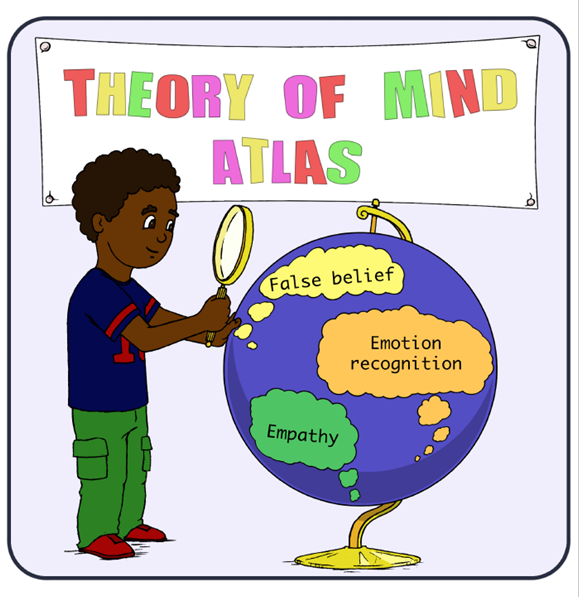
**The Theory of Mind Atlas**

**Tiffany L. Hutchins & Patricia A. Prelock © 2018**

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Item 34. My child can put himself/herself in other people’s shoes and understand how they feel.

Subscale(s): Advanced .

This item is intended to tap **true empathy.** The concept of empathy “has had a difficult history, marked by disagreement and discrepancy” (Preston & de Waal, 2002, p. 1) and the definitions of empathy have been many and varied. That said, one generally accepted definition of empathy is “the interpersonal sharing of emotional states brought about by knowledge or observation by one person of the other person’s experience or emotional state” (Hutman & DaPretto, 2009, p. 367). When understanding empathy, it is useful to make a distinction between early empathy and true empathy (Lewis, 2002). Early empathy (i.e., the tendency of infants to orient to the distress of others often by responding with their own distress cries; see description of item 3) is referred to as “the first level of empathy” (Rieffe, Ketelaar, & Wiefferink, 2010, p. 362). It emerges in infancy and is considered prewired, reflexive, and relatively independent of learning. By contrast, true empathy emerges later in development, is important for a number of social behaviors including sympathy, compassion, and altruism (Eisenberg, 1989), and requires an understanding of others’ minds in complex emotional scenarios. Although advancements in empathy occur in the second year of life when children begin to respond with sympathetic concern (rather than cries) to distress in others, “it is not until the later preschool years that children can infer [others’] emotional states from knowing about the particular events that another experiences, from the contexts in which the events occur, and from knowledge of an individual’s history and preferences” (Brownell, Zerwas, & Balaram, 2002, p. 28). Given the developmental timetable with which a true and more mature form of empathy emerges, there is good justification for its construal as an Advanced theory of mind competency.

As alluded to above, the term empathy is “notoriously tricky” (Bubandt & Willerslev, 2015, p. 10). Empathy is almost always considered a virtue but when defined as the ability to read other’s emotions (as opposed to the sharing of emotions), empathy can have a “darker, but no less social side” (Bubandt & Willerslev, 2015, p.6). As Davis (2002) explained:

“It is hard not to sing the praises of empathy, whatever it is. You don’t need an iron-clad definition to appreciate empathy. We pretty much agree that the word denotes a good thing: empathy is the stuff of group cohesion, and may be the reason we attract, or are attracted to one person over another. Unfortunately, you do need a solid definition if you’re going to study empathy, and it’s here that the gaps and inconsistencies in our understanding loom large…The term ‘empathy’ is used in everyday language to describe both the mental side (the ‘theory of mind’ part) as well as the behaviors that follow from such understanding. Note that these behaviors are only considered empathic as long as they are compassionate. If the resultant behavior is exploitative, the term ‘deception’ is applied. In that sense, deception is the evil twin of empathy – both stem from a sensitive reading of another person, but differ in the use to which that information is put” (p. 32-33).

So how we define empathy matters: when understood merely as the ability to ‘read others’, empathy “is a moral ‘virtue’ only under special circumstances. It is not in itself virtuous in the way it is regarded in Western folk knowledge” (Bubandt & Willerslev, 2015, p. 12). This notion gains importance in light of the dissociable deficits known to occur in empathy across clinical populations (described below). As it turns out, Davis’ (2002) passing reference to the “‘theory of mind’ part” (p. 32) of empathy requires further analysis and the study of autism has taught us that there is nothing straight-forward about the ‘theory of mind’ part of empathy.

**True Empathy in ASD**

ASD (along with other conditions such as psychopathy and a range of behavior disorders) has been described as an empathy disorder (Gillberg, 1992). In fact, impaired empathyis considered so central to ASD that “some prominent researchers in the field recommend the use of empathy measures to complement diagnostic tools” (Mathersul, McDonald, & Rushby, 2013, p. 657). The utility of empathy measures in the diagnosis of ASD withstanding, we reject the characterization of ASD as a disorder of empathy. Such sweeping characterizations are misleading in light of the historic difficulties surrounding definitions of empathy and the fact that empathy is a complex and multifaceted construct (Dziobek et al., 2008). Moreover, it is important to note that individual differences in empathy in ASD may be substantially accounted for by alexithymia which is a condition characterized by difficulties in identifying and describing one’s own emotional state (the estimated prevalence of alexithymia in the general population is 10% but it is between 40-65% in ASD; Bird & Viding, 2014).

In characterizing the differences between neurotypical individuals, those with ASD, and those with other psychiatric conditions, a distinction is now routinely made between ‘cognitive’ empathy and ‘affective’ or ‘emotional’ empathy. Cognitive empathy refers to the ability to represent the internal mental state of another whereas affective empathy refers to emotional responding where the observed emotion is mirrored (or resonates to some degree) within the observer (Blair, 2008). The majority of studies on empathy and ASD have examined high functioning individuals (usually older children, adolescents, or adults) and have concluded that cognitive empathy is relatively impaired whereas affective empathy is relatively spared (Dziobek et al., 2008; Jones, Happé, Gilbert, Burnett, & Viding, 2010; Mathersul et al., 2013; Rogers, Dziobek, Hassenstab, Wolf, & Convit, 2007; but see Shamay-Tsoory, Tomer, Yaniv, & Aharon-Peretz, 2002, who reported deficits in both). It follows that because ‘true’ empathy is complex and multifaceted, it can be variably affected in different clinical conditions. In distinguishing the empathy deficits characteristic of psychopathy versus ASD (and they are qualitatively *very* different; see Blair, 2008), Blair (1999) emphasized this point:

“Children with autism appear to possess at least the physiological element of the affective component; they show significant responsiveness to the distress of others. However, there have been suggestions that they lack the cognitive component of empathy; the ability to represent the internal state of another. In contrast, psychopaths are able to represent the internal states of others. However, they are significantly hypo-responsive to the distress of others. Clearly, an empathy deficit can exist in more than one form” (p. 484).

So, one obvious question is: What does all this imply about what the child with autism ‘feels’ when observing others’ emotion? We do not yet know.

“It has been suggested that an emotion feeling state can be broken down into two components: the autonomic nervous system response and cognitive appraisal. It is the cognitive appraisal of the autonomic response which gives rise to the experienced emotion…the autonomic response of children with autism to the distress of others is intact. This does not, however, imply that children with autism emotionally ‘experience’ the distress of others in the same way that normal developing children do. Without detailed knowledge of the cognitive interpretation of the stimuli it is impossible to state whether children with autism are experiencing the same emotion as normal developing children” (Blair, 1999, p. 482).

These dissociations in empathy (between cognitive and affective and the further breaking down of affective empathy into physiological arousal and cognitive appraisal of that arousal) support the idea of separate but related empathy subsystems (Davis, 1983). Still, there is more complexity in empathy in ASD than these subsystems suggest. Although most individuals with ASD will experience difficulty achieving empathy in its full sense (Frith, 1989), many (usually but not exclusively those who are older or have high language and intellectual capabilities) can be sensitive and responsive to the emotional cues of others (Travis & Sigman, 1988). Although high-functioning groups with ASD tend to underperform neurotypical samples on tasks designed to assess empathy and emotion identification, the challenges are not universal: many are able to reflect on their own experiences, label emotions, understand the perspectives of others, and respond empathically (Senland & Higgins-D’Alessandro, 2013; Yirmiya, Sigman, Kasari, & Mundy, 1999). Studies showing group differences between TD and ASD groups also tend to obscure the fact that a significant proportion of those with ASD, and their families, actually report equal or hyper-empathic degrees of empathy (Cohen-Rottenberg, 2011). These individual differences in empathy are important predictors as well: a greater degree of empathy is correlated with joint attention, face and emotion recognition and processing (Blair, 2008; Clark, Winkielman, & McIntosh, 2008), level of peer engagement in naturalistic settings, demonstrations of prosocial behavior in structured tasks (Travis, Sigman, & Ruskin, 2001), and – as is true in the general population – female gender (Baron-Cohen, 2004).

Finally, how individuals with ASD experience empathy on the cognitive level may bear little resemblance to their outward, behavioral responses. As Pouw, Rieffe, Ooosterverl, Huskens, and Stockmann (2013) recently argued:

“Empathy is supposed to cause prosocial behaviors, such as helping, sharing, comforting, in attempt to alleviate the other person’s distress. Especially these kinds of behaviors seem overly absent or limited in children with ASD. It is argued that the lack of prosocial behaviors is mainly caused by impaired cognitive empathy and poor emotion regulation. In other words, children with ASD are unable to regulate their own empathic arousal (contagion) because they fail to understand why the other person is upset. It appears that emotions of others are confusing and

unpredictable for children with ASD, which causes distress and prevents them from behaving empathically” (pp. 1257-1258).

**True Empathy in ADHD**

Relatively few studies have been conducted on this topic. Braaten and Rosen (2000) compared typically developing (TD) children and children with ADHD (ages 6 – 12) in their ability to infer the feelings of story protagonists, to rate their own feelings about stories, and to justify their ratings. Compared to the TD group, children with ADHD less often reported protagonists’ feelings that matched their own feelings and reported fewer protagonist-centered interpretations. Similarly, Dyck, Furguson, and Shochet (2001) found that compared to TD controls, children with ADHD showed deficits in emotion recognition and the ability to infer the emotional consequences of situations (but it is noteworthy that researchers did not assess children’s own experienced emotions in responses to others’ feelings). Along similar lines, children with ADHD were impaired when matching emotion labels to protagonists in stories in a study by Downs and Smith (2004) but, again, experienced emotion – a crucial component of empathy - was not assessed. Interestingly, unlike TD individuals for whom emotion recognition accuracy is positively correlated with the intensity of experienced emotion, one study actually showed a negative correlation between these factors for individuals with ADHD. As Rapport, Friedman, Tzelepis, and Van Voorhis (2002) explained: persons with ADHD tend to experience their own emotions with greater intensity than adults without the disorder “yet, this does not generalize to sensitivity toward the emotions of others. In fact, their high level of emotional intensity may disrupt their ability to be sensitive to others” (p. 207).

Research suggesting impaired empathy in ADHD as assessed by measures of direct child performance comport well with studies documenting lower levels of empathy on the basis of parent report (Hutchins et al., 2016; Marton, Weiner, Rogers, Moore, & Tannock, 2009). Two interesting caveats are worthy of consideration, however. First, researchers tend to find no differences between children with ADHD and typically developing children in self-reports of empathy: a result usually interpreted as an effect of impaired self-awareness or a ‘positive-illusory bias’ in ADHD (Hoza et al., 2004). Second, some researchers (e.g., Uekermann et al., 2010) have pointed to a limitation in the extant research involving a lack control for comorbid clinical symptomology. In fact, Marton et al. (2009) found that lower levels of parent-rated empathy were explained by co-occurring oppositional and conduct problems (CPs) in their sample of children with ADHD. They concluded that children with ADHD with clinical levels of CPs are at increased risk for impaired empathy, but that children with ADHD who do not have CPs exhibited similar levels of empathy to control children. As Marton et al. (2009) noted, their findings accord with studies indicating that 1) children with aggressive behaviors exhibit lower levels of empathy than children who are not aggressive and, 2) comorbid ADHD does not contribute variance in explaining lack of empathy in children with conduct problems. These findings underscore the importance of considering comorbid oppositional and CPs when evaluating empathy in clinical populations. At present, one defensible interpretation of the literature in this area is that children with ADHD are at risk for poor empathy development and that the presence of oppositional defiance or CPs increases risk. It is also likely that method of assessment matters: as in other areas of social-cognitive functioning, it may be that many children with ADHD are able to read (and perhaps experience) the emotions of others in the context of structured tasks but that these core empathic processes are more disrupted in online, real-world situations (e.g., see Hutchins et al., 2016).

**True Empathy in DoHH**

Few studies have examined empathy in oral and late-signing children who are DoHH. Of those studiesinterested in empathy, most have actually assessed what is considered empathy prerequisites: namely emotion recognition, emotion-regulation, and cognitive perspective-taking. These studies have yielded fairly consistent results reporting deficits in all these areas (e.g., Rieffe, 2012). Although empathy deficits have not been observed in very young deaf children with cochlear implants (e.g., in 2-3 year-olds using parent report measures of empathy; Ketelaar, Reiffe, Wiefferink, & Frijns, 2013), they have been observed in the later preschool years (Wiefferink, Rieffe, Ketelaar, De Raeve, & Frijns, 2012) and leading to the conclusion that toddlers, whether they are deaf or hearing, have yet to develop the kinds of empathic awareness tapped by measures of true empathy (Peterson, 2016).

With regard to the studies that have actually assessed empathy (as opposed to constructs like emotion recognition) in children who are DoHH, reliable deficits have been observed. Bachara, Raphael, and Phelan (1980) examined congenitally deaf, pre-, and post-lingually deaf children and found that empathy (assessed through the identification of emotions that correspond to specific situation as in “Show me how Nancy would feel if she got the food she liked best”) tended to be more impaired in congenitally deaf individuals suggesting an effect of the timing of deafness. These results are in line with a handful of more recent studies. More specifically, Gray, Hosie, Russell, Scott, and Hunter (2007) reported a significant delay but typical developmental trajectory in deaf children’s development of emotion attribution to story characters. Similarly, Dyck and Denver (2003) reported empathy deficits (what authors called ‘emotion comprehension’) in a sample of oral deaf children (9 – 13 years) but also found that scores on an index of empathy increased following invention using the ‘Funny Faces Program’ which is designed to support emotion recognition and understanding. Peterson (2016) reported that deaf children (ages 4 – 13 years) scored lower on a teacher report measure of empathic understanding and that empathic understanding was significantly correlated with deaf (but not hearing) children’s performance on standard theory of mind tasks (e.g., the false belief task). Finally, Wauters and Knoors (2013), found that deaf children (7- to 10-years) scored lower on peer-ratings of empathic behavior than did their hearing counterparts and that these peer ratings of prosocial behavior positively correlated with popularity and negatively correlated with peer rejection.

Perhaps, the most substantive study on this topic was conducted by Netten et al. (2015) who examined empathy in 70 hearing children and 122 children who were DoHH (53 with cochlear implants and 70 with hearing aids) using self-report of empathy, parent-report of child emotion recognition, and structured observations to assess level of cognitive empathy, attendance to others’ emotions, emotion recognition, and prosocial behavior. Results indicated that although levels of parent-rated emotion recognition were (surprisingly) no different between groups, the DoHH children reported lower levels of cognitive empathy and prosocial motivation than hearing children, regardless of their type of hearing device. During observation, DoHH children showed more attention to the emotion evoking events but less supportive behavior compared to controls. Finally, DoHH children attending mainstream education or using oral language showed higher levels of cognitive empathy and prosocial motivation than DoHH children who used sign (supported) language although they were still outperformed by hearing children. The authors concluded that the development of empathy depends on the extent to which children can participate in the social environment, that children who are DoHH are seriously disadvantaged in this respect, which in turn, predicts negative consequences for initiating and maintaining successful social relationships.

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