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Agent familiarity and emotional context influence the everyday empathic responding of young children with autism

Kristelle Hudry *, Virginia Slaughter

School of Psychology, University of Queensland, Australia

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ABSTRACT

Whereas research addressing empathy in autism spectrum disorders (ASD) tends to employ pencil-and-paper and laboratory-based behavioural methods, the current study is novel in eliciting parent-report data regarding everyday empathy, sampling various emotional situations regularly encountered by children. Parents of typically-developing children and children diagnosed with ASD and DS completed the newly-developed Day-to-Day Child Empathy Questionnaire. Analysis of descriptions of their children's responses to the various empathy-inducing situations supports the notion of an empathy deficit in ASD, confirming previous laboratory-based findings. However, important moderation effects were also demonstrated, for both control and clinical groups. In particular, parents reported children in all groups to be more likely to respond empathically to a familiar agent. The nature of children's responses also varied according to the specific emotional context.

In his earliest report, Kanner (1943) considered that individuals with autism were unable to experience normal emotional contact with others, deeming this be the core feature of the condition. Researchers have since sought to understand the nature of emotion in autism spectrum disorders (ASD) with a growing body of research revealing areas of deficit alongside other spared aspects of emotion (e.g., Ozonoff, Pennington, & Rogers, 1990; Prior, Dahlstrom, & Squires, 1990), and Frith (2003) explains that it is the *social* emotions (i.e., those necessitating an appreciation of other people) which are fundamentally impaired.

* Corresponding author at: BBSU, UCL Institute of Child Health, 30 Guilford Street, London WC1N 1EH, United Kingdom. Tel.: +44 20 7 905 2164; fax: +44 20 7 831 7050.
E-mail address: k.hudry@ich.ucl.ac.uk (K. Hudry).

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One such social emotion, empathy, has long been of research and philosophical interest, and is multifaceted, involving perceptual, affective, cognitive, and behavioural components (Eisenberg et al., 1989; Feshbach, 1982; Hoffman, 1984). Originally considered a uniquely human capacity, Preston and de Waal (2002a) have argued that empathy actually exists on a spectrum of sophistication, with simpler forms present in other animal species and higher-level forms present in humans as well as the great apes. Similarly, in individual humans, empathy is likely to arise from a basic biological preparedness to attend toward others' emotions (Hoffman, 1975). From these early beginnings, it is then able to develop in its sophistication and complexity, acting to regulate the individual's behaviour with respect to social others, and promoting his or her interpersonal relationships with these others (Preston & de Waal, 2002a).

While stability of individual differences in empathic responsiveness has been demonstrated across the first decades of life (Cummings, Hollenbeck, Iannotti, Radke-Yarrow, & Zahn-Waxler, 1986; Eisenberg et al., 1987), a number of robust moderating effects have also been demonstrated. Gender is perhaps the most reliable of these, with girls shown to be more empathic than boys from 14 months of age through to adolescence (Eisenberg & Fabes, 1998; Grusec, Goodnow, & Cohen, 1996; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Even within individuals, empathy is not static but subject to several robust moderators; familiarity, similarity, learning, past experience, and salience (Preston & de Waal, 2002b). The familiarity effect is evident even early on, as infants become first attuned to emotions of the primary caregiver (Montague & Walker-Andrews, 2002) and are only later sensitive to those of others (Soken & Pick, 1992, 1999; Walker, 1982). Similarly, although not unempathic toward strangers, children do direct more prosocial behaviours toward their own caregivers (Zahn-Waxler et al., 1992). The similarity effect describes the greater empathy shown toward others who are more similar (e.g., in terms of age, gender, species, etc.). Effects of learning and past experience are evident as individuals show more empathy regarding distressing situations with which they have had past or personal experience, and cue salience explains that empathy becomes more likely with greater clarity of emotional cues[1] (Preston & de Waal, 2002b).

Empathy deficits in ASD have been demonstrated across the spectrum. Young (often non-verbal) children with autism, assessed using play-based scenarios of enacted adult distress, fail to react appropriately showing lower levels of concern and reduced prosocial responding compared to matched controls (Bacon, Fein, Morris, Waterhouse, & Allen, 1998; Charman et al., 1997; Dawson et al., 2004; Sigman, Kasari, Kwon, & Yirmiya, 1992). Empathy has also been assessed in older children, adolescents and adults with ASD, via the presentation of controlled stimuli (e.g., static images, audio clips, video footage, etc.) and test questions, exploiting the better-developed verbal abilities of these individuals in order to gain insight into their understanding of and reactions toward emotion (e.g., Buitelaar & van der Wees, 1997; Dennis, Lockyer, & Lazenby, 2000; Hobson, 1986a,b, 1993; Hobson, Ouston, & Lee, 1989; Moore, Hobson, & Lee, 1997). Empathy deficits remain, however, despite the intact intellectual abilities of many of these individuals (Sigman et al., 1992; Yirmiya, Sigman, Kasari, & Mundy, 1992), evidencing these as distinct from cognitive ability. Despite showing reduced empathy at a group level, compared to controls, individual variation is seen among individuals with ASD, and as is the case for typical controls, stability over time has also been shown in the empathic abilities of individuals with ASD (McGovern & Sigman, 2005).

Empathy deficits in ASD exist alongside cognitive impairments which may contribute to or interact together with these. Such impairments include deficits in perspective taking (e.g., Baron-Cohen, Leslie, & Frith, 1985), a tendency for weak central coherence (WCC) in processing style (e.g., Happe, 1999), and impaired aspects of executive function (e.g., Hill, 2004). Another noteworthy cognitive feature is a relative failure to generalize over complex and abstract categories (Klinger & Dawson, 2001; Minshew, Meyer, & Goldstein, 2002). This factor has the potential to hinder the development of empathy in individuals with ASD by preventing them from recognising similarities in others' emotional responses, or the consistency of individuals' reactions across different emotional situations.

Aside from the global notion that empathy deficits exist to varying degrees for individuals along the autism spectrum, little is yet known about the full extent of such deficits in this condition. The current

[1] Although if overly salient, the result in the observer may be one of personal distress rather than of empathy (Preston & de Waal, 2002a).