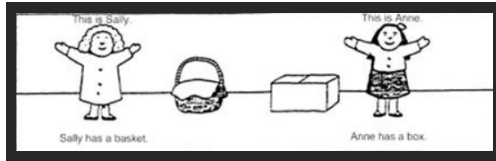# THE HISTORY OF DOUBLE EMPATHY

Theory of Mind (ToM) hypothesis

In the 1985, Simon Baron-Cohen et al. at Cambridge University tested children with Down's Syndrome, autistic children, and controls with the "Sally-Anne test." If Sally puts a marble in her basket, and Anne moves it to her box when Sally is not looking, "Where will Sally look for her marble?" 86% of the Down's group and 85% of controls answered, "The basket." Only 20% of the autistic group answered the same. Baron-Cohen called this ability, "theory of mind." He concluded that autistic children lack empathy or the ability to see things from another person's perspective. He described autism as "mindblindness," a deficit in natural "mindreading" that everyone else does effortlessly.

Autistics demonstrating Theory of Mind

Gernsbacher and Yergeau (2019) published a comprehensive literature review on research flaws of ToM. They argued that ToM failures were predicted by language development, not by autism, and listed 19 studies in the last 25 years demonstrating that autistic people have "theory of mind."

Studies Demonstrating That Autistic People of All Ages Skillfully Understand Other Persons' Intentions, Goals, and Desires

Study	Measure	Empirical finding
Aldridge, Stone, Sweeney, and Bower (2000)	Nonverbal behavior	Young, preverbal autistic children understand other people's intentions "significantly better than the normally developing" children (p. 294).
Colombi et al. (2009)	Nonverbal behavior	Autistic preschool-age children understand other people's intentions, a finding that "does not easily mesh with the line of reasoning" that claims autistic people have "deficits in the understanding of others' mental states" (p. 157).
Carpenter, Pennington, and Rogers (2001)	Nonverbal behavior	Autistic pre-school-age children are not deficient "on any measure involving the understanding of others' intentions" (p. 589).
Liebal, Colombi, Rogers, Warneken, and Tomasello (2008)	Nonverbal behavior	Autistic pre-school-age children "not only can understand another person's goal," but they are motivated to "help [that person] with that goal" (p. 229).
Falck-Ytter (2010)	Eye-tracking	Autistic pre-school-age children accurately "predict other people's action goals" in ways that are "strikingly similar" to nonautistic preschoolers (p. 376).
Berger and Ingersoll (2014)	Nonverbal behavior	Autistic pre-school-age children "are able to use social-communicative cues [experimenter's facial expressions] to understand intention" (p. 3204).
Fitzpatrick et al. (2013)	Nonverbal behavior	Autistic pre-school and early grade-school-age children "have the ability to understand intentions" and are "equivalent to typically developing children" on "social coordination tests" (pp. 1, 3, 9).
Kerr and Durkin (2004)	Spoken free response (drawings)	Autistic pre-school-age children understand "that (i) thought bubbles represent thought, (ii) thought bubbles can be used to infer an unknown reality, (iii) thoughts can be different, and (iv) thoughts can be false" (p. 646).
Li et al. (2019)	Eye-tracking and pupillometry	Autistic pre-school- and grade-school-age children are similar to typically developing children in their "unconscious sensitivity to agents' intentions" (p. 9).
Green et al. (2017	Multiple choice (photos)	Autistic grade-school-age children are as adept as nonautistic grade-school-age children at "identify[ing] ... mutually voluntary interactions between intentional agents" (p. 406) and are characterized by a "similar ... developmental trajectory" for this skill (p. 409).
Russell and Hill (2001)	Computer game, shooting game	Autistic grade-school-age children have "intact abilities in monitoring basic actions, intact abilities in reporting an intention, both for self and for another agent, and intact ability in reporting intended actions" (p. 317).
Vivanti et al. (2011)	Eye-tracking and nonverbal behavior	Autistic grade-school-age children "(a) consider situational constraints in order to understand the logic of an agent's action and (b) show typical usage of the agent's emotional expressions to infer his or her intentions" (p. 841).
McAleer, Kay, Pollick, and Rutherford (2011)	Multiple choice (videos)	Autistic adults demonstrate "no failure to recognize intent. ... In no combination of variables did the autistic and nonautistic participants perform in a markedly different manner" (p. 1058).
Cole, Slocombe, and Barraclough (2018)	Multiple choice (videos)	Autistic adults do not differ from nonautistic adults in "implicit mentalizing" to make "social decisions [that] required the intentions of the actors to be inferred" (p. 3, 10).
Channon, Lagnado, Fitzpatrick, Drury, and Taylor (2011)	Multiple choice (written stories)	Autistic adults demonstrate "greater differentiation than controls between intentional and unintentional actions" and "between actions that the protagonists believed to be likely versus unlikely to lead to negative consequences" (p. 1534).
Sebanz, Knoblich, Stumpf, and Prinz (2005)	Response time	Autistic adults understand the intentions of a "co-actor ... showing the same pattern of results as the matched control group" (p. 433).
Forgeot d'Arc et al. (2016)	Multiple choice (videos)	Autistic adults possess the same level of "spontaneous propensity to pursue goals that others pursue" as nonautistic adults possess (p. 1).
Hubert et al. (2007)	Spoken free response (videos)	Autistic adults perform equally "well in the description of basic actions" and "subjective states" as nonautistic adults, demonstrating that in autistic adults "intentionality is therefore well perceived" (p. 1390).
Ponnet, Buysse, Roeyers, and De Corte (2005)	Covertly videotaped interaction	Autistic adults do "not differ from the control adults in the ability to infer the thoughts and feelings of their interaction partner" (p. 595).

THE HISTORY OF DOUBLE EMPATHY

The double empathy problem

In 2012, an Autistic British sociologist, Damian Milton, hypothesized that the lack of understanding between autistics and allistics was mutual. He proposed that if Autistics had trouble empathizing with allistics, allistics also had trouble empathizing back, and it was really a "double empathy problem" for both sides. He noticed that whenever allistics made assumptions about Autistics, they were usually "wildly inaccurate." Because allistics are used to doing things their way, they assume the "other" people must be doing it wrong. Milton argued that autism was not pathological. Rather, the problem lies in a mismatched social interaction between two groups that have different dispositions, i.e. it was a matter of cross-cultural miscommunication.
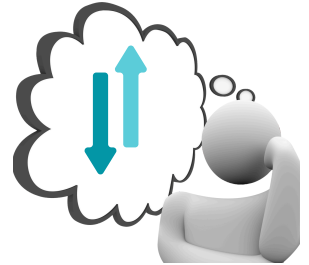
The cross-neurotype mind-reading problem

Zephyr James, an Autistic philosopher, summarized the double empathy problem elegantly (2024): "Because no one has direct access to other people's brains, everyone has to guess. It is easier to guess when you have similar backgrounds, cognitive styles, and communication styles." Cross-neurotype guessing is hard and often results in incorrect guesses-- both directions. It turns out allistics often guess wrong when "mindreading" Autistics.

Studies demonstrating allistic "mind-blindness" toward Autistics

Edey et al (2016) found "typical adults exhibit mind-blindness" towards Autistics, but not towards other "typical" persons in predicting mental states. Sheppard et al (2016) found allistics had a hard time interpreting facial expressions of Autistics correctly, but not of other allistics, even though they rated the faces equally expressive for both groups. Cheang (2024) found participants had difficulty tracking happiness and sadness in Autistic narrators, but felt anger and fear more intensely in their bodies from Autistic narrators.
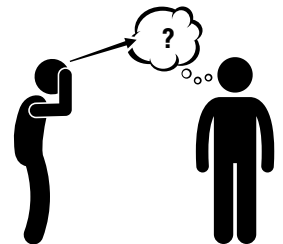
The Crompton studies on cross-neurotype communication

Crompton et al (2020b) studied accuracy of person-to-person information transfer similar to that in the game of "telephone." They found more details were shared in allistic-to-allistic groups and Autistic-to-Autistic groups, but fewer details were shared in cross-neurotype groups. Using videos from this study, Rifai et al (2022) found higher frequency of eye contact and short verbal acknowledgements (called backchanneling) in the allistic group, and corresponding high rapport ratings. They found lower eye contact and short acknowledgements in the autistic groups, but with equally high rapport ratings, indicating that autistics did not need those indicators for rapport.

In a different study, Crompton et al (2020c) also found high self and observer ratings of rapport in same-neurotype groups, but much lower ratings in cross-neurotype groups. Finally, Crompton et al (2020a) interviewed Autistic subjects and identified that they felt interacting with other Autistics was easier and more comfortable, they felt the need to mask when interacting with allistics, and they felt a sense of belonging and could be themselves with other Autistics.