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Digital Socialising in Children on the Autism Spectrum

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Introduction

Autism is a complex cognitive, biological, and behavioural phenomenon that, in simple terms, shapes how people move, think, and perceive the world around them, though it shapes all individuals differently (Fletcher-Watson & Happé, 2019). Some autistic people are very talkative while others may be unable to reliably communicate through oral speech; some may be highly gifted while others have intellectual impairments. For children on the autism spectrum, social interactions can be particularly challenging (Cresswell, Hinch, & Cage, 2019). This includes initiating social encounters, displaying emotional reciprocity, and interpreting non-verbal cues. Frustration arising from social exchanges, pressure to conform to neurotypical expectations, and peer victimisation can all lead to increased feelings of depression and anxiety (e.g., Whitehouse et al., 2009). These challenges also occur among broader conditions of contemporary childhood and adolescence, within which media and technology are increasingly central. This chapter delves into these nuances of sociality in relation to autistic youth and their uses of media and communication technologies.

The more that researchers learn about autism, the more challenging it becomes to summarise or universalise. The lived experience of autism differs across age, race, ethnicity, class, gender, sexuality, and geography (Brown, Ashkenazy, & Onaiwu, 2017). The story of autism has historically been told by non-autistic people, though autistic individuals are increasingly taking narrative ownership (e.g., Yergeau, 2017). Over the course of its long and contentious history as a medical classification (Silberman, 2015), autism has been associated with a personal preference for ‘aloneness’ (Kanner, 1943) and a retreat from society (i.e., Bruno Bettelheim’s much-maligned book The Empty Fortress, 1967). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013), which is used by clinicians to diagnose autism, characterises it as a spectrum of closely related disorders that present as ‘persistent deficits’ in an individual’s development of social relationships and communication, as well as repetitive patterns of behaviour, interests, or activities.

The assumption of preferred solitude among those on the autism spectrum has undergone significant challenge from psychologists, anthropologists, and autistic individuals (Biklen, 2005; Jaswal & Akhtar, 2019). Some contend that ‘autistic sociality’ (Ochs & Solomon, 2010) is a different, rather than less, social way of being in the world. Not looking someone in the eye, for instance, may be a reflexive avoidance of visual stimuli rather than an intentional
personal slight (Robison, 2008). Moreover, the social motivations of autistic children and adults do not rest solely with the diagnosed individual but arise from dynamic interactions and relationships with people, communities, and institutions in specific contexts over time (Kapp, 2018). For example, when young people on the autism spectrum enter the complicated landscape of adolescence, research has shown that they infrequently participate in social activities and rarely hang out with friends outside of school despite expressing a desire to connect (Wagner et al., 2004).

The discussion in this chapter spans digital technologies characterised as ‘social media’ (e.g., websites and apps that facilitate the networked flow of ideas and communication), instructional technologies used by therapists and educators to modify the social behaviour of autistic children, and media technologies that are made social through their co-use with others. The analyses herein also touch upon general concerns that pertain to the development of all children and adolescents in the digital age: the relationship of social-emotional development to other domains (including language, physical, and physiological) and the myriad cultural, political, and historical factors shaping how children react to and interact with society and social institutions.

After reviewing relevant theoretical and conceptual framings of disability, autism, and youth, this chapter encompasses three main areas: technologies for socialisation (educational tools and therapeutic devices; e.g., robots), materials for socialising (everyday media used at home and on the go, e.g., YouTube), and media that purportedly promote anti-social behaviour in children and exacerbate social isolation. With added reflection from ethnographic fieldwork on this topic, this chapter highlights how digital socialising not only pertains to autism or youth but has broader implications for technology, society, and the sociotechnical writ large. The argument is made that modern media and technology practices of autistic youth reveal tensions and contradictions in how social norms are made, remade, and unmade through highly complex technologically mediated interactions and relationships occurring on both interpersonal and institutional levels.

**Conceptual and Theoretical Background**

Defining autism exclusively through its diagnostic criteria fits into a ‘medical model’ of disability, in which disability is located solely in the individual’s body (Silverman, 2012). The aim of medical interventions and research underpinned by this model is to prevent, diminish, or correct for the disability. In the case of autism, this medicalisation regularly manifests in language used to describe autism as an ‘epidemic’ or ‘crisis’ (Eyal et al., 2010; Sinclair, 1993). As mentioned above, the DSM-5 diagnostic criteria for autism incorporates multiple mentions of sociality. This includes “deficits in social-emotional reciprocity” such as “reduced sharing of interests, emotions, or affect”; “deficits in nonverbal communicative behaviours used for social interaction”; and “deficits in developing, maintaining, and understanding relationships”. There are numerous ways to understand how autistic people might or might not be ‘social’, with the DSM-5 framing focussed on lack and deficit serving as only one possible guidepost.

Therapeutic efforts tend to proceed with the goal of changing the child in some manner but may do this by altering the behaviour of others (e.g., parent- and peer-mediated interventions) or the environment (e.g., visual supports). Other interventions seek to accommodate the child by modifying others’ behaviour or the environment but are less concerned with whether this results in long-term changes within the child. Recognition that interpersonal and institutional interactions may limit a child’s abilities reflects a ‘social model’ of disability. In this model, emphasis is shifted from the level of the individual to the disabling effects of society and stigma. The social model helps to explain, for instance, how the challenges of autism are in part defined by the hardships faced by children and adults in accessing the human, material, and temporal resources necessary to receive a diagnosis (particularly among girls and women, non-white individuals, and...
those in developing countries), and the significant economic, cultural, and geographic barriers to getting adequate support services.

Obtaining an autism diagnosis however is distinct from identifying with autistic culture (Straus, 2013). Many autistic adults today did not receive formal diagnoses as children or were misdiagnosed in the past. A more ‘political/relational’ model of disability (Kafer, 2013) recognises faults in both the medical and social models for denying either the lived pleasures or pains of disability. Drawing on work from feminism and crip theory, disability is defined in the political/relational model in part by the collective actions undertaken by people with disabilities as they develop new alliances and forms of kinship in efforts to thrive and survive in a largely ableist world. The self-advocacy movement around ‘neurodiversity’, the idea that neurological differences are authentic forms of diversity, challenges the conception that autistic people should socially conform to a clinical ideal (Kapp et al., 2013).

Just as there are various perspectives on what disability means for medicine, society, and disabled people themselves, there are many answers to the question of what it means to be social – more than can be discussed here. The most relevant for this chapter’s purposes comes from the field of cultural anthropology, specifically the work of Elinor Ochs and Olga Solomon (2010). They offer the notion of ‘autistic sociality’, meaning a sociality shared by autistic individuals that is not quantitatively less social than non-autistic people, but rather, qualitatively different. Human sociality, according to Ochs and Solomon, encompasses a range of possibilities for social coordination shaped by situational contexts, material objects, and the dynamics of groups and individuals. From this perspective, teaching autistic children ‘pro-social skills’ and promoting their ‘social-emotional development’ is not value neutral (e.g., promoting agreeability and compliance over resistance and non-compliance), especially not in the context of digital media and communication technologies designed for the socialisation of autistic children.

Socialisation through Digital Media

Digital socialisation refers to technologies and tools that, at the less extreme end, are used to help autistic children better adapt into neurotypical society through social learning and imitation, helping them to reduce anxiety or uncertainty when encountering novel social situations. From the more extreme angle, these technologies are implicitly or explicitly designed to make children appear ‘less autistic’ and more neurotypical in their communication and behaviour. Used in tandem with human educators and clinical professionals, these digital media focus on educational and therapeutic goals such as teaching children turn-taking in play, rules in games, and reciprocity in face-to-face conversation.

One of the major socialisation technologies for autistic children in educational settings are social narrative apps. Social narratives (or Social Stories™) prepare individuals for unfamiliar social situations by depicting future interactions or events so that a person can predict what might happen or be more aware of social expectations in a given circumstance, thereby reducing anxiety. They may emphasise a social behaviour, like making eye contact or addressing people when speaking. Like picture books, social narratives present visual information through photographs, illustrated symbols, and written words (Howley & Arnold, 2005). Digital tools and apps for creating social narratives allow for audio and video to supplement pictures, support a child’s independent navigation of the text, and offer a cost-effective method of customising narratives for different circumstances (Doody, 2015).

Virtual reality (VR) has also been used for socialisation in education, as it provides dynamic social settings and controlled environments for children to work on specific social communication skills and for educators to quantitatively track gains in skills over time. Through the use of VR, children can learn to recognise body language or facial expressions and gauge emotional
environments, all in a digital space that can be customised to their needs and without real-world social ramifications. Studies have shown that VR, for example, can aid autistic children in adapting to pretend play situations with a peer (Herrera et al., 2008).

In terms of therapeutic and medical contexts, digital media for socialisation includes robots that mimic humans and wearable technologies to enhance social-emotional learning. Robots can be programmed to predictably perform simple social interactions based on the principles of cognitive behavioural therapy (CBT) or applied behavioural analysis (ABA). They can be used to practise joint attention, reading facial expressions, and imitation in specific contexts (e.g., listening to and telling a story). While robots with faces are effective for building these skills, those that can also talk are used for such purposes as increasing comfort discussing an expanded range of conversational topics among children with narrow interests (Aresti-Bartolome & Garcia-Zapirain, 2014).

Wearable devices like Google Glass provide opportunities for adolescents and teenagers to work on skills in active social situations. Through speech recognition and various algorithms, spoken words can be translated into text and paired with an appropriate social response, which is then projected onto the lens of the glasses in the user’s line of sight. Such ‘heads-up technologies’ allow users to observe and participate in the social world around them, potentially more so than ‘heads-down technologies’ like iPads (Keshav et al., 2017). At the moment though, iPads blend in more easily than Google Glass and are more socially acceptable in public spaces.

These technologies for promoting socialisation come with a host of limitations, including a lack of empirical support even if one accepts their rationale (Bottema-Beutel, Park, & Kim, 2018). Critics contend that these technologies treat autistic children like machines themselves and perpetuate the idea that they are robotic in their movement, language, and emotions (Kobie, 2018). They can ultimately be socially isolating if not integrated into inclusive learning settings (Sobel et al., 2016). And though there is strong evidence indicating that art, nature, and animal-based therapies are enjoyed by autistic children and can support social interactions by reducing anxiety, funding for ‘innovative’ research tends to go towards technological interventions (Richardson et al., 2018).

Anti-Sociality through Digital Media

The view of autistic children’s social expression as something biomedical also extends to a focus on negative health outcomes in their use of digital media, and on recreational technology use as something that requires intervention from medical and clinical professionals (Mello, Alper, & Allen, 2020). Anti-sociality is characterised in this context by improper and problematic screen use, addiction, and the development of maladaptive and harmful behaviours (e.g., Mazurek et al., 2012). Outcomes include diminished ability to read facial expressions, lower friendship trust, and feelings of alienation (Blais et al., 2007). Such pathologised framing reflects broader concerns about smartphones ‘rewiring’ the brains of neurotypical children; specifically, neurologically diverging from typical development by reducing empathy, causing the avoidance of eye contact, and being unable to handle spontaneous social interactions such as talking on the phone (Browning, 2011). At its most alarmist, this rhetoric warns of “Virtual Autism”, or autism induced by screens among neurotypical children (Cytowic, 2017).

The majority of published research on how autistic children use screen and interactive media has focussed on the negative effects of television and video games. Children on the spectrum spend more time with screen-based media than any other leisure activity, averaging about 4.5 hours per day (Mazurek & Wenstrup, 2013). Due to the nature of autism, children may also have difficulty disengaging from digital devices (Harrison et al., 2019). Interviews with parents have indicated that an autistic child’s TV viewing preferences and routines are prioritised in
households, potentially side-lining siblings and putting a strain on relationships (Nally, Houlton, & Ralph, 2000). However, since today’s households tend to contain multiple screens, sometimes more than one per family member, a child on the autism spectrum may be able to be co-located with family members while wearing headphones and watching programming of their choice on a mobile device.

Autistic adolescents also report a preference for video games in comparison with other leisure activities (Kuo et al., 2013) and spend on average one hour more per day playing than their typically developing peers (Mazurek et al., 2012). Little of that time is reportedly spent on games with an element of social interaction (Mazurek & Wenstrup, 2013). Even within games that contain some opportunity to interact with others, those online exchanges are not always positively associated with quality relationships. They can lead to negative social consequences like cyberbullying and online harassment, which is further exacerbated by challenges that autistic children encounter in registering emotional cues.

**Socialising through Digital Media**

There is a pressing need to move beyond the rhetoric above that characterises technology as either social cure or social harm for children on the autism spectrum. It is just as, if not more, important to study the mundane and ordinary uses of media and technology in autistic children’s everyday lives, pre-existing environments into which novel tools like robots would conceivably enter. There is a pervasive belief that there must be therapeutic benefits from screens in order for them to be seen as worthwhile for autistic children. It is worth arguing however that children with disabilities should be able to experience things that they enjoy, regardless of any perceived benefit (Goodley & Runswick-Cole, 2010). Digital socialising encompasses all social spaces where the digital is present, ubiquitous mobile technologies in the public and private sphere, and digital environments that can both limit and support social well-being. These social practices also draw upon digital tools designed for and by autistic people, and the ways in which autistic people adapt tools for autistic sociality (van Schalkwyk et al., 2017).

New media technologies can reduce barriers to social and cultural participation. For instance, Ringland and colleagues (2016) have studied Autcraft, a private server of the popular video game Minecraft created by an autistic father of an autistic son who enjoyed the game but faced targeted bullying on public Minecraft servers. Autcraft generally provides a safe and supportive space for autistic children to play the game (Ringland et al., 2015). The server models a strengths-based approach to autism while also being responsive to realistic challenges (e.g., scaffolded content moderation within Minecraft’s chat feature). Through their digital ethnographic work, Ringland et al. argue for more grounded and expansive approaches to digital sociality among autistic youth; for example, recognising the value of YouTube video creation on topics of deep personal interest that additionally support an autistic child’s confidence and communication skills.

Digital socialising among autistic children is also influenced by their sensory processing and perception, and the extent to which digital media is able to meet autistic children’s sensory needs (Alper, 2018; Harrison et al., 2019). Many autistic people report over or under reactivity to sensory stimuli (Donnellan, Hill, & Leary, 2010). Autistic children will often self-stimulate (or ‘stim’) while engaging with digital media as well as use media to experience pleasurable sensory stimuli; for example, “trampoline jumping while listening to music on headphones and watching television, [and] bringing [their] face close to [the] video screen and tensing [their] whole body” (Kirby et al., 2017, p. 148). They may use media and technology to adapt a physical experience in order to remove an unpleasant sensory aspect (Ringland et al., 2017), such as watching a boisterous sporting event on TV instead of in person (Kirby, Dickie, & Baranek, 2015).

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Environmental modifications with and around media can allow children on the autism spectrum to avoid sensory discomfort and in turn support their everyday functioning in the social world.

Lastly, socialisation and socialising are not wholly distinct from one another and are highly contextual. One prime example of this entwinement is the dual use of tablet computers and apps by non-, minimally, and selectively speaking autistic youth as both assistive speech devices (also known as augmentative and alternative communication or AAC) and as tools for learning and leisure through additional educational and entertainment apps (Alper, 2017). AAC apps exist in tension with other ways in which media content, like playing aloud a song on the Spotify app, can be used to communicate cultural meaning. Children without access to adequate means of sharing their needs, desires, and thoughts with others often enact behaviour that might be considered anti-social. AAC as a communication system and means of social participation is bound up in complex ways with educational and medical discourses.

**Future Directions**

While not everything that autistic children do with digital media can be explained by their autism, in the future society needs to better understand how neurotypical and neurodivergent children may be both similar and different in their usage.³ There has been considerably less research on autistic youth’s digital socialising than on their digital socialisation and anti-sociality through digital media. This neglect in part reflects a greater focus on harms than benefits in research on children, media, and technology. While these different types of technologies are usually studied separately, they are all part of autistic children’s digital ecologies (Takeuchi & Levine, 2014), which includes wearable GPS tracking devices for autistic children with a tendency to run suddenly into dangerous situations, as well as resulting discussions about digital rights, negotiating privacy and safety in society, and the free movement of people with disabilities through public space (Alper & Goggin, 2017).

Future research needs to be more representative, longitudinal, qualitative, and global in nature (Stiller & Mößle, 2018). Efforts should be made to generate knowledge drawn from the media experiences of autistic girls and non-white children on the spectrum. Beyond a given medium or platform, content is understudied as a central aspect of media usage (Martins, King, & Beights, 2019). Considering that a great deal of research is drawn from parent report and surveys, more inroads should be made to conduct ethnographic work embedded in the everyday lives of autistic children and adolescents. This includes directly engaging with them in a manner that best accommodates their diverse cognitive, behavioural, and communication profiles. Lastly, more work should also grapple with the morality and ethics of technologies for digital socialisation, especially with marginalised and vulnerable groups (Richardson et al., 2018).

One concluding example from fieldwork highlights the complexities of autistic children’s engagement with digital technologies, and how future research directions might explore these layered interactions, specifically as they pertain to how social norms and social inequalities are maintained through media technologies. Ryan is a three-year-old middle-class white boy on the autism spectrum.³ During Alper’s visit to his home, he had a meltdown after his mom, Tara, refused to let him watch continuous YouTube videos on the large flatscreen TV in their living room. She wanted him instead to play with an ABA app on the iPad designed to teach autistic children about professions and their societal roles. “Who helps keep neighbourhoods safe?” asked the app’s voiceover while the screen displayed illustrations of different professionals. Ryan initially selected the firefighter on-screen but the correct response, according to the app, was police officer. “A firefighter technically does too”, Alper quietly interjected. Tara replied, “Yeah but, in the wording that ABA uses, it’s ‘Who puts out fires, is the firefighter’ and ‘Who keeps us safe,
the police officer”. According to whoever wrote, programmed, and produced the app, police officers keep us safe, while firefighters do not.

Immediately notable was the implied ‘us’ in the app, particularly with respect to race, disability, and intersectionality (Brown, Ashkenazy, & Onaiwu, 2017). The visit to Ryan’s house in March 2017 came a few years into the Black Lives Matter movement protests in the United States against police killings of Black people and broader issues of police brutality. Who did the universal ‘us’ represent? Did it include autistic people, and specifically autistic people of colour? Nearly 20% of young people on the spectrum have had an encounter with police by age 21, and about half of those by age 15 (Crane et al., 2016). The belief that police officers keep us safe is not morally or ethically neutral; it is an inherently political one, and Ryan’s social skills app was not outside of those politics. While the same can be said for any curricular material that children encounter throughout their informal and formal learning, what distinguished this interaction was that it occurred within the context of a therapy app and was bound up with medical authority that is largely off-limits to wide swathes of society. Learning about social institutions was tied to therapeutic treatment – treatment which constituted being able to select a single ‘correct’ answer, which was not in fact correct – and all of this took place against the backdrop of a child’s desire to stream YouTube videos.

The above discussion and the literature reviewed in this chapter are all intended to generate more questions than answers about digital media, children, and autism. For example, what does it mean for technologies to be ‘social’, and for society – including autistic children – to make use of them through all that is associated with the ‘sociotechnical’, including digital interactions, norms, and networks? What unquestioned beliefs about sociality underpin the design and deployment of social media technologies generally? And in what ways are these assumptions similar or different from those programmed into technologies explicitly designed to teach autistic children how to be social? Much more work is needed to fully understand how young people on the autism spectrum engage in digital socialising, and how it in turn shapes and is shaped by socialisation and anti-sociality.

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Notes
1 This chapter uses the language of ‘autistic child’, ‘child on the (autism) spectrum’, and ‘autism’. These terms are largely preferred by autism self-advocates over ‘person with autism’ and ‘autism spectrum disorder’, which tend to be preferred by parents and clinicians (Kenny et al., 2016). It should also be noted that the notion of autism as a ‘spectrum’ is itself imperfect and may reinforce a hierarchy of abilities (e.g., ‘high’ and ‘low’ functioning); see Thomas and Boellstorff (2017).
2 The ethics of CBT and ABA techniques are greatly debated within and outside the autism community (Kirkham, 2017).
3 Neurodivergence encompasses other variations in the human brain besides autism resulting in differences in sociability, mood, learning, attention, and other mental functions (i.e., ADHD, dyslexia) (Silberman, 2015).
4 All participant names are pseudonyms.

References


