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Autism, Social Connectedness, and Minimal Social Acts

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Autism, social connectedness, and minimal social acts

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Abstract: Autism spectrum condition (henceforth ASC) is a complex psychopathological condition characterized by repetitive and restricted patterns of behaviors, as well as by impairments in social interaction and communication. This article focuses on the idea that ASC involves impairments in the capacity to connect with the feelings and actions of others. The metaphor of social connectedness might be considered somewhat uninformative, hardly specific of ASC, and ultimately compatible with a variety of competing approaches to social impairments in ASC. Nevertheless, here I develop an account of social connectedness which plays a distinctive and informative role in further understanding ASC. My strategy is to explore the role of social reciprocity in relation to the difficulties that persons with ASC have with social connectedness. Drawing on the work of Peter Hobson, I propose that such difficulties primarily involve experiences and actions that require the uptake or response from another subject for their fulfillment. I clarify and develop this idea by introducing the concept of minimal social act, inspired by the work of the phenomenologists Adolf Reinach and Dietrich von Hildebrand, and by discussing some 4E (i.e., embodied, enactive, embedded, and extended) approaches to ASC. On the current proposal, minimal social acts are pervasive and developmentally critical experiences that have built into their conditions of success a receptiveness or responsiveness from the subject to whom they are directed.

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1. Introduction

Autism spectrum condition (ASC) is a complex psycho- pathological condition characterized by repetitive and restricted patterns of behaviors, as well as by impairments in social interaction and communication. According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), a diagnostically relevant criterion of ASC is that these characteristic features appear from early childhood and significantly limit everyday functioning (American Psychiatric Association (APA), 2013, p. 50).[1] The idea that ASC involves characteristic social impairments has played a central role in research on this condition since some of the earliest descriptions of ASC as a diagnostic category (e.g., Kanner, 1943). My focus in this article is on the relatively neglected idea that ASC involves impairments in the capacity to connect with the feelings and actions of others (for representative articulations of this idea, see Hobson, 2002, pp. 49, 59; García-Perez, 2014; Peper, van der Wal, & Begeer, 2016). The metaphor of social connectedness might be considered somewhat uninformative, hardly specific of ASC,[2] and ultimately compatible with a variety of competing approaches to social impairments in ASC. Nevertheless, here I develop an account of social connectedness that plays a distinctive and informative role in further understanding ASC. My strategy is to explore the role of social reciprocity in relation to the difficulties that persons with ASC have connecting with the feelings and actions of other people.

Why choose reciprocity as a way of accessing the topic of social connectedness in ASC? As a matter of fact, the notion of reciprocity has played an important diagnostic role in ASC research. For example, DSM-5 states that

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[1] The DSM-5 definition of autism spectrum condition is a broad category, which includes categories such as ''early infantile autism, childhood autism, Kanner's autism, high-functioning autism, atypical autism, pervasive developmental disorder not otherwise specified, child- hood disintegrative disorder, and Asperger's disorder'' (APA, 2013, p. 53).

[2] As an illustration, consider the appearance of the cognate metaphor of ''disconnection'' in descriptions of the experience of depression: ''A shift in this sense of belonging is a salient and consistent theme in DQ [depression questionnaire]. It is almost always described as a kind of 'feeling,' often one of 'disconnection.' The person is cut off from the world and, most importantly, from habitual forms of interaction with other people'' (Ratcliffe, 2015, p. 31).

[d]eficits in social-emotional reciprocity (i.e., the ability to engage with others and share thoughts and feelings) are clearly evident in young children with the disorder, who may show little or no initiation of social interaction and no sharing of emotions, along with reduced or absent imitation of others' behavior. (APA, 2013, p. 53)

Although DSM-5 illustrates such deficits in various ways (p. 50), and the quoted description elucidates the notion of social-emotional reciprocity in terms of the notions of engagement, sharing, and interaction, these notions are left largely unexplored. For this reason, the assertion that DSM leaves the notion of reciprocity unclarified, in spite of emphasizing that poor reciprocity is a defining feature of ASC (Gernsbacher, 2006; van Ommeren, Begeer, Scheeren, & Koot, 2012, p. 1001), appears to be still valid.[3]

Importantly, the relevance of reciprocity for ASC is not restricted to current conceptualizations and diagnostic efforts of this condition. Seventy years before the publication of DSM-5, Leo Kanner published a seminal paper that suggests an important role for reciprocity in ASC. Consider the following description that Kanner (1943) gives of one of his cases:

Charles was brought to the clinic at the age of four and a half years, his mother complaining how ''the thing that upsets me most is that I can't reach my baby.'' As a baby, this child would lie in the crib, just staring. When he was one and a half years old, he began to spend hours spinning toys and the lids of bottles and jars. His mother remarked: ''He would pay no attention to me and show no recognition of me if I enter the room. The most impressive thing is his detachment and his inaccessibility. He walks as if he is in a shadow, lives in a world of his own where he cannot be reached. No sense of relationship to persons.'' (p. 236)

This vignette vividly illustrates features that have been taken to be at the core of ASC. Apart from indicating the infant's markedly restricted way of relating to both inanimate objects and people, the description captures a sense of unreachability experienced by Charles's mother when attempting to relate to her son. Thus, the vignette is not only an illustration of Charles's behavior but also of how Charles's mother apprehends her son's behavior. Leaving out her take on the situation, and in particular her distress at not being able to reach her baby, would be to miss out on something crucial in the description. One natural way to spell this out is by saying that Charles's unreachability is related to his

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[3] The just-mentioned authors refer to DSM-IV when making this observation.

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mother's attempts to approach him and establish connection and that this interpersonal contact is not reciprocated or responded to. This interpretation of Kanner's vignette resonates with other descriptions of individuals who attempt to establish contact with persons with ASC, and who report there being a ''glass wall,'' a ''chasm,'' and an ''abyss.'' It is sometimes said that it is as if the autistic individual is living in ''another world.'' As Bosch (1970) puts it, the

''glass wall,'' the impression of the autistic child's ''other world,'' springs to the observer's mind when he attempts to meet the child as a human partner and is struck by the lack of replies and the impossibility of making contact with the child. (p. 52)

Although many researchers would probably accept the cogency of these and similar descriptions of ASC, it might be taken for granted that this is as far as the notion of social reciprocity can be usefully employed in ASC research. To put it differently, it might be suggested that the notion of reciprocity has descriptive but no explanatory value in ASC research. In line with traditional approaches to social cognition (see Goldman, 2012), most approaches to ASC tend to take for granted what one might call ''unilateral explanations'' of impairments in social connectedness. The underlying assumption of this line of thinking is that if social connectedness is compromised in ASC, that must ultimately be a consequence of individual deficits in unilaterally grasping or registering the meaning of certain social stimuli. Those individualistic deficits are, then, taken to be explanatory of deficits in social reciprocity and connectedness. Paradigmatically, unilateral explanations of social cognition presuppose that the minimal units of social cognition and interpersonal understanding are asymmetrical relations between two subjects, in virtue of which one of them (an attributor) attributes a psychological property to the other (the target of the attribution) (Premack & Woodruff, 1978). Moreover, adopting this view might make it appear natural to assume that reciprocal forms of interpersonal understanding amount to combinations of those basic units. On such a view, reciprocal social cognition gets off the ground when the unilateral directedness of one subject to the other is supplemented by the equally unilateral directedness of the second subject to the first one.

Although this picture of how we understand and relate to other people has been widely influential in social cognition and psychopathological research, a number of 4E (i.e., embodied, enactive, embedded, and extended) approaches to social cognition have put pressure on some potentially

problematic assumptions on which that picture appears to be based. In the context of ASC research, Peter Hobson's (1993, 2002) work has consistently emphasized the role of interpersonal relations for understanding ASC and socio-cognitive development. Moreover, some recent investigations of ASC have framed social impairments in ASC primarily as deficits of social interaction rather than social observation (Bolis, Balsters, Wenderoth, Becchio, & Schilbach, 2017; Schilbach, 2016). In a similar vein, some enactivist approaches have suggested that ASC involves peculiar forms of participatory sense-making, in which interactional timing and coordination tend to be compromised (De Jaegher, 2013).

The central aim of this article is to develop the idea that ASC impairments in social connectedness are better accounted for non-unilaterally, as impairments in experiences and actions that require the uptake or response of another subject for their success. I clarify and develop this idea by introducing the concept of minimal social act, inspired by the work of the phenomenologists Adolf Reinach (1989) and Dietrich von Hildebrand (1975), as well as by discussing some 4E approaches to ASC. On the characterization that I will provide, minimal social acts are experiences and actions that have built into their conditions of success a receptiveness or responsiveness from the subject to whom they are directed. They are, in this sense, importantly different from unilateral acts of social cognition that grasp or register the meaning of social stimuli independently of a response from the subject to whom they are directed. In a nutshell, on the current proposal, ASC impairments in social connectedness are better conceptualized as being primarily about deficits in issuing or responding to minimal social acts.

The article is structured as follows: In Section 2, I briefly present and discuss some models for understanding ASC, with a particular focus on the social dimension of this condition. In Section 3, I elaborate on the so-called ''intersubjectivity'' approach (Fuchs, 2015; Gallagher, 2013; Hobson, 1993, 2011; Hobson & Hobson, 2011) and I mention one challenge to this approach, to which the concept of reciprocity might provide a promising answer. In Section 4, drawing on the work of Reinach and von Hildebrand, I introduce the concept of minimal social act. Section 5 discusses the applicability of that concept to ASC research, and Section 6 concludes by summing up the overall line of argument.

2. Some approaches to social connectedness in ASC

In the last few decades, a number of theories have been developed to tackle the complexities of ASC. Some of these theories focus on specific aspects of ASC, whereas others aim at offering more integrative approaches (Bolis et al., 2017; De Jaegher, 2013). Among the theories that focus on specific deficits, three influential approaches are the weak central coherence approach, the executive function approach, and the ''mindblindness'' approach. In this section, I will briefly introduce and discuss these three approaches.

According to the weak central coherence approach, individuals with ASC have serious difficulties with central coherence and the integration of information (Frith & Happé, 1994). This is manifested in the tendency to attend to details rather than wholes, which, although limiting social behavior, can also be positively correlated with the development of specific skills, for example in drawing and calculation (the so-called savant skills). It has been noted that in ASC problems with seeing things in their context arise with respect to both social and nonsocial stimuli. However, the weak central coherence theory can accommodate the idea that there is a specific problem with the salience of social stimuli, by appealing to the observation that persons with ASC seem to show no preference for the latter. As an illustration of this, a waving gesture may be seen by individuals with ASC as a decontextualized movement and is sometimes also imitated in a mechanical fashion. In addition, eye-tracking studies have shown that persons with ASC observing a social interaction tend to focus on irrelevant parts of the inanimate environment, or of a human face, that is, on irrelevant details of a social situation. For example, individuals might focus on a light switch, instead of the surprised or frightened faces of two persons in a scene (Fuchs, 2015; Klin, Jones, Schultz, & Volkmar, 2003, p. 197).

A second theoretical approach has suggested that ASC involves impairments in executive function. Executive function includes processes of suppressing responses or ignoring irrelevant information (inhibition), keeping and manipulating information online (working memory), changing strategies (cognitive flexibility), and planning ahead (Geurts, de Vries, & van den Bergh, 2014). This theoretical approach is particularly well-suited to investigating the patterns of repetitive behavior often exhibited by persons with ASC, although it remains contentious to what extent deficits in executive function would be specific to ASC (Hill, 2004). At any rate, this approach can accommodate the idea that some social deficits in ASC are grounded in problems with executive function, insofar as a variety of aspects of social interaction require working memory for efficiently storing information about

others, and also cognitive flexibility, which is important in dealing with the unpredictability of many everyday unstructured social situations.

A third approach to ASC, more focused on its social dimension than the previous approaches, is the ''mindblindness'' approach (Baron-Cohen, 1995; Baron- Cohen, Leslie, & Frith, 1985). The core idea of this approach is that social impairments in ASC are grounded in the lack or the disruption of a Theory of Mind (hereafter ToM), understood as a body of folk- psychological knowledge on the basis of which an individual can infer that another person is undergoing a mental state (Baron-Cohen, 1995; Carruthers, 1996; Gopnik & Wellman, 1995). Proponents of the mindblindness approach have argued that children with ASC have an impairment in the ToM mechanisms responsible for mindreading and are, as a consequence, largely blind to psychological phenomena. At the same time, defenders of the mindblindness hypothesis agree that there might be variability in the severity of the impairment, as well as in the types of mental states that individuals with ASC would be unable to attribute. Traditionally, evidence for the mindblindness approach was found in difficulties passing the false-belief task (Baron-Cohen et al., 1985), which used to be taken as the critical indication of the possession of a ToM.

However, a number of researchers have pointed out that failure of the standard false-belief task can hardly be taken as indicative of the disturbances of intersubjectivity in ASC. In the first place, results indicate that some individuals with ASC pass the traditional false-belief task (Currie, 1998, p. 39; Ozonoff, Pennington, & Rogers, 1991). Second, there are other pathological conditions, like Down syndrome, in which individuals do not pass the task but nonetheless do not have ASC, and are largely competent in understanding others (Zahavi & Parnas, 2003, p. 68). Within the mindblindness approach, some researchers have proposed that the ToM is acquired at some point in life after a process of revisions of partial theories that do not amount to a fully representational theory of mind, while others claim that the ToM is an innate module activated in early childhood, at around 4 years of age. That, however, does not fit well with documented disturbances in earlier social engagements in the first two years of life in children later diagnosed with ASC; these include lack of social responsiveness, lack of joint attention, limited imitation, and a general lack of interest in the social domain (Hobson, 1993, 2002). Overall, the presence of these early symptoms of ASC puts pressure on the idea that intersubjective disturbances in ASC could be explained by not having acquired a ToM at a later stage, or by the fact that such a theory would not be activated yet.

Partly due to such limitations of traditional ToM explanations of ASC symptoms, alternative proposals have been developed. Some of these proposals locate problems of social connectedness in ASC in more basic sensory-motor processes, which would have an impact on primary and secondary intersubjectivity (Trevarthen, 1979, 1998; Trevarthen & Hubley, 1978).[4] Since developments in the methodology employed in false-belief tasks have raised the question of whether a ToM can be present before 4 years of age, one might wonder whether the timetable for the acquisition or activation of a ToM should not simply be modified accordingly. Even so, recent versions of ToM tasks in ASC research tend to focus on the alleged absence of false-belief attribution in individuals with ASC (Senju, 2012). It is not clear, though, how this approach could shed light on impairments in early sensory-motor processes. Consequently, rather than making the requirements for possession of a ToM less demanding, a more fundamental question that has to be raised is whether it is necessary and plausible in the first place to postulate a ToM to understand ASC impairments in social connectedness.[5]

3. The intersubjectivity approach

As an alternative to the idea that social impairments in ASC are traceable to a faulty inferential mechanism, a number of authors have argued that such impairments are rooted in disturbances of the early intersubjective engagements of primary and secondary intersubjectivity (Gallagher, 2004). More

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[4] Primary and secondary intersubjectivity are concepts introduced by Trevarthen and colleagues for referring to the early-developing intersubjective competences of newborns and young infants. Primary intersubjectivity covers the distinctive sensitivity that infants have to the minded- ness of others, and the natural responsiveness to them that signals an awareness of the differentiation between self and other, as well as patterns of connectedness between them (Trevarthen & Aitken, 2001, p. 6). From around 2 to 3 months of age, infants engage in mutual exchanges of gazes and smiles with caregivers. It has been shown that such exchanges or ''proto-conversations'' (Bateson, 1979) are cross-cultural and have a structured character, involving turn-taking and specific timing (Trevarthen, 1998, p. 23). Secondary intersubjectivity refers to triadic social interactions (including social referencing and triadic joint attention) that appear around 1 year of age, in which external objects and the context of interaction come into the picture (see Zahavi & Rochat, 2015).

[5] Another approach to ASC that focuses on its social dimension, and which I have not touched upon in this section, is the social motivation theory. According to it, diminished social interest leads to social impairments and problems with social cognition (Chevallier, Kohls, Troiani, Brodkin, & Schultz, 2012). I take the social motivation theory to be largely compatible with the intersubjectivity approach that I describe in the next section.

specifically, it has been suggested that there are a number of sensory-motor problems usually present around 4 to 6 months of age (Gallagher, 2013, p. 263; Gallagher & Varga, 2015; Teitelbaum, Teitelbaum, Nye, Fryman, & Maurer, 1998), and that problems in primary intersubjectivity would compromise the development of secondary intersubjectivity, including triadic joint attention.

Amongst the authors who have defended this approach, Peter Hobson stands out as one of its main proponents. He has argued that ''the essence of autism is severe disturbance in intersubjective personal engagement with others'' (Hobson, 1993, p. 194) and that ''abnormalities in the intersubjective domain would constitute an irreducible bedrock in the explanation of autism'' (p. 13). However, since some individuals with serious sensory-motor problems at the level of primary intersubjectivity may not display ASC symptoms (Crown, Feldstein, Jasnow, Beebe, & Jaffe, 1992), one challenge that remains open for the intersubjectivity approach is how to explain the distinctiveness of social impairments in ASC. In this context, the idea that individuals with ASC have marked difficulties ''connecting'' and ''engaging'' with the feelings and actions of others becomes particularly relevant (Hobson, 2002, p. 49). But what is it to connect with someone else's feelings and actions?

Consider social phenomena such as imitation, social referencing, joint attention, emotional contagion, observing someone in spatial proximity, and observing someone on television. Since one might say that all these phenomena exemplify social connectedness in one way or another, it might be said that the notion of social connection is hopelessly vague. I think, however, that this would be a premature assessment. Hobson's own proposal is that social connectedness is based on what he calls ''identifying with.'' The capacity to ''identify with'' another person's attitudes involves ''the potential to assimilate the stance of someone else so that it becomes a potential stance for oneself'' (Hobson, 2018, p. 557). On Hobson's account, identification does not refer primarily to imitation or alignment, but rather to a form of assimilation of the other's perspective, which is still registered as another's. As Hobson and Hobson put it,

one individual is motivated both to engage with others and to alter in motivation toward the world related to by the other. Through others, and in virtue of identification, a person is ''moved'' in orientation—a motivational and emotional as well as cognitive process. (Hobson & Hobson, 2011, p. 130)

Building on Hobson's distinctive emphasis on the role of interpersonal relations and connectedness for an understanding of ASC, the question that I would like to raise is whether connectedness should be read primarily as reciprocal connectedness (and what that might mean) or as connectedness that is ultimately enabled by social observation, that is, by a kind of social understanding that could happen in principle through a one-way mirror. This question might appear somewhat odd, given the intuitive contrast between, on one hand, a situation of mutual engagement between a young infant and a caregiver or, say, two persons facing each other and having a conversation, and, on the other hand, a situation in which someone understands something about another person by observing them through a one-way mirror. It is, however, a question worth raising and pursuing in light of the widespread endorsement of what I have called earlier unilateral explanations of impairments in social connectedness.

The topic of social connectedness can be further scrutinized by considering Hobson's reference to the I- thou relation. There are a number of indications in Hobson's work that point to the idea that the I-thou relation has a special role for investigating ASC. Making reference to Martin Buber's (2010) distinction between I-thou and I-it as two fundamentally different ways of engaging with the world, Hobson (1993) suggests that there are two relatively independent lines of ontogenetic development: I-it and I-thou engagements, and that children with ASC ''do appear to have specific problems with I-Thou relatedness'' (p. 7). The key question is, of course, what this means. What is specific about an I-thou relation vis-a` -vis an I-it relation? Is it that in an I-thou relation one subject singles out another subject in virtue of the capacity to grasp a special kind of (social) stimuli (Hobson, 2008, p. 382) but independently of reciprocation? Or is the proposal that reciprocity and mutual interdependence play an essential role in I-thou relations, such that one cannot be unilaterally related to a thou?[6] In *The Cradle of Thought*, Hobson writes that ''to be emotionally connected with someone is to experience the someone else as a person. Such connectedness is what enables a baby, or indeed an older child or an adult, to differentiate people from things.'' He goes on to exemplify this idea with a poem by William

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[6] Hobson reads Buber's distinction between the I-it relation and the I-thou relation as a distinction between the relations that the infant establishes to the nonsocial (it) and to the social world (thou). Moreover, he suggests that Buber' distinction is roughly equivalent to Neisser's distinction between the ecological self and the interpersonal self (Hobson, 1990, p. 177; see Neisser, 1988). According to Buber (2010), a critical feature of the I-thou relation is its bilateral or reciprocal character, although it is worth noting that Buber does not restrict the scope of the ''thou'' to the realm of other people (p. 8).

Blake, noting that ''Blake insists that we cannot watch someone else's feelings and fail to react with feelings ourselves'' (Hobson, 2002, p. 60). However, on one reading of this passage, connectedness does not appear to require any reciprocal interaction between subjects. Just on the basis of seeing someone through a one-way mirror, and by reacting to that person's feelings, one would be connecting with them.

Consider the following occurrences of the notion of reciprocity in Hobson's (2002) work. Commenting on the early exchanges of primary intersubjectivity, he writes that ''both participants in the exchange modify their actions in accord with the feedback they receive from their partner—and so the interchange is genuinely reciprocal'' (p. 36). Moreover, commenting on the infant's participation in games around the end of the first year, such as rolling a ball back and forth, Hobson (2002) writes that the infant ''has become able to switch roles from being the receiver to being the giver. The exchange has become reciprocal'' (p. 74). In a similar vein, he writes as follows: ''interactions are reciprocal: what the mother does in relation to the baby, the baby can do in relation to the mother'' (Hobson, 2002, p. 93).

Is there a common denominator between these examples of reciprocal interactions? One possibility would be to say that for a dyadic exchange to be reciprocal, one subject's actions must be modified in accordance with the feedback received from another. However, such general modulation and mutual influence does not capture the specificity of the social interactions of primary intersubjectivity. In the first place, two subjects might each unconsciously modify their actions in accordance with feedback received from the other, as research on alignment and low-level coordination suggests (Gallotti, Fairhurst, & Frith, 2017). One might, then, say that for a social exchange to be reciprocal, what is needed is that one subject consciously modifies their actions in accordance with feedback received from the other subject. But does this proposal really work? Consider the following situation: two professional spies have the mission of gathering information about each other's movements at a party they are both attending. They each succeed in their mission by closely and secretly following one another. At the slightest suspicion that the other might realize that he is being followed, they each pretend to be merely attending the party. Arguably, in such a situation, the two spies are consciously modifying their actions in accordance with feedback that they receive from the other. But it is fairly obvious that they are not partners of a social exchange in the same sense in which two subjects engaged in a (proto-)conversation are.

If neither unconscious nor conscious mutual influence is sufficient for making a social interaction reciprocal, how should the relevant notion of reciprocity be understood? Surprisingly, this question has received little attention in both literature on ASC and on social cognition. The proposal that I will here put forward is that the critical element underlying paradigmatic reciprocal social exchanges is that self and other are consciously engaged in a reversible relation, in which one subject takes the role of the other. Such reversibility between self and other captures a common denominator in the examples of reciprocity mentioned by Hobson. Self–other reversibility is present in the dyadic and proto-communicative exchanges of primary intersubjectivity, which involve relations of addressing and being addressed in turn by the other. Reversibility is also present in the alternation between being a giver and a receiver in structured games. Giving a central role to self-other reversibility allows us to clarify Hobson's reference to the I-thou relation in the following way: sensitivity to I-thou relations does not point to the capacity to categorize different types of stimuli (social and nonsocial), as much as it points to the idea that self and other can participate in reversible relations, whereby to be related to another is at the same time to be aware of oneself as the other's other. Arguably, this is a distinctive mark of a second- personal or I-thou relation: to be related to someone as a you is at the same time to be a you for the other (Zahavi, 2015, p. 93; León 2018).

Let us return to ASC. Perhaps one of the clearest illustrations of the role of reversibility in ASC comes from the phenomenon of pronoun reversal, also discussed by Hobson. Since Kanner's early description of ASC, it has been noted that some children with ASC call themselves ''you'' and the person addressed ''I.'' More recently, among the restricted patterns of behavior associated with ASC, DSM-5 (APA, 2013, p. 54) mentions ''use of 'you' when referring to self.'' This phenomenon was initially explained by Kanner by reference to disturbances in the ability to form sentences spontaneously and by a tendency to echolalia, that is, a tendency to repeat words as heard (Bosch, 1970, p. 61). Later, however, another interpretation gained force, according to which this abnormal use of pronouns is not merely a deficit in the speech apparatus but is instead a meaningful linguistic expression that conveys something of how the child experiences relationships to the social world. From this perspective, difficulties with pronoun reversal in ASC indicate a more fundamental difficulty in identifying with other-centered subjective perspectives. As Hobson (2002) argues, what is essential to having a grasp of the use of the ''I'' and ''you'' pronouns is their reversibility, and the fact that a grasp of the use of these pronouns involves understanding reciprocal roles between speaker and hearer:

[i]n order to understand ''I'' and ''you,'' a child needs to have grasped how there are reciprocal roles in speech. It is the person who is speaking who anchors the meaning of the word ''I,'' and ''you'' refers to the person being addressed, whoever the individual may be at any moment. Speakers and listeners can exchange roles, so there are shifts in whom ''I'' and ''you'' refer to. The critical thing to appreciate is that the person who utters the word ''I'' is anchoring the meaning in that person's I-ness. (p. 118)

The proposal I shall explore in more detail in the rest of the article is that understanding reciprocity as reversibility allows us to capture something central about this notion, and that this approach can enrich current ASC research. Two comments are in order here. First, as hinted at above, the notion of reversibility that I will focus on is best exemplified by the dyadic exchanges of primary intersubjectivity. This is compatible with granting self-other reversibility a wider scope of application. Consider, for example, the notion of reciprocity as the exchange of favors or benefits between the same two individuals over repeated social interactions (Warneken & Tomasello, 2013). Along these lines, reciprocity can be understood as a bidirectional exchange that agents engage in for their mutual benefit. This understanding of reciprocity is linked to the ''norm of reciprocity,'' conceptualized in social psychology literature as ''the act of giving benefits to another in return for benefits received'' (Molm, Schaefer, & Collett, 2007). This richer notion of reciprocity will not be my focus in what follows.

Second, and more importantly for the purposes of this article, the capacity to take part in reversible relations should be analyzed in more detail, particularly with respect to its enabling conditions. My proposal here is that the capacity to participate in reversible self- other relations is enabled by the capacity to respond to someone. For subjects who are present to each other in face-to-face situations, alternation and reversal of roles are possible because they are able to respond to each other's addressive engagements, actions, and embodied feelings. Be it in addressing-being addressed, or giving- taking, the involved subjects have to be able to respond to one another. Concededly, the type of response may determine very different ways in which a social interaction can unfold. But what is critical is that there is a response. This proposal is consistent with Hobson's (1993) suggestion that perception of social stimuli is itself dependent on a capacity to respond to them: ''to perceive emotional expressions may entail at least the potential for appropriate forms of emotional responsiveness, and a

profound impairment in responsiveness may amount to a profound impairment in the very perception of 'emotion''' (p. 63).

Now, if reversible self-other relations are enabled by the capacity to respond to someone, how should deficits in responsiveness be understood? One cannot respond to someone unless one understands that the other person's actions or emotions are directed to oneself. But are deficits in responsiveness grounded in difficulties with unilaterally grasping the psychological meaning of social stimuli? Or should deficits in responsiveness be distinguished from unilateral deficits in understanding social stimuli? It is sometimes suggested that social interaction and engagement are grounded in unilateral capacities (Overgaard & Krueger, 2013). I suggest that this view is not convincing and that, in the context of ASC research, a closer look at the notion of responsiveness is critical to understand impairments in social connectedness.[7] In the next section, drawing on the work of some early phenomenologists, I will develop this idea by introducing the concept of a minimal social act, that is, the concept of an act that requires for its success the uptake or response of another subject.

Before concluding this section, I would like to consider how the proposal that responsiveness is critical to understand social connectedness in ASC stands with respect to other approaches that are congenial to the line of thought developed in this article. An emphasis on responsiveness resonates with the pressure that recent 4E approaches to social cognition have put on unilateral explanations of social cognition. In different ways, these approaches have taken distance from the traditional view of cognition as an individual's passive retrieval and processing of information about its material and sociocultural surroundings. In the domain of social cognition, some authors have proposed that social interaction has not only an enabling role for social cognition, but also occasionally a constitutive role (De Jaegher & Di Paolo, 2007; De Jaegher, Di Paolo, & Gallagher, 2010). In the context of ASC research, Bolis et al. (2017) have recently put forward the ''dialectical misattunement hypothesis,'' based on the idea that ''for gaining a complete understanding of conditions such as ASC, a shift in focus from the individual brain to the interaction between people is essential'' (p. 366). In a similar vein, De Jaegher has highlighted the importance of taking seriously ''the interaction process as such''

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[7] A complementary line of inquiry, that I cannot pursue within the limits of this article, would be to revisit the concepts of primary and secondary intersubjectivity (see Note 4 above) on the basis of a more detailed articulation of the notion of responsiveness.

and the autonomy of interactive processes for an understanding of ASC. De Jaegher (2013) has suggested in particular that problems with social interactions in ASC are grounded in difficulties with interactional timing, coordination, and ''rhythmic capacities'' (p. 12). As an illustration of this, she cites empirical work showing that children with ASC have a limited tendency to unconsciously rock in symmetrical timing with their parents.

However, one question that remains open for De Jaegher's and other enactivist approaches is whether a too strong emphasis on coordination might after all obscure the role of reciprocity in ASC. The worry can be put as follows: is low-level (or unconscious) coordination and rhythmicity the key to understand social connectedness in ASC? Although these aspects might be compromised in ASC, the emerging view of social connectedness in ASC seems somewhat impoverished. After all, as De Jaegher (2013) also notes, ''experientially, engagement is the fluctuating feelings of connectedness with an other, including that of being in the flow of an interaction'' (p. 6). But can experienced engagements be understood on the basis of patterns of low-level coordination? I suggest that the paradigm of social connectedness should not be unconscious synchronization in rocking chairs but rather the capacity to respond to other persons in interpersonal engagements. In short, my proposal is that the quality of being directed to others, and more specifically to a responsive other, is an important part of the idea of connecting with another person, and that this goes over and above processes of low-level coordination.

4. Social acts, manifested position-takings, and minimal social acts

My claim, in this section, is that social responsiveness in face-to-face social interactions involves actions and psychological states that have an interpersonal structure, in the sense that they require uptake by another subject. What are examples of such states and actions? These include the actions of calling and addressing someone, sharing a smile with someone, giving something to someone, and affective experiences of directing a loving or friendly gaze to someone. Now, the idea is certainly not that there are not relevant differences between these phenomena, but rather that they have a common denominator: they require a complementary and, more generally, a responsive stance from another subject. Crucially, a responsive stance is not simply a unidirectional stance elicited by another unidirectional stance. Consider, again, the example introduced above of the two spies closely tracking each other's movements. Each of them is unilaterally directed to the other, and although their

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respective unilateral stances might be reciprocally elicited, they are not responding to one another in the same way in which one subject addressed by another responds to its addressor. What, then, is a responsive stance? I think that we can find at least the beginning of an answer to this question in Dietrich von Hildebrand's (1975) articulation of the concept of a ''manifested position-taking [*verlaubarte Stellungnahme*]'' (p. 22).

Von Hildebrand takes impetus from Adolf Reinach's (1989) theory of social acts, which I will here introduce in very broad strokes.[8] In §3 of *The Apriori Foundations of Civil Law*, Reinach delimitates a class of acts, which he calls ''spontaneous acts'' (examples of which are deciding, choosing, forgiving, praising, affirming, asking, and commanding), in which a subject actively carries out a certain psychological occurrence (for example, by actively taking a resolution). He distinguishes them from acts in which a subject is passive (such as being taken over by a scent or pain), but also from acts in which there is no passivity proper, such as being cheerful or sad, or being astonished or disgusted, or just carrying a desire or resolution. Reinach is careful to distinguish spontaneity from a general notion of activity. For example, having a resolution might involve the active involvement of the subject, but it differs from the active and proper taking of a resolution. Moreover, he goes on to distinguish within the sphere of spontaneous acts between those that are internal, in the sense of not essentially requiring a manifestation, such as deciding to do something, from those acts for which such a manifestation is essential, such as performing a command or a request (Reinach, 1989, p. 158-159).

A further distinction within spontaneous acts is introduced by considering the case of a command, which requires the involvement of a second subject, apart from the subject who makes the command. In such a case, Reinach notes, apart from the subject who performs the act, the act also requires a relation to another subject, a subject referred to by the act (1989, p. 159). Now, while there are spontaneous acts in which the performing and the subject-related-to coincide (such as in self-esteem, self-hate, or self-love), Reinach notes that there are spontaneous acts in which the relation to a foreign subject is essential. These are for Reinach (1989) ''hetero-directed experiences'' (*fremdpersonale Erlebnisse*) (p. 159). Comparing the act of commanding with the act of forgiving, Reinach goes on to distinguish between those acts which not only require the relation to another

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[8] See Mulligan (1987) and DuBois and Smith (2018). On Reinach and von Hildebrand, see Salice (2016a, 2016b). Translations of passages by Reinach and von HIldebrand are my own.

subject, but also the directedness and address to the latter. To illustrate: while an act of forgiving someone can happen without any manifestation to the forgiven person, a command "makes itself manifest in its directedness to the other, it enters into the other, it essentially has the tendency of being taken up [*vernommen*] by the other" (Reinach, 1989, p. 159). As such, a command is essentially characterized by the "need of uptake" by the subject to whom it is directed. Having these distinctions in place, Reinach defines "social acts" as those acts that are spontaneous and in need of uptake (*vernehmungsbedürftig*). Importantly, as shown by the example of forgiving someone, not all hetero-directed acts are in need of uptake, that is, not all hetero-directed acts are social acts. Conversely, not all social acts are hetero-directed: a legal enactment (*Bestimmung*) needs uptake, but it is not directed to a specific other that would have to fulfill this function (Mulligan, 1987). For Reinach, the need of uptake is the guiding and essential feature that characterizes social acts.[9]

In the second chapter of his book *Metaphysics of Community*, von Hildebrand retains Reinach's idea that there are acts essentially characterized by a need of uptake, but develops this idea in a specific direction. He does so in the context of his introduction of a class of acts which I will translate as "manifested position-takings" [*verlautbarte Stellungnahmen*], of which he recognizes the fundamental significance (von Hildebrand, 10 1975, p. 24).[10] To start with, a situation when a subject consciously takes up a mental state directed to him by another subject is described by von Hildebrand as a case of "real contact," to be distinguished from a case where such uptake does not occur (1975, p. 22). Only by analogy, he notes, can situations of "real contact" be compared with the contact with physical objects. Von Hildebrand reserves the term "real" for the contact between persons, and he distinguishes between "real contact" and "intentionäre" contact, the latter being the kind of contact happening when a subject is directed to someone in a non-manifested or internal manner (e.g., loving someone in silence). In the latter case, there is a directedness to someone, but, as he puts it, "we don't really [*realiter]* cross the 'interpersonal space,' we don't make real psychological contact with the other" (von Hildebrand, 1975, p. 21).

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[9] The similarities between Reinach's concept of social act and the speech act theory developed by Austin and Searle have been noted and explored in the literature (e.g., Mulligan, 1987).

[10] For an early treatment of this aspect of von Hildebrand's proposal, see Theunissen (1977, pp. 395- 398). For a recent discussion, see Salice (2016a, 2016b).

Von Hildebrand locates manifested position-takings in the context of what he calls ''I-thou contact.'' As we have seen, social acts, according to Reinach, demand uptake by a subject, but this need not be a specific subject. In contrast, according to von Hildebrand, a manifested position-taking is directed to a specific other and aims to being taken up by the latter. To this extent, one might describe the other as a you, marked by the uniqueness of being the addressee of the position-taking. I take this to be a distinctive feature of von Hildebrand's notion of manifested position-takings, which although retaining the importance of the uptake requirement by another subject, points to a phenomenon that concerns actual relations between two sub- jects. Von Hildebrand expresses this point by writing that ''the love, the hate, the admiration want to be felt by the person, to whom they are directed [*wollen demjenigen sich fühlbar machen, dem sie gelten*]'' (his paradigmatic examples of manifested position-takings are affective experiences). At the same time, a manifested position-taking has a more elementary structure than social acts *à la* Reinach (von Hildebrand, 1975, p. 27). In a nutshell, the central idea is that it is part of the intentional aim and structure of manifested position-takings to be consciously apprehended or taken up by the person to whom they are actually directed.

Up to this point, manifested position-taking could be interpreted as being based on more basic psychological phenomena. However, part of the originality of von Hildebrand's analysis lies in the suggestion that manifested position-takings are *sui generis*, in the sense of constituting a type of psychological phenomena that are not reducible to more basic building-blocks. Leaving aside the difference between manifested position-takings and silent position-takings, he also argues that a manifested position-taking is not reducible to a combination of a silent position-taking plus the act of communicating it. His point here is that whereas the object of a manifested position-taking is another person to whom the position-taking is directed and addressed, the object of a communicative, and more broadly a social act, is a state of affairs ''that such and such'' (von Hildebrand, 1975, p. 25).

Furthermore, a manifested position-taking is not a position-taking supplemented by a manifestation of it, because the very realization of the position-taking involves its manifestation to the addressee.[11] To put it differently, to take a position toward someone in von Hildebrand's sense is not a psychological occurrence to be distinguished from manifesting that position to that person. It is for this

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[11] This is why I opt for the translation ''manifested position-taking.'' In the present context, manifestation requires a second-personal dative of manifestation, someone to whom the position-taking is consciously manifested.

reason that, according to him, a manifested position-taking should be recognized as an ''organic whole'' (von Hildebrand, 1975, p. 25).[12]

What about the expressive character of manifested position-takings? Could not a manifested position-taking be understood as the combination of a position-taking and its expression? Von Hildebrand (1975) responds in the negative, arguing that the tendency toward expression is common to all affective experiences, but that only manifested position-takings have an expressive character directed and addressed to another subject (p. 27). In delimiting the notion of manifested position-taking from social acts and expressive phenomena, von Hildebrand highlights their peculiar intentional structure of being at the same time directed and addressed to another subject.

Although von Hildebrand distinguishes between different levels of responsiveness, the point that I would like to highlight is that, whatever response it might be, a manifested position-taking demands a response as part of its intentional structure. Therefore, one can say that manifested position-takings are experiences that have built into their conditions of success a receptiveness or responsiveness from the subject to whom they are directed. They are characterized by an addressive intentionality, that reaches completion or fulfillment in the response from the subject to whom it is directed. Since manifested position-takings require the actual presence of their addressee, one might consider that they have to be founded on the *Leibhaftigkeit* or sense of presence that characterizes perceptual experience (the giveness of the perceptual object ''in the flesh''). However, I do not think it is necessary to endorse a two-step model, according to which the uptake requirement is a mere supplementation of a perceptual experience that, considered by itself, would be neutral with respect to that requirement. This is in line with von Hidebrand's (1975) suggestion that in a manifested position-taking the elements of directedness to the other and ''real contact'' are ''tightly fused [*eng verschmolzen*]'' (p. 24).

There is certainly much more in the work of Reinach and von Hildebrand than their respective theories of social acts and of manifested position-takings. For my purposes, the notion of manifested position-taking is helpful to motivate the idea that there can be operations of the mind that are intrinsically social in the sense of requiring uptake by another subject, while having a fairly undemanding structure. That the subject taking up a manifested position-taking is not any subject

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[12] I take this aspect of von Hildebrand's proposal to downplay the relevance of asking about the ''externalization'' of a manifested position-taking (Salice, 2016b, p. 242), since the latter appears to be as such externalized.

whatsoever, but rather a ''you'' that is in a position to reciprocate is implicit in von Hildebrand's placement of the theory of manifested position-taking in the context of his investigation on the I-thou contact. The idea that there are psychological phenomena that are intrinsically social in the sense of requiring uptake by another subject gives some flesh to the idea of social responsiveness and how it might enable subjects to enter into reversible relations. In fact, I suggest that the notion of manifested position-taking can be generalized in terms of the following requirements: (1) there is an addressor and an addressee present to each other; (2) the addressor–addressee relation is an I-thou relation, in virtue of which the awarenesses that they have of each other as a you are mutually interdependent; and (3) the addressor's experience has built into its condition of success that it is taken up or responded to by the addressee. I will call experiences and actions that fulfill these conditions minimal social acts.

A further question that I cannot go into within the scope of this article is how to deal with cases in which the uptake requirement is not, or only partially, met. Consider a situation in which your manifested position- taking of love is directed to your partner. Your love is manifested in a loving glance toward her or him. But what if your partner is, for some reason, unaware of your loving glance? Should we say that the uptake requirement of the manifested position-taking is not satisfied, but that the latter nonetheless occurred? Or should we rather say that it was an attempt to perform a manifested position-taking, but that it is not manifested in the first place to the subject to whom it is addressed? Or consider the situation where you look at someone in order to initiate linguistic communication. The idea that your address demands uptake by the other can be interpreted at least in two ways. One is that your very act of addressing is accomplished whether or not the other takes it up and responds to it. On a different interpretation, your act of addressing is not accomplished without the uptake by the subject to whom you are directed. If the manifested position-taking can occur independently of whether it is actually taken up by the subject to whom it is directed, the role of the addressee is considerably less critical than initially thought. That the minimal social act is taken up might make a difference, in terms of the subsequent interaction between the two subjects, but the actual uptake would not enter into the individuation of the minimal social act.

There are several issues here that would be worth pursuing in more detail. Although I will not elaborate on this point here, I think that an externalist interpretation of the uptake requirement, according to which the uptake requirement of a minimal social act enters into the individuation of it, is more attractive. On this view, the uptake requirement is not merely a condition of satisfaction of an act

that, independently of the latter's satisfaction, would be the state it is. The uptake by another subject is rather one of the factors that would individuate the minimal social act in the first place as the kind of act it is. When your loving gaze does not reach out to your partner you might be gazing lovingly at him or her, but you are not performing a minimal social act, since the later requires the actual involvement (response) of your addressee. On this interpretation of it, the minimal social act reaches completion in the uptake by the subject to whom it is addressed.

5. Minimal social acts and impaired social connectedness in ASC

I have suggested in the previous section that von Hildebrand's concept of manifested position-taking can be generalized under the label of minimal social acts, broadly understood as experiences and actions that have built into their conditions of success a receptiveness or responsiveness from the subject to whom they are directed. Although this proposal would have to be fleshed out in much more detail, the aim of this section is to explore, the applicability of this approach to the investigation of social connectedness in ASC.

In the first place, the notion of minimal social act is a theoretical tool that can be used to capture a variety of characteristic symptoms of ASC which would seem to be otherwise unrelated, such as difficulties in making postural adjustments for being picked up (Reddy, Markova, & Wallot, 2013), difficulties with detecting and responding to social gaze (Dindar, Korkiakangas, Laitila, & Kärnä, 2017; Pellicano & Macrae, 2009), and problems with engaging others and responding to them in social play (Leach & LaRocque, 2011). Although these symptoms might seem to be totally different, they share a common denominator; they require that the involved subjects are able to address and respond to one another, thereby entering into reversible addressor – addresse relations. This may happen in the infant's lifting her arms to be picked up (and the adult responding accordingly), in establishing eye contact for communicative purposes, and also in the give-and-take relations that are often part of social play. Broadly speaking, these social interactions involve an interpersonal structure in which one subject is directed to and addresses another with the aim of opening the channel for further social interaction. Importantly, responding to the address is itself an act of address, by means of which one subject takes the role of the other. These social interactions are therefore enabled by the capacity to take up addressive engagements from someone else and to make them in turn.

Moreover, the notion of social connectedness remains something of a mystery if one tries to analyze it in terms of unilateral social cognition. What is social connectedness, and how is it established, understood in unilateral terms? If, as argued above, supplementing the unilateral directedness of subject A to subject B with the equally unilateral directedness of B to A is not sufficient for connectedness, what additional factors would have to be brought into the picture so that connectedness would arise? Would the inclusion of higher levels of unilateral social cognition help, or would it rather leave the question unresolved? A similar worry applies to the notion of social reciprocity, which, as I noted at the beginning of the article, is left largely unexplored in research on ASC. In Section 3, I suggested that an understanding of social connectedness as unconscious alignment, low-level coordination, and mutual exchange of information falls short of the experiential dimension of social connectedness. One proposal one might consider is that social connectedness is about communication. However, while impairments in communication are characteristic of many individuals with ASC, they hardly cover all symptoms of impaired connectedness. In this context, the concept of minimal social act attempts to strike a middle ground between an understanding of connectedness as, on one hand, unconscious alignment, and, on the other hand, as communicative engagement. It provides for an alternative way to investigate basic forms of dyadic self-other connectedness and to illuminate how the latter is disrupted in ASC.[13]

An important feature of the current proposal is the idea that we get a better understanding of the social impairments characteristic of ASC by contextualizing them within the interactive dyad, rather than locating them only in the person with ASC. Responsiveness to others is not an all-or-nothing feature, but rather one that covers different degrees of attunement that are specific to singular interactors.[14] The current proposal is, thus, congenial with the distinction between ''homogeneous''

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[13] Consider, moreover, that, in spite of individual differences, the capacity to recognize other subjects as mental agents is not absent in ASC. As Bosch (1970) observes, there are ''rudimentary forms of personal constitution of the other'' (p. 93): ''in autistic children early and primary forms of personal relationships exist, from which, under favorable circumstances, even if restricted and infrequent, genuine personal relationships through to friendship and love, can develop'' (p. 101). This suggests that individuals with ASC are not insensitive to the mindedness of other people tout court, although they are often described as having difficulties connecting with them and reciprocating.

[14] From a developmental perspective, if responsiveness comes in degrees, reversible self-other relations may be plausibly conceptualized as also coming in different degrees or levels: from neonatal imitation and the proto-conversations of primary

and ''heterogeneous'' dyads as a way of capturing different styles and forms of social interaction with persons with ASC, as well as different degrees of attunement (Bolis et al., 2017).[15] It also resonates with empirical results that have shown that parental sensitivity to the attention and style of engagement of children with ASC is positively correlated with the children's development of higher communicative skills at later stages of development (Siller & Sigman, 2002). It highlights the relevance of fostering intervention and pedagogical strategies that, at least in some contexts, take the dyad as the relevant unit of analysis. Furthermore, if social connectedness requires the active involvement of two subjects, conceptualizing impairments of connectedness via the concept of minimal social act might contribute to the alleviation of social stigma. In a similar vein, it is important to emphasize that ASC is a spectrum, with significant variations across individuals. The current proposal is not that all individuals with ASC are characterized by a pervasive unresponsiveness to other people, but rather that impairments in responding to others are an important component of this condition.[16]

A further advantage of appealing to the notion of minimal social act to understand sociality in ASC is that it helps to preserve a certain coherence of the spectrum. Investigations of adolescents and adults with ASC who have an IQ within a normal range (so-called high-functioning autism) show that these individuals have markedly different ways of learning about the social world compared to individuals without ASC. Individuals with ASC who do not have intellectual or language deficits still display deficits in social-emotional reciprocity. More specifically, they show difficulties processing and

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intersubjectivity, through the reciprocal and world-involving exchanges of secondary intersubjectivity, to linguistic exchanges involving the ''I'' and ''you'' pronouns, and more complex socio-cognitive phenomena. (Thanks to an anonymous reviewer for raising this point).

[15] More generally, according to Bolis et al.'s (2017) ''dialectical misattunement hypothesis'' of ASC, ''communication misalignments and weak interpersonal coupling in social interactions might be the result of increasingly divergent predictive and (inter-)action styles across individuals'' (p. 366). These authors call attention to the interpersonal character of social impairments in ASC and suggest that approaches too narrowly focus on ''tuning in'' individuals with ASC to typical standards of social interaction tend to forget the extent to which ''tuning in'' the non-ASC individual to the style of interaction of the ASC individual can make an important difference.

[16] It is worth noting that deficits in reciprocity and social responsiveness should be distinguished from deficits in attachment to others, that is, the creation of affectional bonds to others. It has been argued that many children with ASC develop attachment relations in spite of impairments in reciprocal social interaction (Rutgers, Bakermans-Kranenburg, Ijzendoorn, & Berckelaer- Onnes, 2004, p. 1131).

responding to complex social cues (e.g., when and how to join a conversation, what not to say). Adults who have developed compensation strategies for some social challenges still struggle in novel or unsupported situations and suffer from the effort and anxiety of consciously calculating what is socially intuitive for most individuals. (APA, 2013, p. 53)

Part of what is intuitive about everyday social interactions is a sensitivity to being addressed by others and the capacity to address them in turn. The problem for individuals with high-functioning ASC seems to be that the way they learn about the social world relies on intellectual and cognitive strategies that are insensitive to the moment-by-moment changes of real-life social interactions. An important part of those interactions is partaking in relationships of address and uptake of address with other subjects.[17]

6. Conclusion

My aim in this article has been to investigate the commonly endorsed, but little understood, proposal that people with ASC have impairments connecting with the feelings and actions of others. I have argued that one way to investigate the notion of social connectedness is by focusing on the role played by reciprocity. The intersubjectivity approach to ASC, championed by Hobson, served as a good starting point, due to Hobson's distinctive emphasis on the lack of intersubjective engagement, reciprocity, and identification in ASC. I have suggested, though, that Hobson's account remains ambiguous at an important juncture, concerning whether patterns of reciprocity compromised in ASC are reducible to unilateral impairments in grasping the meaning of social stimuli or whether such reciprocity is to be accounted for in more relational terms. As a way of developing the second option, I have proposed that one way to think of reciprocity beyond bilateral directed- ness is to conceptualize it as a capacity to take part in reversible and responsive relations between self and other. On this view,

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[17] First-person reports of cases of actual social interaction include descriptions of ''being flooded,'' an ''inability to keep up,'' and not knowing ''when and how'' to respond to what others do, whereas observing others (as distinguished from interacting with them) allows for thinking through the situation, albeit in an effortful way (Schilbach et al., 2013, p. 411). Being in the presence of others normally changes the perception of the environment, but individuals with high-functioning autism seem ''immune'' to interpersonal motor alignment, in spite of competent explicit social cognitive capacities (Schilbach, Eickhoff, Cieslik, Kuzmanovic, & Vogeley, 2012, p. 159).

patterns of reciprocity impaired in ASC concern the ability to take up others' experiences and to reach out to others in such a way that others can take up experiences addressed to them. This proposal puts pressure on unilateral explanations of the social deficits involved in ASC, and it motivates a deeper appreciation of the role of reciprocity in ASC research. Recent approaches to ASC have started to take reciprocity into account (Schilbach, 2015; Timmermans & Schilbach, 2014). It is plausible to expect that, with the development of new experimental methods that are more ecologically valid, more will be known about the mechanisms and biological factors that play a role in reciprocal social interactions and that are compromised in ASC.[18]

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