Short Report

autism

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Object personification in autism: This paper will be very sad if you don't read it

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Abstract

Object personification is the attribution of human characteristics to non-human agents. In online forums, autistic individuals commonly report experiencing this phenomenon. Given that approximately half of all autistic individuals experience difficulties identifying their own emotions, the suggestion that object personification may be a feature of autism seems almost paradoxical. Why would a person experience sympathy for objects, when they struggle to understand and verbalise the emotions of other people as well as their own? An online survey was used to assess tendency for personification in 87 autistic and 263 non-autistic adults. Together, our results indicate that object personification occurs commonly among autistic individuals, and perhaps more often (and later in life) than in the general population. Given that in many cases, autistic people report their personification experiences as distressing, it is important to consider the reasons for the increased personification and identify structures for support.

Keywords

anthropomorphism, autism spectrum disorders, cognition (attention, learning, memory), perception, personification

In online forums, autistic individuals describe a special relationship with objects. They report, for example, that papers in a filing cabinet feel unloved or that the last crisp in a packet is lonely.[1] Savarese (2014) identified an 'object-centred empathy' in the literary contributions (e.g. novels, essays) of autistic writers and proposed that autistic individuals act like personifying poets. And yet, to the best of our knowledge, there have been no empirical studies investigating the first-hand experiences of *object personification* – the attribution of human-like qualities, such as gender, social and personality attributes to objects (Sobczak-Edmans and Sagiv, 2013) – in the everyday lives of autistic individuals. Specifically, we are interested in the spontaneous coupling of human-like qualities to everyday objects (e.g. furniture, gadgets and clothing), rather than cartoons or abstract two-dimensional shapes (Castelli et al., 2002; Klin, 2000). In this short report, we take the first step towards understanding these experiences, reporting the results of an online survey involving 87 autistic adults and 263 adults without autism.

Autism is a developmental condition thought to affect more than 1% of the UK population (Brugha et al., 2011). While severity and symptom profile vary across individuals, autism is clinically defined by deficits in social communication and interaction, and the presence of restricted and repetitive behaviours (American Psychiatric Association, 2013). Theory of mind – the appreciation that other people have thoughts and beliefs that differ from one's own – is thought to be impaired in many autistic individuals (Senju et al., 2009). Moreover, approximately half of all autistic individuals experience alexithymia (Bird and Cook, 2013), a condition characterised by difficulties identifying one's own emotions. Given these challenges, the suggestion that object personification may be a feature of autism seems almost paradoxical. Why would a person experience sympathy for objects, when they struggle to understand and verbalise the emotions of other people as well as their own? We set out to investigate whether the descriptions of object personification seen in online forums were representative of a large subset of the autistic population.

Methods

We carried out an online survey, administered via Survey Monkey, which comprised four parts: (1) demographic

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information; (2) the Autism Quotient 10 (AQ10; Allison et al., 2012), a 10-item questionnaire shown to be an effective screen for autistic traits; (3) a bespoke set of questions assessing attitudes towards objects, asking whether participants ever view various object categories as having gender (yes/no), human-like attributes (yes/no), feelings (yes/no), or social roles/relationships (yes/no), and if so, how frequently (daily/weekly/monthly/rarely); and (4) a 20-item Anthropomorphism Questionnaire (Neave et al., 2015). Anthropomorphism is closely related to personification and involves the attribution of human-like characteristics to a God, animals, non-human entities and objects. In psychology research, the two terms are often used interchangeably. The Anthropomorphism Questionnaire asks participants to report the level of agreement with statements that involve the assumption that non-human objects have thoughts, feelings and motivations. An algorithm is then used to create a separate score for childhood and current (adult) behaviours.

The survey was advertised on social media and through the researchers' own networks. Particular efforts were made to reach autistic participants via online autism groups and existing databases held by the authors' research centres. Care was taken not to post information about the survey on personification-related Internet groups, to guard against artificially elevating the rates of personification within respondents. All procedures were approved by the Research Ethics Committee of the university, and all participants gave consent to take part in the study.

Results

A total of 416 people responded, 92 who reported a professional diagnosis of autism and 280 who reported being non-autistic. Those who did not answer regarding diagnostic status ($n=17$), believed they had undiagnosed autism ($n=22$), were in the process of pursuing a diagnosis ($n=5$) or did not have English as their first language ($n=22$) were excluded. Having English as a first language was required in order to avoid the confounding impact that having a first language with gendered nouns might have on personification rates (see discussion in Sagiv et al., 2017 regarding higher rates of grapheme personification in French-speaking populations compared to in English-speaking populations). Table 1 provides data for the resultant groups (87 autistic and 263 non-autistic individuals).

As expected, AQ10 scores were significantly higher in the autistic group (mean = 7.9) compared to the non-autistic group (mean = 2.2; $t(320)=26.0$, $p<0.001$, $d=3.26$). A score of 6 or above on the AQ10 is considered an indication of autism.[2] Using results from Part 3 of the questionnaire, we created a variable to distinguish respondents who did and did not personify. Respondents were classed as 'personifiers' if they reported that objects had human-like traits or feelings, or provided a description consistent with personification in the 'other' response option, for example 'has own thoughts'. The coding of these responses was performed independently by both authors, with inter-rater reliability of 93%. Using this metric, there were significantly more personifiers in the autistic group (56%) than in the non-autistic group (33%; $\chi^2=13.8$, $p<0.001$, $w=0.2$). Autistic personifiers also reported experiencing the phenomenon more often (31% reporting daily personification) than non-autistic personifiers (16% daily); however, this difference failed to reach significance ($\chi^2=3.55$, $p=0.059$, $w=1.7$). The attribution of gender to objects did not differ between the autistic (33%) and non-autistic group (35%; $\chi^2=0.057$, $p=0.811$, $w=0.013$).

Overall scores for the Anthropomorphism Questionnaire were higher in the autistic group ($t(311)=2.31$, $p=0.02$, $d=0.27$). In addition, the pattern across the two subscales revealed group differences. On the Childhood Subscale, the average scores were very similar ($t(311)=0.73$, $p=0.47$, $d=0.09$); however, the autistic group more strongly endorsed statements from the General Subscale ($t(311)=3.84$, $p<0.001$, $d=0.45$), suggesting that anthropomorphism more commonly persists into adulthood for autistic individuals than for those without the condition.

Given the gender imbalance between the groups (fewer males in the non-autistic group, as is often the case due to higher diagnosis rates of autism in males compared to females), differences in personification levels between the genders were calculated. Analyses indicated that females appear to have *higher* scores on the child sub-scale of the Anthropomorphism questionnaire ($t(308)=2.18$, $p=0.03$, $d=0.30$). This suggests that – if anything – the differences between the autistic and non-autistic groups are underestimated in our results.

Discussion

Together, our results indicate that object personification occurs commonly among autistic individuals, and perhaps more often (and later in life) than in the general population. Although initially counter-intuitive, we posit various explanations. Personification may reduce social disconnection in autism. Autistic individuals report greater loneliness and social isolation (Causton-Theoharis et al., 2009), and ascribing human-like qualities (e.g. free will) to non-human agents (e.g. alarm clocks, pillows) has been shown to reduce loneliness and promote social connection (Epley et al., 2008).

It may also be the case that personification is used to reduce uncertainty and thus alleviate anxiety in autism. Autistic individuals are often intolerant to uncertainty (Boulter et al., 2014), and experience considerable anxiety in unstructured environments. Ascribing human-like qualities to non-human agents has been shown to make these stimuli more predictable and understandable, thereby reducing uncertainty (Waytz, 2010). Indeed, personification may

Table 1. Demographic information for autistic and non-autistic survey respondents (all percentages are valid percentages, and *n* values are given where there is missing data due to non-responses).

Variable	Autistic group (*n* = 87)	Non-autistic group (*n* = 263)
Age in years	**Frequency (%)**	
16–24	23 (26)	22 (8)
25–34	33 (38)	99 (38)
35–44	13 (15)	69 (26)
45–54	13 (15)	36 (14)
55–64	4 (5)	26 (10)
65–74	1 (1)	11 (4)
Gender	**Frequency (%)**	
Male	40 (46)	36 (13.5)
Female	44 (51)	226 (86)
Other	3 (3)	1 (0.5)
AQ10	**Mean (SD) [*n* = 78]**	**[*n* = 244]**
Score	7.9 (1.8)	2.2 (1.7)
Do you ever view objects as having:	**Frequency (%[a]) [*n* = 75]**	**[*n* = 244]**
Gender	25 (33)	85 (35)
Human-like attributes	26 (35)	53 (22)
Feelings	34 (45)	76 (31)
Other	12 (16)	7 (3)
None of the above	33 (44)	139 (57)
Regularity of personification:	**Frequency (%) [*n* = 42 personifiers]**	**[*n* = 80 personifiers]**
Rarely	12 (28)	30 (37.5)
Monthly	5 (12)	14 (17.5)
Weekly	7 (17)	20 (25)
Daily	13 (31)	13 (16)
Other	5 (12)	3 (4)
Anthropomorphism Questionnaire	**mean (SD) [*n* = 75]**	**[*n* = 238]**
Total score	36 (30)	29 (21)
Childhood subscale	20 (17)	18 (14)
General (adult) subscale	17 (15)	11 (10)

AQ10: Autism Quotient 10; SD: standard deviation.
[a]Note that for the object-attributes question, multiple responses could be selected, therefore percentage values are given as percentage of respondents who endorsed each response option.

act as a bridge for autistic individuals. A recent review revealed that Theory of Mind deficits were ameliorated when assessing the mental states of anthropomorphic stimuli (e.g. cartoons) compared to human stimuli (Atherton and Cross, 2018).

Finally, the personification exhibited by autistic individuals may be synaesthetic in nature. The prevalence of synaesthesia – atypical merging of sensory and cognitive constructs – is higher in autistic individuals than in the general population, with one study identifying synaesthesia in 31 of 164 autistic participants (Baron-Cohen et al., 2013). Moreover, synaesthetic variants involving the personification of ordinal linguistic units (e.g. letters, numbers, weekdays) and objects have been identified (Smilek et al., 2007). Of particular relevance to this study is recent work highlighting that, in non-autistic individuals, synaesthetic personification may occur even in individuals who attain low scores on empathy measures (Amin et al., 2011). This observation has led to the suggestion that, in some individuals, personification may result from difficulties mentalising (e.g. using the wrong cues: Sagiv et al., 2017). Further investigation would establish which, if any, of these three hypotheses might be driving the increased rates of personification seen in autism.

To conclude, we have provided the first slice of empirical evidence to suggest that autistic individuals may demonstrate a propensity towards object personification and anthropomorphism. It must be noted that our clinical sample was based on self-report (rather than objectively verified diagnoses) and respondents were recruited via convenience sampling – both of which may reduce the generalisability of the findings. However, the results appear to echo the anecdotal comments made by autistic individuals. In our review of online forums, we were struck by the distressing tone of many posts (WrongPlanet.net, 2017). Autistic individuals reported sadness and despair

when faced with an object that might be hurt or lonely, and several asked whether they might receive 'help for their problem'. It will be important for future work to establish the frequency with which object personification causes distress, and if necessary, to identify possible structures for providing support.

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Notes

1. For representative examples, see Slavin (2015) (http://adultswithautism.org.uk/autism-feeling-sympathy-for-objects/) and WrongPlanet.net (2017) (http://wrongplanet.net/forums/viewtopic.php?t=336800).
2. In the autistic group, there were 5 individuals (6%) who did not reach this cut-off and 11 in the non-autistic group who scored over the cut-off (4.5%). Analyses were re-run with these individuals excluded, and all results remained unchanged. As such, and given that an autism diagnosis is not based on one questionnaire alone, these individuals were kept in the sample.

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References

Allison C, Auyeung B and Baron-Cohen S (2012) Toward brief 'Red Flags' for autism screening: the short autism spectrum quotient and the short quantitative checklist for autism in toddlers in 1000 cases and 3000 controls. *Journal of the American Academy of Child and Adolescent Psychiatry* 51: 202–212.e7.

American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. Washington, DC: American Psychiatric Association.

Amin M, Olu-Lafe O, Claessen LE, et al. (2011) Understanding grapheme personification: a social synaesthesia? *Journal of Neuropsychology* 5(2): 255–282.

Atherton G and Cross L (2018) Seeing more than human: autism and anthropomorphic theory of mind. *Frontiers in Psychology* 9: 528.

Baron-Cohen S, Johnson D, Asher J, et al. (2013) Is synaesthesia more common in autism? *Molecular Autism* 4(1): 40.

Bird G and Cook R (2013) Mixed emotions: the contribution of alexithymia to the emotional symptoms of autism. *Translational Psychiatry* 3: e285.

Boulter C, Freeston M, South M, et al. (2014) Intolerance of uncertainty as a framework for understanding anxiety in children and adolescents with autism spectrum disorders. *Journal of Autism and Developmental Disorders* 44: 1391–1402.

Brugha TS, McManus S, Bankart J, et al. (2011) Epidemiology of autism spectrum disorders in adults in the community in England. *Archives of General Psychiatry* 68(5): 459–465.

Castelli F, Frith C, Happe F, et al. (2002) Autism, asperger syndrome and brain mechanisms for the attribution of mental states to animated shapes. *Brain* 125(Pt 8): 1839–1849.

Causton-Theoharis J, Ashby C and Cosier M (2009) Islands of loneliness: exploring social interaction through the autobiographies of individuals with autism. *Intellectual and Developmental Disabilities* 47: 84–96.

Epley N, Akalis S, Waytz A, et al. (2008) Creating social connection through inferential reproduction: loneliness and perceived agency in gadgets, Gods, and greyhounds. *Psychological Science* 19: 114–120.

Klin A (2000) Attributing social meaning to ambiguous visual stimuli in higher-functioning autism and Asperger syndrome: the social attribution task. *Journal of Child Psychology and Psychiatry* 41(7): 831–846.

Neave N, Jackson R, Saxton T, et al. (2015) The influence of anthropomorphic tendencies on human hoarding behaviours. *Personality and Individual Differences* 72: 214–219.

Sagiv N, Sobczak-Edmans M and Williams AL (2017) Personification, synaesthesia and social cognition. In: Deroy O (ed.) *Sensory Blending: On Synaesthesia and Related Phenomena*. Oxford: Oxford University Press, pp.292–308.

Savarese RJ (2014) I object: autism, empathy, and the trope of personification. In: Hammond MM and Kim SJ (eds) *Rethinking Empathy through Literature*. New York: Routledge, pp.74–92.

Senju A, Southgate V, White S, et al. (2009) Mindblind eyes: an absence of spontaneous theory of mind in Asperger syndrome. *Science* 325(5942): 883–885.

Slavin S (2015) I have felt sympathy for objects since I was a very young child. Available at: http://adultswithautism.org.uk/autism-feeling-sympathy-for-objects/

Smilek D, Malcolmson KA, Carriere JS, et al. (2007) When '3' is a jerk and 'E' is a king: personifying inanimate objects in synesthesia. *Journal of Cognitive Neuroscience* 19: 981–992.

Sobczak-Edmans M and Sagiv N (2013) Synaesthetic personification. In: Simner J and Hubbard EM (eds) *Oxford Handbook on Synaesthesia*. Oxford: Oxford University Press, pp.222–238.

Waytz A, Morewedge CK, Epley N, et al. (2010) Making sense by making sentient: effectance motivation increases anthropomorphism. *Journal of Personality and Social Psychology* 99: 410–435.

WrongPlanet.net (2017) Does anyone else feel empathy for inanimate objects? Available at: http://wrongplanet.net/forums/viewtopic.php?t=336800