others' shoes and imagine what they would think and feel if others' experiences happened to themselves, while the imagine-other method asks participants to imagine what others would think and feel while experiencing events (Baston et al., 1997). The imagine-self method elicits higher self-other overlap than the imagine-other method (Davis et al., 1996; Myers et al., 2014; Peterson et al., 2015; Buffone, Poulin, Delury, Ministero, & Morrisson, 2017). On one hand, the two methods elicit different emotional experiences, generating different feelings toward target others. The imagine-self method emphasizes both self-oriented and other-oriented emotional experiences, focusing participants on both others ("If I were in that person' s situation···") and themselves ("What would I feel?"), whereas the imagine-other method only activates other-oriented empathic concern ("What would that person feel in this situation?") (Batson et al., 1997; Myers et al., 2014). On the other hand, the two methods have different effects on self-other distinction. Compared to the imagine-self method, the imagine-other method leads to increased self-other distinction (Batson et al., 1997), while the imagine-self method generates more self-related thoughts and fewer other-related thoughts (Davis et al., 1996), reducing self-other distinction. Additionally, fMRI research has found that when participants imagine themselves experiencing pain that target individuals are experiencing, their brain activity in relevant regions is similar to that when they actually experience pain themselves, whereas when participants imagine others experiencing pain, their brain activity is consistent with that observed when they are explicitly asked to distinguish self from other (Buffone et al., 2017).

Embodied simulation also increases self-other overlap between individuals and others (Gallese & Sinigaglia, 2011). One study required participants to perform arm extension exercises at the same or different pace as individuals in videos and found that participants in the synchronous action group rated higher self-other

overlap with the video characters on the IOS Scale than those in the asynchronous group (Lumsden et al., 2014). Imitating others' actions elicits neural activity in the mirror neuron system (Ruggiero & Catmur, 2018) that is identical or similar to that observed when executing the actions oneself (Avenanti, Candidi, & Urgesi, 2013; Lumsden et al., 2014), helping individuals experience others' behaviors, simulate others' mental activities, and infer others' internal states (Tiba & Manea, 2018). This creates isomorphic, overlapping mental representations between self and other, enhancing self-other overlap.

2 The Essence of Self-Other Overlap and Differentiation of Related Concepts

Self-other overlap is a type of relational self that emphasizes similar representations between self and other, resulting from individuals incorporating others' resources, viewpoints, and traits into the self under the motivation of self-expansion (Aron et al., 1991; Aron et al., 2004; Aron et al., 2013; Sedikides, Gaertner, Luke, O' Mara & Gebauer, 2013).

2.1 Relational Self

Markus and Kitayama (1991) first proposed the concept of self-construal, which refers to understanding the self from the perspective of relationships between self and others. Building on this, Brewer and Gardner (1996) proposed the tripartite model of self-construal, suggesting that individuals' self-construal comprises three components: individual self, collective self, and relational self. The relational self emphasizes relationships between self and other individuals, defining the relational self through relationships with significant others (Sedikides et al., 2013; Rahat & İlhan, 2016). It is closely related to protecting significant others' interests and maintaining relationships with them (Sedikides et al., 2013). Significant others are those who have important influence and meaning for individuals, including parents, siblings, friends, and romantic partners (Leising, Scharloth, Lohse, & Wood, 2014).

On one hand, the relational self emphasizes differences between individuals' representations of self and other, helping individuals distinguish themselves from others and generating self-other distinction. This gives individuals the ability to differentiate representations of actions, perceptions, sensations, and emotions between self and other (Tomova, Heinrich, & Lamm, 2018). On the other hand, the relational self also emphasizes similarities between individuals' representations of self and other (Aron et al., 2009). These similar representations are core factors in bringing individuals and others closer, indicating that individuals' overall cognition of self and other is similar—that is, "this person is like me." This similarity further makes individuals perceive greater intimacy with others. Thus, when the similar components between self-representation and other-representation in the relational self are emphasized, the distinction between self and other decreases, and individuals incorporate others into the self

(Aron et al., 1991; Aron et al., 2004; Aron et al., 2013), creating overlap between representations of others' concepts and self-concepts. Therefore, we propose that self-other overlap is a relational self that emphasizes similar representations between self and other.

Research on the relational self has identified the relational self-reference effect through self-reference experimental paradigms (Huang et al., 2014). Memory performance for trait adjectives in significant-other reference conditions is significantly better than in general-other reference or semantic processing conditions (Wu, Wang, He, Mao, & Zhang, 2010). Serbun, Shih, and Gutchess (2011) found that both self-reference and mother-reference facilitated trait adjective memory to the same degree and also promoted memory for details related to trait words. Studies using self-other overlap to measure relationships between self and others have found similar results (Aron et al., 1991), where high self-other overlap with mothers resulted in no significant difference in recall performance between nouns associated with mothers and those associated with the self. Individuals may use similar processing mechanisms when processing information related to mothers as when processing self-related information (Aron et al., 1991; Aron et al., 2004).

2.2 Self-Expansion

Self-expansion is central to human motivational systems (Aron & Aron, 2009), achieved by incorporating others' resources, viewpoints, and traits into the self (Mattingly et al., 2013), thereby motivating individuals to develop relationships with others (Aron et al., 2004). Lewandowski, Jr, Aron, Bassis, and Kunak (2006) demonstrated from the perspective of relationship dissolution that developing a new relationship can expand the self. In a new relationship, the more knowledge individuals acquire and abilities they develop, the greater the negative impact on their self-concept when that relationship dissolves. Therefore, the stronger a relationship' s self-expansion quality, the more individuals incorporate others into the self, and the greater the resulting self-other overlap (Aron et al., 1991; Aron et al., 2004; Aron et al., 2013; Aron & Aron, 2015). Consequently, we propose that self-other overlap is the result of individuals incorporating others into the self for the purpose of self-expansion.

2.3 Similarities and Differences Between Self-Other Overlap and Social Distance

The concept of social distance is very similar to self-other overlap (Garcia-Retamero & Galesic, 2012). Social distance refers to individuals' perception of how close or distant their relationship is with others, and in many studies exploring relationships between individuals and others, social distance is often broadly referred to as mental distance (Mantovani, Andrade, & Negrão, 2017). Researchers primarily define social distance between individuals and others from three perspectives: familiarity, intimacy, and similarity (Sun, Liu, Zhang, & Lu, 2016; Krueger, Ullrich, & Chen, 2016). The more familiar and intimate indi-

viduals are with others, the closer their social distance. For example, college student participants perceive closer social distance with a friend than with a stranger (Garcia-Retamero & Galesic, 2012), and closer social distance with an acquaintance than with a stranger (Myers et al., 2014; Zhong Yiping, Yang Zilu, & Fan Wei, 2015). The higher the interpersonal similarity between self and other, the closer individuals perceive their social distance with those who share similar life experiences, attitudes, or trait attributes (Farley, 2014).

Social distance and self-other overlap are quite similar in that both can represent the degree of closeness in relationships between individuals and others. The closer the social distance, the more intimately individuals perceive their relationship with others; the farther the social distance, the more distantly individuals perceive their relationship (Sun et al., 2016). Similarly, the higher the self-other overlap between individuals and others, the more intimately individuals perceive their relationship; the lower the self-other overlap, the more distantly they perceive their relationship (Aron et al., 1991; Aron et al., 2013). Moreover, both social distance (Trope, Liberman, & Wakslak, 2007) and self-other overlap (Aron & Aron, 2009) influence individuals' attributions for events occurring to others. Individuals tend to use trait attributions to explain events happening to others with whom they have greater social distance, and situational attributions for events happening to others with whom they have closer social distance (Trope et al., 2007; Stephan, Liberman, & Trope, 2011). A similar phenomenon exists in self-other overlap, where individuals tend to use situational attributions to explain events happening to others with whom they have higher overlap, and trait attributions for events happening to others with whom they have lower overlap (Aron & Aron, 2009).

However, we argue that these two concepts should not be used interchangeably. First, social distance is a subordinate concept of psychological distance, alongside temporal distance, spatial distance, and probability distance (Yan, 2014). Existing research often equates the subordinate concept of social distance with the superordinate concept of psychological distance, and the relationships between self-other overlap and temporal, spatial, and probability distances remain unclear. Second, social distance and self-other overlap are measured differently. Although researchers define social distance from familiarity, intimacy, and similarity perspectives, most have used the IOS Scale (Garcia-Retamero & Galesic, 2012) to measure social distance. Self-other overlap research suggests that the IOS Scale (Myers & Hodges, 2011) only measures the perceived closeness dimension of self-other overlap. Finally, the operational definition of social distance remains unclear, often conflating social distance defined in terms of intimacy with that defined in terms of familiarity (Garcia-Retamero & Galesic, 2012). Self-other overlap research has found that perceived intimacy between self and other is an important factor influencing self-other overlap, while familiarity between self and other has no significant effect (Tan et al., 2015). Therefore, social distance and self-other overlap should not be confused.

3 Summary and Outlook

Based on a review of the conceptual development, measurement methods, structure, and common techniques for modifying self-other overlap, this article clarifies its essential characteristics by analyzing its relationship with relational self. We propose that self-other overlap is a relational self emphasizing similar representations between self and other, formed through individuals' motivation for self-expansion incorporating others' resources, viewpoints, and traits into the self, resulting in overlap between self-concepts. Although similar to the concept of social distance, the two should be distinguished in usage. Future research can draw on findings from neural mechanism studies of relational self to explore the neural mechanisms of self-other overlap, and it is also necessary to investigate the negative effects of excessive self-other overlap on intimate relationships.

3.1 Neural Mechanisms of Self-Other Overlap

No research to date has specifically examined the neural mechanisms of self-other overlap. Relational self emphasizes both differences between individuals' representations of self and other (Shaw, Czekóová, & Porubanová, 2016) and similarities between these representations (Aron et al., 2009). Self-other overlap represents the similar components between self-representation and other-representation in relational self, serving as a "bridge" connecting individuals with others. Therefore, we can indirectly understand the neural mechanisms of self-other overlap through those of relational self (Mitchell, Banaji, & Macrae, 2014; Liddell & Laura, 2016; Liddell et al., 2017).

Event-related potential (ERP) studies have found that when individuals process information about others with high intimacy, the N2 component representing familiarity and the P3 component related to emotion and motivation show larger amplitudes (Chen, Zhang, Zhong, Hu, & Li, 2013; Matsunaga, Yokosawa, & Abe, 2012). Participants prioritize processing information related to highly intimate others over general others (Barton, 2014). fMRI imaging studies have found that the medial prefrontal cortex (MPFC) plays an important role in processing self-related information in social cognition research on theory of mind, emotion recognition, social reasoning and decision-making, moral judgment and development, and self-cognition (Krienen, Tu, & Buckner, 2010). In trait adjective recognition tasks, MPFC activity shows no significant difference between self-reference and mother-reference conditions (Zhang et al., 2006). Harada, Li, and Chiao (2010) found that compared to stranger conditions, both self-reference and father-reference conditions in word judgment and memory tasks elicited reduced deactivation in the ventromedial prefrontal cortex (VMPFC). These studies suggest that neural mechanisms for processing information about highly intimate others share many similarities with those for processing self-related information (Zheng Yingcan, Hu Yuanyan, & Chen Hong, 2014). Since self-other overlap represents overlapping information representations between self and other (Aron et al., 1991), and research using self-other overlap to measure relationships has found that overlap between self and mother leads individu-

als to use similar processing mechanisms for mother-related information as for self-related information (Aron et al., 1991; Aron et al., 2004), we propose that future research should explore the functional mechanisms of MPFC in self-other overlap processing.

3.2 Negative Effects of Self-Other Overlap on Interpersonal Relationships

Existing research has primarily examined the positive effects of self-other overlap on relationships between individuals and others (Lumsden et al., 2014; Thai & Lockwood, 2015; Maister & Tsakiris, 2016), with few studies addressing the negative impacts of excessive self-other overlap. In romantic relationships, retaining some personal space benefits relationship development. Individuals who perceive themselves as too intimate with their partners report that their personal control and personal identity are threatened by their partners (Aron et al., 2004). When individuals perceive control or interference from partners, their self-concept, self-development, and self-expansion abilities may be adversely affected, causing uncomfortable emotional experiences. For instance, when one partner wants to spend quiet time at home while the other wants to attend concerts or movies together, someone must compromise or unpleasantness may occur. When a relationship develops too rapidly and the speed of self-expansion exceeds the self' s capacity, individuals may feel "unable to breathe," and this excessive intimacy may exhaust partners both mentally and physically. Moreover, increased self-other overlap may conversely hinder further perspective taking (Cheek, 2015). Successful perspective taking first requires individuals to distinguish self from other, enabling them to recognize that their own thoughts and feelings differ from others' (Molenberghs, Johnson, Henry, & Mattingley, 2016). Excessive self-other overlap confuses self and other, preventing correct differentiation and leading to failures in further perspective taking (Aron et al., 2004; Aron et al., 2013; Cheek, 2015). Therefore, future research should examine the negative effects of excessive self-other overlap.

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Note: Figure translations are in progress. See original paper for figures.