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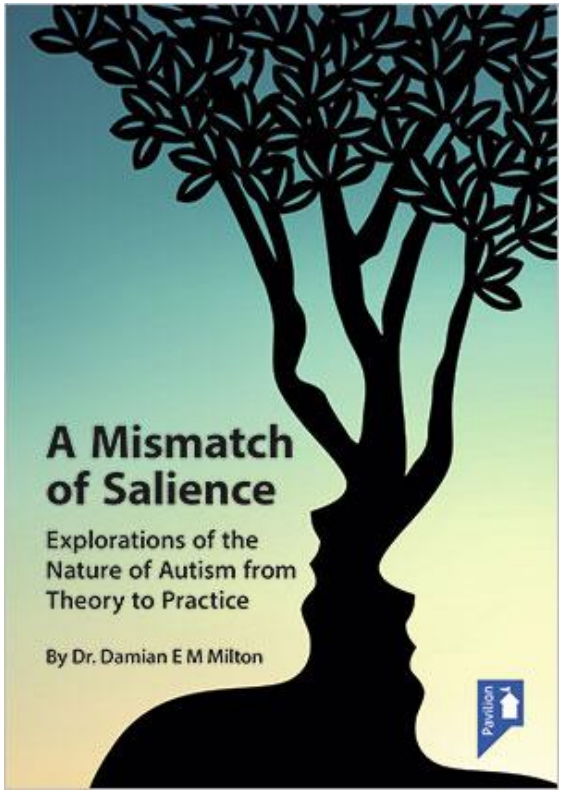
The double empathy problem - towards mutual understanding in a neurodiverse world

Dr. Damian E M Milton



- *The autist is only himself...and is not an active member of a greater organism which he is influenced by and which he influences constantly.* (Asperger, 1991: 38).

- The ‘theory of mind’ model and what it leaves out.

Early days and how the theory developed

- “Embodied sociality and the conditioned relativism of dispositional diversity” (Milton, 2014b) – reflections on work from the 1990s.
- By late 2000s had come across the work of autistic authors such as Jim Sinclair and Claire Sainsbury and had started to use the term ‘double empathy problem’ at a parent group I was a part of as a response to ideas regarding ‘theory of mind’
- First presentations on topic in 2010, and first publication in a journal in 2012.
- Yet not alone in way of thinking – see Ian Hacking, Victoria McGeer, Luke Beardon, and Rachel Cohen-Rottenberg among others.

Mutual incomprehension

- *“95% of people don’t understand me”.*
- *“Friends are overwhelming”.*
- *“Adults never leave me alone”.*
- *“Adults don’t stop bullying me”.*

- Quotes taken from Jones et al. (2012).

The ‘double empathy problem’

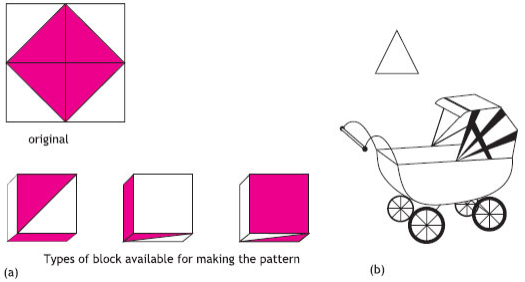
- A case of mutual incomprehension?
- Breakdown in interaction between autistic and non-autistic people as not solely located in the mind of the autistic person. The theory of the double empathy problem sees it as largely due to the differing perspectives of those attempting to interact with one another (Milton, 2012a; 2014a; Milton et al. 2018; Chown, 2014).
- Theory of autistic mind can often leave a great deal to be desired.
- Fork handles!

Dyspathy

- Cameron (2012) uses the term ‘dyspathy’ to highlight how empathy is often blocked or resisted by people.
- Such research supports the earlier social psychological theories of Tajfel (1981), which found that people felt increasing emotional connection to those deemed within their social ‘in-group’, whilst stereotyping ‘outsiders’.
- *“If we were to be continually tuning into other people’s emotions, we would be perpetually anxious or exhilarated, and very quickly exhausted. We must therefore have very efficient inhibitory mechanisms that screen out most of the emotional empathy being carried out by our brains, without us even noticing.”* (Cameron, 2012).

An ‘interest model’ of autism

- Autism and cognitive models of deficit.
- Autism and monotropism (Murray et al. 2005; Lawson, 2010).
- Attention as a scarce resource.
- Monotropic attention strategies and the ‘attention tunnel’.
- Monotropism, repetitive behaviour and interests, and ‘flow states’.



Interactional expertise

- The imitation game.
- Contributory expertise.
- How much interactional expertise is possible (Milton, 2014)?
- How much effort has been made by researchers and those designing practice models?

The evidence-base

- Sheppard et al. (2016) investigated non-autistic participants' ability to interpret the behavioural reactions of autistic people in naturalistic social interactions.
- Non-autistic participants who viewed the recorded videos were less able to guess which event the video participant had experienced for autistic than non-autistic participants, apart from for reactions to a joke.

Studies of forming first impressions

- Research has also asked a more general question of how autistic people are perceived by non-autistic others.
- If autistic people are perceived less favourably then this could result in avoidance and social exclusion, contributing to the social difficulties experienced.
- Stagg et al. (2014) found that non-autistic adults rated autistic children as less expressive and less attractive than the non-autistic children based on brief videos of them.

- Sasson et al. (2017a) carried out three studies in which they showed that non-autistic adults rated autistic adults and children less favourably than non-autistic adults and children on a wide variety of evaluative dimensions, as well as indicating reduced intentions to engage with them.
- Further research by Sasson et al. (2017b) examined the impact of providing diagnostic labelling information on the impressions formed and found this to have a positive effect.

Studies of metaperception

- Sasson et al. (2018) participants were asked to estimate how they thought others would perceive them on a wide range of personality traits, then observers judged them on the same traits after viewing a recording of them.
- They found that autistic participants were less accurate than non-autistic participants in judging how they would be perceived as others, because they overestimated how positively they would be perceived.

- Usher et al. (2018) studied impressions formed by dyads of adolescents where one member of the dyad was autistic and one was not, who engaged in a five-minute conversation.
- Autistic participants were found to be more accurate in judging whether the non-autistic partner liked them than non-autistic participants were.

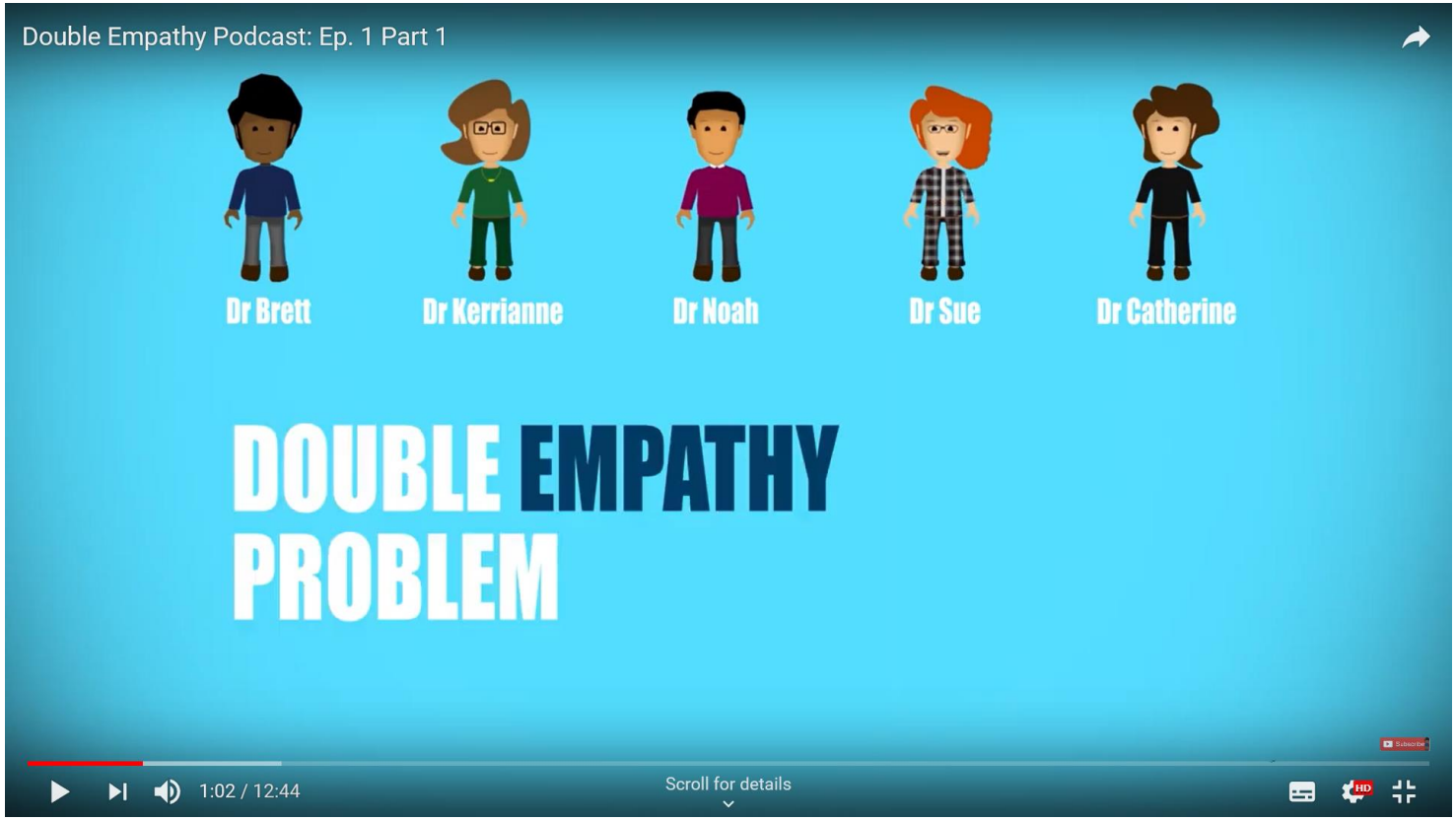
- Heasman and Gillespie (2017) investigated perceptions and misperceptions for dyads of autistic individuals and their family members.
- When asked about reasons for misunderstandings, family members tended to cite an extreme impairment in social understanding of the autistic person, while autistic participants themselves reflected on both the self and other as causes of misunderstandings.

- Overall, studies of metaperception suggest that autistic people are quite good at estimating how specific others perceive them, but may have some difficulty judging how they come across in general. Consistent with the DEP, non-autistic people may have difficulty working out how they are perceived by autistic people whom they have just met.

Interactions between autistic people

- It has been observed that autistic people appear to have a greater affinity with other autistic people than non-autistic people generally do (Chown, 2014).
- This raises the possibility that autistic people may show improved, if not superior, understanding of other autistic people and may consequently show fewer signs of 'social impairment' in the company of their in-group (Tajfel, 1981).
- This is indeed what has been shown in work carried out by Catherine Crompton at the University of Edinburgh: Autistic peer-to-peer information transfer is highly effective - Catherine J Crompton, Danielle Ropar, Claire VM Evans-Williams, Emma G Flynn, Sue Fletcher-Watson, 2020 (sagepub.com)

The Double Empathy Problem Virtual Symposium



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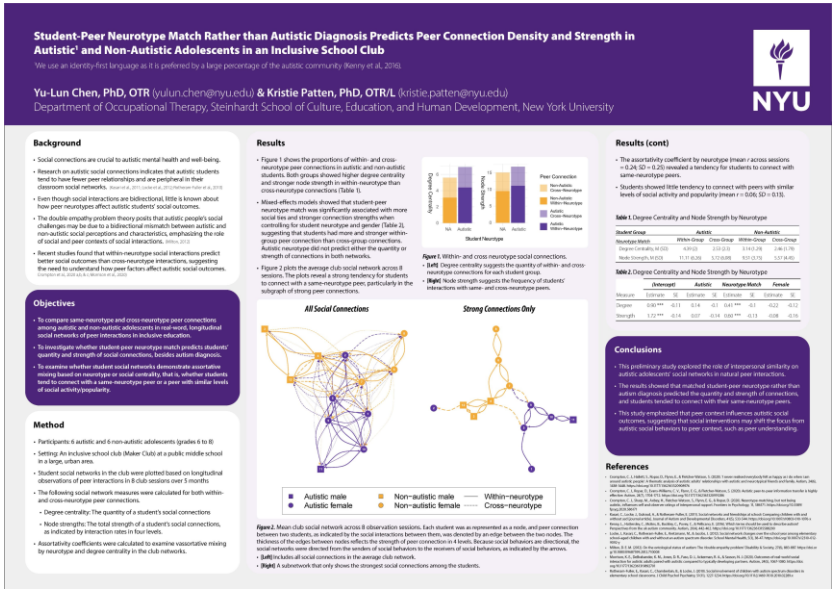
New directions

- The work of Robert Chapman, and designers such as Wendy Keay-Bright, Katie Gaudion and Jelle van Dijk.
- Crossover with neuroscientific theory regarding 'predictive coding':
- The dialectical misattunement hypothesis: *"…views psychopathology not merely as disordered function within single brains but also as a dynamic interpersonal mismatch that encompasses various levels of description*." (Bolis, 2017).
- A 'mismatch of salience'.

New directions

- Using interpretative phenomenological analysis in autism research - Katie Howard, Napoleon Katsos, Jenny Gibson, 2019 (sagepub.com)
- An Expert Discussion on Autism and Empathy | Autism in Adulthood (liebertpub.com)
- Frontiers | Mutual (Mis)understanding: Reframing Autistic Pragmatic “Impairments” Using Relevance Theory | Psychology (frontiersin.org)
- Autism and the double empathy problem: Implications for development and mental health - Mitchell - 2021 - British Journal of Developmental Psychology - Wiley Online Library
- Barriers to healthcare for autistic adults: Consequences & policy implications. A cross-sectional study | medRxiv
- Non-Autistic Children Do Not Object to Autistic-Like Behaviors – YouTube

New directions – Yo-Lun Chen and Kristie Patten; Debrander et al.



Student-Peer Neurotype Match Rather than Autistic Diagnosis Predicts Peer Connection Density and Strength in Autistic[1] and Non-Autistic Adolescents in an Inclusive School Club

We use an identity-first language as it is preferred by a large percentage of the autistic community (Kenny et al., 2016).

Yu-Lun Chen, PhD, OTR (yulun.chen@nyu.edu) **& Kristie Patten, PhD, OTR/L** (kristie.patten@nyu.edu)
Department of Occupational Therapy, Steinhardt School of Culture, Education, and Human Development, New York University

NYU

Background

- Social connections are crucial to autistic mental health and well-being.
- Research on autistic social connections indicates that autistic students tend to have fewer peer relationships and are peripheral in their classroom social networks.
- Even though social interactions are bidirectional, little is known about how peer neurotypes affect autistic students' social outcomes.
- The double empathy problem theory posits that autistic people's social challenges may be due to a bidirectional mismatch between autistic and non-autistic social perceptions and characteristics, emphasizing the role of social and peer contexts of social interactions.
- Recent studies found that within-neurotype social interactions predict better social outcomes than cross-neurotype interactions, suggesting the need to understand how peer factors affect autistic social outcomes.

Objectives

- To compare same-neurotype and cross-neurotype peer connections among autistic and non-autistic adolescents in real-word, longitudinal social networks of peer interactions in inclusive education.
- To investigate whether student-peer neurotype match predicts students' quantity and strength of social connections, besides autism diagnosis.
- To examine whether student social networks demonstrate assortative mixing based on neurotype or social centrality, that is, whether students tend to connect with a same-neurotype peer or a peer with similar levels of social activity/popularity.

Method

- Participants: 6 autistic and 6 non-autistic adolescents (grades 6 to 8)
- Setting: An inclusive school club (Maker Club) at a public middle school in a large, urban area.
- Student social networks in the club were plotted based on longitudinal observations of peer interactions in 8 club sessions over 5 months
- The following social network measures were calculated for both within- and cross-neurotype peer connections.
  - Degree centrality: The quantity of a student's social connections
  - Node strength: The total strength of a student's social connections, as indicated by interaction rates in four levels.
- Assortativity coefficients were calculated to examine vassortative mixing by neurotype and degree centrality in the club networks.

Results

- Figure 1 shows the proportions of within- and cross-neurotype peer connections in autistic and non-autistic students. Both groups showed higher degree centrality and stronger node strength in within-neurotype than cross-neurotype connections (Table 1).
- Mixed-effects models showed that student-peer neurotype match was significantly associated with more social ties and stronger connection strengths when controlling for student neurotype and gender (Table 2), suggesting that students had more and stronger within-group peer connection than cross-group connections. Autistic neurotype did not predict either the quantity or strength of connections in both networks.
- Figure 2 plots the average club social network across 8 sessions. The plots reveal a strong tendency for students to connect with a same-neurotype peer, particularly in the subgraph of strong peer connections.

Figure 1. Within- and cross-neurotype social connections.
- **[Left]** Degree centrality suggests the quantity of within- and cross-neurotype connections for each student group.
- **[Right]** Node strength suggests the frequency of students' interactions with same- and cross-neurotype peers.

Figure 2. Mean club social network across 8 observation sessions. Each student was as represented as a node, and peer connection between two students, as indicated by the social interactions between them, was denoted by an edge between the two nodes. The thickness of the edges between nodes reflects the strength of peer connection in 4 levels. Because social behaviors are directional, the social networks were directed from the senders of social behaviors to the receivers of social behaviors, as indicated by the arrows.
- **[Left]** Includes all social connections in the average club network.
- **[Right]** A subnetwork that only shows the strongest social connections among the students.

Results (cont)

- The assortativity coefficient by neurotype (mean r across sessions = 0.24; SD = 0.25) revealed a tendency for students to connect with same-neurotype peers.
- Students showed little tendency to connect with peers with similar levels of social activity and popularity (mean r = 0.09; SD = 0.13).

Table 1. Degree Centrality and Node Strength by Neurotype

Student Group	Autistic		Non-Autistic	
Neurotype Match	Within-Group	Cross-Group	Within-Group	Cross-Group
Degree Centrality, M (SD)	4.89 (1)	2.53 (2.5)	3.14 (1.24)	2.46 (1.79)
Node Strength, M (CI)	11.11 (6.26)	5.72 (0.09)	9.57 (3.73)	5.27 (4.45)

Table 2. Degree Centrality and Node Strength by Neurotype

	(Intercept)		Autistic		Neurotype Match		Female	
Measure	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Degree	0.92 ***	-0.11	0.14	-0.1	0.41 ***	-0.1	-0.22	-0.12
Strength	1.72 ***	-0.14	0.07	-0.14	0.82 ***	-0.13	-0.08	-0.16

Conclusions

- This preliminary study explored the role of interpersonal similarity on autistic adolescents' social networks in natural peer interactions.
- The results showed that matched student-peer neurotype rather than autism diagnosis predicted the quantity and strength of connections, and students tended to connect with their same-neurotype peers.
- This study emphasized that peer context influences autistic social outcomes, suggesting that social interventions may shift the focus from autistic social behaviors to peer context, such as peer understanding.

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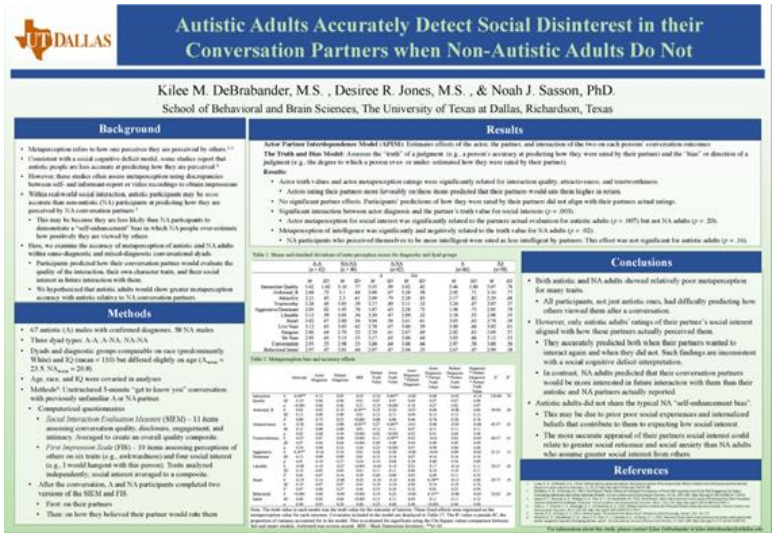

Autistic Adults Accurately Detect Social Disinterest in their Conversation Partners when Non-Autistic Adults Do Not

Kilee M. DeBrabander, M.S. , Desiree R. Jones, M.S. , & Noah J. Sasson, PhD.
School of Behavioral and Brain Sciences, The University of Texas at Dallas, Richardson, Texas

Background

- Metaperception refers to how one perceives they are perceived by others.[1,2]
- Consistent with a social cognitive deficit model, some studies report that autistic people are less accurate at predicting how they are perceived.[3]
- However, these studies often assess metaperception using discrepancies between self- and informant-report or video recordings to obtain impressions.
- Within real-world social interaction, autistic participants may be more accurate than non-autistic (NA) participants at predicting how they are perceived by NA conversation partners.[4]
- This may be because they are less likely than NA participants to demonstrate a "self-enhancement" bias in which NA people over-estimate how positively they are viewed by others.
- Here, we examine the accuracy of metaperception of autistic and NA adults within same-diagnostic and mixed-diagnostic conversational dyads.
- Participants predicted how their conversation partner would evaluate the quality of the interaction, their own character traits, and their social interest in future interaction with them.
- We hypothesized that autistic adults would show greater metaperception accuracy with autistic relative to NA conversation partners.

Methods

- 67 autistic (A) males with confirmed diagnoses, 58 NA males
- Three dyad types: A-A, A-NA, NA-NA
- Dyads and diagnostic groups comparable on race (predominantly White) and IQ (mean = 110) but differed slightly on age (A_{mean} = 23.5, NA_{mean} = 20.8).
- Age, race, and IQ were covaried in analyses
- Methods[5]: 3 unstructured 5-minutes "get to know you" conversation with previously unfamiliar A or NA partner
- Computerized questionnaires
  - *Social Interaction Evaluation Measure (SIEM)* - 11 items assessing conversation quality, disclosure, engagement, and intimacy. Averaged to create an overall quality composite.
  - *First Impression Scale (FIS)* - 10 items assessing perceptions of others on six traits (e.g., sink/swimmer) and four social interest (e.g., I would hangout with this person). Traits analyzed independently; social interest averaged to a composite.
- After the conversation, A and NA participants completed two versions of the SIEM and FIS.
  - First: on their partners
  - Then: on how they believed their partner would rate them

Results

Actor Partner Interdependence Model (APIM): Estimates effects of the actor, the partner, and interaction of the two on each persons' conversation outcomes

The Truth and Bias Model: Assesses the "truth" of a judgment (e.g., a person's accuracy at predicting how they were rated by their partner) and the "bias" or direction of a judgment (e.g., the degree to which a person over- or under- estimated how they were rated by their partner).

Results:

- Actor truth values and actor metaperception ratings were significantly related for interaction quality, attractiveness, and trustworthiness.
  - Actors rating their partners more favorably on these items predicted that their partners would rate them higher in return.
- No significant partner effects. Participants' predictions of how they were rated by their partners did not align with their partners actual ratings.
- Significant interaction between actor diagnosis and the partner's truth value for social interests (p = .003).
  - Actor metaperception for social interest was significantly related to the partners actual evaluation for autistic adults (p = .007) but not NA adults (p = .20).
- Metaperception of intelligence was significantly and negatively related to the truth value for NA adults (p = .02).
  - NA participants who perceived themselves to be more intelligent were rated as less intelligent by partners. This effect was not significant for autistic adults (p = .16).

Table 1. Means and standard deviations of metaperception scores for diagnostic and dyad groups

	A-A (n = 42)		NA-NA (n = 40)		A-NA (n = 67)		A (n=109)		NA (n=78)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Interaction Quality										
Attractiveness										
Trustworthy										
Aggressive/Dominant										
Intelligent										
Honest										
Likes Topic										
Get Along										
Conversation										
Behavioral Intent										

Table 2. Metaperception bias and accuracy effects

	Intercept		Actor Diagnosis		Partner Diagnosis		Actor Truth		Partner Truth		Actor Diagnosis * Partner Diagnosis		Actor Diagnosis * Partner Truth		Partner Diagnosis * Actor Truth		Actor Truth * Partner Truth		Actor Diagnosis * Partner Diagnosis * Actor Truth		Actor Diagnosis * Partner Diagnosis * Partner Truth		R^2
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	
Interaction Quality																							
Attractiveness																							
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Intelligent																							
Honest																							
Likes Topic																							
Get Along																							
Conversation																							
Behavioral Intent																							

Conclusions

- Both autistic and NA adults showed relatively poor metaperception for many traits.
  - All participants, not just autistic ones, had difficulty predicting how others viewed them after a conversation.
- However, only autistic adults' ratings of their partner's social interest aligned with how these partners actually perceived them.
  - They accurately predicted both when their partners wanted to interact again and when they did not. Such findings are inconsistent with a social cognitive deficit interpretation.
  - In contrast, NA adults predicted that their conversation partners would be more interested in future interaction with them than their autistic and NA partners actually reported.
- Autistic adults did not share the typical NA "self-enhancement bias".
  - This may be due to prior poor social experiences and internalized beliefs that contribute to them to expecting low social interest.
  - The more accurate appraisal of their partners social interest could relate to greater social reluctance and social anxiety than NA adults who assume greater social interest from others.

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Cultural imperialism

- Those that have power in society can determine how those in a position of powerlessness are interpreted and talked about (Young, 1990).
- Notions such as ‘ableism’ and ‘mansplaining’ can be seen as having roots in similar notions of a taken-for-granted unconscious frame of reference which renders the ‘other’ invisible.

Power

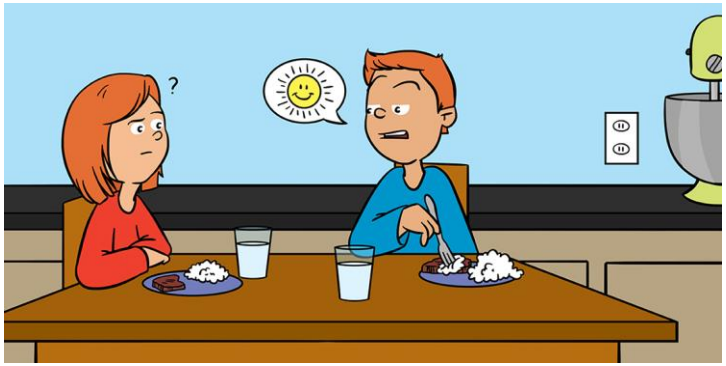
- Important to remember that the double empathy problem is situated within wider unequal (and intersectional) power relations.
- Avoiding tokenism and ceding power. Humility and rapport (tacit knowledge) building.
- Reducing imposition of social expectations.

Collaboration

- Setting the research agenda.
- Design and development of strategies and methodologies.
- Avoiding tokenism...
- The Participatory Autism Research Collective (PARC): www.PARCautism.co.uk

Frontiers for Young Minds article

- Double Empathy: Why Autistic People Are Often Misunderstood · Frontiers for Young Minds (frontiersin.org)



A couple of quotes to conclude:

- *Grant me the dignity of meeting me on my own terms…Recognise that we are equally alien to each other, that my ways of being are not merely damaged versions of yours. Question your assumptions. Define your terms. Work with me to build bridges between us.* (Sinclair, 1993).

- *When I am in an environment I feel comfortable in, with people who are kind and tolerant, and doing things I enjoy, then I am as happy as the next person. It is when people tell me I should think, speak or behave differently that I start to feel different, upset, isolated and worthless. So surely the problem is a lack of fit with the environment rather than something inside my brain that needs to be fixed?* (Victoria, 'Are You Taking Something for It?', issue 76, 12; cited in Milton and Sims, 2016).

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