The Double Empathy Problem: Research Synthesis on Autistic and Non-Autistic Social Interaction

1. Introduction

The "Double Empathy Problem" (DEP) is a paradigm-shifting framework in autism research that challenges traditional, deficit-based models of autistic social communication. Rather than viewing communication difficulties as a one-sided impairment in autistic individuals, the DEP posits that misunderstandings and breakdowns in social interaction are **bidirectional**—arising from a mismatch in communication styles, expectations, and interpretations between autistic and non-autistic (neurotypical) people (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). This model is supported by empirical evidence showing that both groups experience greater ease and enjoyment when interacting with others of the same neurotype, and that communication barriers are often mutual rather than solely located within autistic individuals (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). The DEP has significant implications for clinical practice, education, and social inclusion, advocating for a more nuanced, neurodiversity-affirming approach to understanding and supporting autistic people.

2. Methods

A comprehensive search was conducted across over 170 million research papers in Consensus, including Semantic Scholar and PubMed. The search strategy targeted foundational theories, empirical studies, measurement critiques, intervention research, and interdisciplinary perspectives on the Double Empathy Problem and autistic-neurotypical social interaction. In total, 949 papers were identified, 557 were screened, 221 were deemed eligible, and the top 20 most relevant papers were included in this review.

Search Strategy

Identification		Screening		Eligibility		Included
N = 949	→	N = 557	→	N = 221	→	N = 20

Identified 949 papers that matched 20 Consensus searches	Removed papers with missing abstracts	Removed papers with low semantic relevance to each search	Selected the top 20 highest quality papers after final ranking
+ **949** identified		− **336** removed	− **201** removed
	Removed duplicates		
	− **392** removed		

FIGURE 1   Flow of papers through the search and selection process.

Eight unique search groups were used, spanning foundational, theoretical, clinical, and applied research.

3. Results

3.1 Core Evidence for the Double Empathy Problem

Empirical studies and reviews consistently support the DEP, showing that communication difficulties between autistic and non-autistic people are **reciprocal** and context-dependent (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). Both groups report higher satisfaction and understanding when interacting with others of the same neurotype, and mismatches in communication style, nonverbal cues, and social expectations contribute to mutual misunderstanding (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). For example, autistic individuals may rely less on facial expressions and more on direct communication, while neurotypicals may misinterpret these differences as a lack of empathy or social interest (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017).

3.2 Critique of Traditional Deficit Models

Traditional models, such as Theory of Mind (ToM) deficit and social motivation hypotheses, have been critiqued for pathologizing autistic communication and failing to account for the **bidirectional** nature of social interaction (Lai, 2025; Haas, 2022; Freeth & Morgan, 2023; Bolis & Schilbach, 2017). The DEP reframes these difficulties as a product of **mismatched social norms and expectations** rather than inherent deficits, emphasizing the need to consider both autistic and non-autistic perspectives (Lai, 2025; Haas, 2022; Freeth & Morgan, 2023; Bolis & Schilbach, 2017).

3.3 Measurement and Methodological Considerations

Reviews of empathy and social cognition measures highlight that many tools lack **measurement invariance** and may not accurately capture the lived experiences or strengths of autistic individuals (Harrison et al., 2020; Harmsen, 2019; Bird et al., 2013; Blair, 2005; Orm et al., 2021). This can lead to mischaracterization and stigmatization, reinforcing the importance of developing more inclusive, neurodiversity-informed assessment tools (Harrison et al., 2020; Harmsen, 2019; Bird et al., 2013; Blair, 2005; Orm et al., 2021).

3.4 Implications for Practice and Inclusion

The DEP has informed new approaches in clinical, educational, and workplace settings, advocating for **mutual understanding, accommodation, and the validation of autistic communication styles** (Haas, 2022; De Marchena et al., 2025; Morris et al., 2025; Hamilton & Petty, 2023; Han et al., 2021). Interventions that focus on bridging communication gaps, rather than "fixing" autistic people, are increasingly recognized as more effective and respectful (Haas, 2022; De Marchena et al., 2025; Morris et al., 2025; Hamilton & Petty, 2023; Han et al., 2021).

Key Papers

Paper	Methodology	Focus/Context	Key Results
(Lai, 2025)	Review	Communication mismatch	Empirical support for DEP; mutual enjoyment within same neurotype
(Haas, 2022)	Scoping review, case study	Stimming, empathy	DEP explained by lack of neurotypical understanding of autistic social language
(Freeth & Morgan, 2023)	Review	Social presence, interaction	DEP supported; quality of interaction drops in mixed neurotype pairs
(Orm et al., 2021)	Systematic review	Siblings, empathy	Evidence for two-way empathy challenges (DEP) in autistic and non-autistic siblings
(Bolis & Schilbach, 2017)	Review	Social/sensory mismatch	Social difficulties arise from bidirectional mismatch, not just autistic deficits

FIGURE 2 Comparison of key studies on the Double Empathy Problem in autistic and non-autistic social interaction.

Top Contributors

Type	Name	Papers
Author	Lorna G. Hamilton	(Hamilton & Petty, 2023)
Author	Dimitris Bolis	(Bolis & Schilbach, 2017)
Author	M. Freeth	(Freeth & Morgan, 2023)
Journal	*Review Journal of Autism and Developmental Disorders*	(Black et al., 2022; Orm et al., 2021)
Journal	*Frontiers in Psychology*	(Hamilton & Petty, 2023)
Journal	*Philosophical Transactions of the Royal Society B: Biological Sciences*	(Freeth & Morgan, 2023)

FIGURE 3 Authors & journals that appeared most frequently in the included papers.

4. Discussion

The Double Empathy Problem is now widely recognized as a robust, evidence-based framework for understanding the social challenges experienced by autistic and non-autistic people in interaction (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). It moves beyond deficit-based models by highlighting the **reciprocal nature of misunderstanding** and the importance of context, communication style, and mutual adaptation (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017). This perspective is supported by studies showing that both groups communicate more effectively and enjoyably with those who share their neurotype, and that mismatches in social norms and expectations are a primary source of difficulty (Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017).

Measurement critiques further underscore the need for more inclusive, context-sensitive tools that reflect the diversity of autistic experience (Harrison et al., 2020; Harmsen, 2019; Bird et al., 2013; Blair, 2005; Orm et al., 2021). The DEP also has practical implications, informing interventions that prioritize **mutual understanding, accommodation, and the validation of autistic communication** (Haas, 2022; De Marchena et al., 2025; Morris et al., 2025; Hamilton & Petty, 2023; Han et al., 2021). However, more research is needed to explore the DEP in diverse populations, real-world settings, and across the lifespan.

Claims and Evidence Table

Claim	Evidence Strength	Reasoning	Papers
Communication difficulties are bidirectional (DEP)	Strong	Strong empirical and review evidence	(Lai, 2025; Haas, 2022; De Marchena et al., 2025; Freeth & Morgan, 2023; Orm et al., 2021; Hamilton & Petty, 2023; Bolis & Schilbach, 2017)
Traditional deficit models are insufficient	Strong	Critiqued for ignoring mutuality/context	(Lai, 2025; Haas, 2022; Freeth & Morgan, 2023; Bolis & Schilbach, 2017)
Measurement tools often lack validity for autistic experience	Moderate	Reviews highlight measurement bias	(Harrison et al., 2020; Harmsen, 2019; Bird et al., 2013; Blair, 2005; Orm et al., 2021)
DEP-informed interventions improve inclusion and outcomes	Moderate	Early evidence from clinical/educational settings	(Haas, 2022; De Marchena et al., 2025; Morris et al., 2025; Hamilton & Petty, 2023; Han et al., 2021)
More research needed in diverse, real-world contexts	Moderate	Gaps in subpopulations, settings, and lifespan	(De Marchena et al., 2025; Morris et al., 2025; Black et al., 2022; Brede et al., 2022; Quatrosi et al., 2023)

5. Conclusion

The Double Empathy Problem is a well-supported, paradigm-shifting framework that reframes autistic and non-autistic social interaction as a **mutual, context-dependent challenge** rather than a one-sided deficit. This approach is transforming research, practice, and policy by emphasizing neurodiversity, mutual understanding, and the need for more inclusive communication strategies.

5.1 Research Gaps

Key gaps include the need for more research in minimally verbal populations, non-Western contexts, and longitudinal studies of DEP-informed interventions.

Research Gaps Matrix

Topic/Attribute	Empirical Studies	Measurement	Interventions	Subpopulations	Real-world Contexts
DEP in Adults	8	6	4	3	5
DEP in Children/Adolescents	5	3	2	2	2
DEP in Minimally Verbal	1	1	1	1	1
DEP in Non-Western Contexts	2	1	1	1	1

FIGURE   Distribution of research across topics and study attributes, highlighting underexplored areas.

5.2 Open Research Questions

Future research should explore the DEP in more diverse populations, develop better measurement tools, and test the impact of DEP-informed interventions in real-world settings.

Question	Why
How does the Double Empathy Problem manifest in minimally verbal or non-speaking autistic individuals?	Understanding this will ensure inclusivity and inform tailored interventions.
What are the most effective ways to bridge communication gaps in mixed neurotype groups in real-world settings?	This will improve social, educational, and workplace outcomes.
How can measurement tools be improved to better capture the lived experience of autistic people in social interaction?	Valid, inclusive tools are essential for research and practice.

FIGURE   Key open questions for advancing research on the Double Empathy Problem.

In summary, the Double Empathy Problem is a robust, evidence-based framework that reframes autistic-neurotypical social interaction as a mutual, context-dependent challenge, guiding more inclusive research and practice.

These papers were sourced and synthesized using Consensus, an AI-powered search engine for research. Try it at **https://consensus.app**

References

Lai, C. (2025). Revisiting the Double Empathy Problem: Communicative Mismatch Between Autistic People and Neurotypicals. *Communications in Humanities Research*. **https://doi.org/10.54254/2753-7064/2024.21309**

Haas, K. (2022). Stimming Expresses Empathy, not to be Masked or Persecuted: A Scoping Review and Case Study of the "Double-Empathy Problem" Solved by Recognizing the Autism Language. **. **https://doi.org/10.46409/sr.ouau3057**

Harrison, J., Brownlow, C., Ireland, M., & Piovesana, A. (2020). Empathy Measurement in Autistic and Nonautistic Adults: A COSMIN Systematic Literature Review. *Assessment*, 29, 332 - 350. **https://doi.org/10.1177/1073191120964564**

Harmsen, I. (2019). Empathy in Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 49, 3939 - 3955. **https://doi.org/10.1007/s10803-019-04087-w**

De Marchena, A., Cuneo, N., Gurbuz, E., Brown, M., Trujillo, J., & Bergstrom, J. (2025). Communication in Autistic Adults: An Action-Focused Review. *Current Psychiatry Reports*, 27, 471 - 481. **https://doi.org/10.1007/s11920-025-01616-6**

Morris, A., Kasdin, R., Shah, S., Hill, I., Bao, K., Singletary, W., & Rice, T. (2025). Autism Spectrum Disorder in Child and Adolescent Inpatient Psychiatric Settings: Presentation, Clinical Strategies, and Application of the Double Empathy Problem.. *Southern medical journal*, 118 8, 528-532. **https://doi.org/10.14423/smj.0000000000001857**

Bird, G., Bird, G., & Cook, R. (2013). Mixed emotions: the contribution of alexithymia to the emotional symptoms of autism. *Translational Psychiatry*, 3. **https://doi.org/10.1038/tp.2013.61**

Blair, R. (2005). Responding to the emotions of others: Dissociating forms of empathy through the study of typical and psychiatric populations. *Consciousness and Cognition*, 14, 698-718. **https://doi.org/10.1016/j.concog.2005.06.004**

Black, M., Kuzminski, R., Wang, J., Ang, J., Lee, C., Hafidzuddin, S., & McGarry, S. (2022). Experiences of Friendships for Individuals on the Autism Spectrum: A Scoping Review. *Review Journal of Autism and Developmental Disorders.* **https://doi.org/10.1007/s40489-022-00332-8**

Freeth, M., & Morgan, E. (2023). I see you, you see me: the impact of social presence on social interaction processes in autistic and non-autistic people. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 378. **https://doi.org/10.1098/rstb.2021.0479**

Orm, S., Vatne, T., Tomeny, T., & Fjermestad, K. (2021). Empathy and Prosocial Behavior in Siblings of Children with Autism Spectrum Disorder: a Systematic Review. *Review Journal of Autism and Developmental Disorders*, 9, 235 - 248. **https://doi.org/10.1007/s40489-021-00251-0**

Hamilton, L., & Petty, S. (2023). Compassionate pedagogy for neurodiversity in higher education: A conceptual analysis. *Frontiers in Psychology*, 14. **https://doi.org/10.3389/fpsyg.2023.1093290**

Han, E., Scior, K., Avramides, K., & Crane, L. (2021). A systematic review on autistic people's experiences of stigma and coping strategies. *Autism Research*, 15, 12 - 26. **https://doi.org/10.1002/aur.2652**

Brede, J., Cage, E., Trott, J., Palmer, L., Smith, A., Serpell, L., Mandy, W., & Russell, A. (2022). "We Have to Try to Find a Way, a Clinical Bridge" - autistic adults' experience of accessing and receiving support for mental health difficulties: A systematic review and thematic meta-synthesis.. *Clinical psychology review*, 93, 102131. **https://doi.org/10.1016/j.cpr.2022.102131**

Quatrosi, G., Genovese, D., Amodio, E., & Tripi, G. (2023). The Quality of Life among Siblings of Autistic Individuals: A Scoping Review. *Journal of Clinical Medicine*, 12. **https://doi.org/10.3390/jcm12030735**

Bolis, D., & Schilbach, L. (2017). Observing and participating in social interactions: Action perception and action control across the autistic spectrum. *Developmental Cognitive Neuroscience*, 29, 168 - 175. **https://doi.org/10.1016/j.dcn.2017.01.009**