

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

What Do Our Self-Reports Tell Us? Camouflaging, Theory of Mind and Mental Health

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Isabella Byrne

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Thesis Committee:

Eileen Crehan, Ph.D (Advisor)

Kerri Modry-Mandell, Ph.D

Linda Dekker, Ph.D

Abstract

As our understanding of the strengths and limitations of both autistic and neurotypical Theory of Mind (ToM) grows, (Hull et al., 2019; D. E. M. Milton, 2012) it is increasingly relevant to explore the relationship ToM capabilities may have with other social behaviors and processes often linked to neurotype, such as camouflaging. Similarly, as both ToM capabilities and camouflaging behavior have been linked to specific adverse mental health symptoms such as depression and anxiety (Ai et al., 2024; Bora & Berk, 2016; Cassidy et al., 2020; Miller et al., 2021, 2021; Nestor et al., 2022; Washburn et al., 2016), examining the interaction between these three factors may help mitigate these negative impacts. This study investigated the relationship between camouflaging behaviors, ToM and camouflaging in a sample of autistic and non-autistic adults ages 18-35. Participants completed a series of self-report measures on ToM capacities, camouflaging behaviors, depression and anxiety. Results indicate a variety of nuanced relationships between these three concepts, distinct by autism diagnosis. Further research is needed to better understand the impact of self-report on measurement of these concepts, and to more deeply explore the subtleties of how these relationships interact with other internal and environmental factors such as stigma, to best support effective assessment and support.

Keywords: camouflaging, masking, autism, theory of mind, mental health, depression, anxiety

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As our knowledge of both autistic and neurotypical Theory of Mind (ToM) expands, (Hull et al., 2019; D. E. M. Milton, 2012) it is important to build our understanding of the ways in which ToM capabilities may interact with other social processes often linked to neurotype, such as camouflaging. Similarly, recent research on camouflaging behavior has revealed links to various adverse mental health outcomes (Ai et al., 2024; Cassidy et al., 2020; Miller et al., 2021), while both depression and anxiety have been linked to ToM capabilities (Bora & Berk, 2016; Hezel & McNally, 2014; Washburn et al., 2016). Improving our understanding of the way these processes interact, be they within an individual or an environment, may provide enhanced capacities for useful intervention and support. This study centers on the relationship between these three main factors: ToM, camouflaging behaviors, and mental health in both autistic and non-autistic populations. The key constructs of this study are described below.

Autism

One of the primary elements of this analysis is autism spectrum disorder, or as it is referred to in this study, “autism.” Autism is characterized by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) by two main characteristics: differences in social communication and social interaction, and restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2022). Restricted, repetitive behaviors may include “stimming” behaviors, such as hand and finger flicking, rocking, or tapping, as well as more general behaviors such as intense devotion to routine (Leekam et al., 2011). There is great heterogeneity in the way these criteria manifest across age and individual, which has led to the more recent understanding of autism as a collection of behaviors that exist on a spectrum (Frith & Happé, 2005). While there is evidence of a neurological component to autism (Alamdari et al., 2022), diagnoses are based on behavioral assessments, such as the Autism Diagnostic

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Observation Schedule (ADOS) (Lord et al., 2000). Estimates of the prevalence of autism worldwide vary greatly, with a median estimate of 100/10,000, or 1% of the population, though prevalence of diagnoses has increased in recent years (Zeidan et al., 2022). In addition, there are a variety of other behaviors and conditions associated with autism. Autism has been linked to an increased risk of a variety of mental health conditions, including increased depression and anxiety (Evans et al., 2024; Hao et al., 2025; Hollocks et al., 2019). While estimates of the specific rate of depression in autistic populations vary, Hollocks et al. (2019)'s systematic review indicated a lifetime prevalence of depression between 23% and 37%, while Chandrasekhar and Sikich (2015) estimate up to 53% for autistic individuals, as opposed to 8.5% of the general U.S. population, or 5% of people worldwide (National Institute of Mental Health, 2023; World Health Organization, 2023). Anxiety rates are similarly elevated, with rates of current and lifetime prevalence for adults with ASD estimated between 27% and 42% (Hollocks et al., 2019).

Camouflaging

Camouflaging, also referred to as masking, or adaptive morphing can generally be understood as the suppression or performance of behaviors in order to be perceived as more neurotypical, or less autistic in social situations (Hull et al., 2019; Lawson, 2020). Camouflaging behaviors can be engaged in consciously or unconsciously (Hull et al., 2017; Lawson, 2020). While definitions of camouflaging behaviors differ, this study will be analyzing three subtypes of camouflaging behavior, as defined by Hull et al. (2019). The first subcategory, masking, is often used as a catch-all term for camouflaging. However, in this case, masking refers specifically to suppressing or hiding a behavior or characteristic related to autism (e.g. not stimming or not monologuing) (Cook et al., 2021; Hull et al., 2019). The second subcategory of camouflaging Hull et al. (2019) define is compensation. While specific connotations of compensation in autism

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research vary (e.g. Livingston et al., 2019), in this instance it refers to, “strategies used to actively compensate for difficulties in social situations;” in other words, performing a behavior one might not otherwise perform, in response to a perceived social issue or discrepancy (Hull et al., 2019 p. 825). Examples of compensation may include making increased eye contact or employing conversational scripts (Cook et al., 2021; Hull et al., 2019). The final facet of camouflaging identified by Hull et al. (2019) is assimilation. This facet refers to, “attempts to blend into social situations in which the individual is uncomfortable, without letting others see this discomfort” (Hull et al., 2019, p. 828). This element of masking is less related to a specific set of behaviors, though these may be employed, but more to the general management of situations in which the autistic person may be uncomfortable. Assimilation behaviors would encompass examples such as avoiding social situations, strategies to manage or conceal discomfort resulting from these situations, or managing the situation with the help of a trusted party (Hull et al., 2019).

Theory of Mind

Theory of Mind (ToM) can be broadly understood as the ability to recognize and infer one’s own and others’ internal mental states and processes (Premack & Woodruff, 1978). Also termed perspective-taking or mind-reading, these inferences can include others’ knowledge and beliefs, as well as emotions, desires, and intentions (Birch et al., 2017). Although the specific definition of ToM has been subject to some debate (Apperly, 2012; Hutchins et al., 2021), ToM is typically viewed as a cognitive capacity, closely linked with empathy (Schurz, et al. 2021). A variety of tools have been designed to assess a range of capacities related to ToM, such as perceiving social cues (facial emotion, or facial/vocal recognition tasks) shared world knowledge (non-verbal picture-based tasks or text-based tasks), and interpreting actions (false-belief tasks)

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(Byom & Mutlu, 2013, p. 2). Traditionally, researchers have suggested that ToM develops gradually throughout childhood and into adolescence, as the prefrontal cortex matures (Laghi et al., 2016), although there is limited investigation of ToM development later in life (Williams, 2021). Overall, the use of ToM is seen as ubiquitous in all forms of human interaction and has been characterized as one of the defining attributes of humanity (Baron-Cohen, 2000; Birch et al., 2017).

Literature Review

Social Model of Disability

Much previous research surrounding autism has been conducted in line with what is known as the medical model of disability. In the medical model, disability is considered a medical deficiency within an individual, rendering them less able to function in society than non-disabled individuals and thus in need of cure. In this framework, medical professionals are seen as the ultimate authority on both the disabled person's experiences and the best course of action for the disabled person in question (Haegele & Hodge, 2016). This model has been critiqued on a number of fronts. Firstly, advocates have highlighted the ways in which practitioners working within this model often fail to consider the wants and needs of the disabled person in question, as well as the insights the disabled person may have into their own health or condition. In addition, this model is rooted in a deficit framework, which undermines the general perception of the capabilities of disabled people and disregards their agency in their own experiences and lives (Haegele & Hodge, 2016).

In contrast, the social model of disability was developed. According to the social model of disability, it is not individual physical or mental impairment that may lead to a disabled person's exclusion from or disadvantage within a space, but rather a failure of the social group to

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provide an inclusive or accessible environment; or, as disability studies scholar Sara Goering articulates it, “a lack of fit between a body and its social environment” (Goering, 2015, p. 134). This model prioritizes the voices and autonomy of disabled individuals and centers the onus of change on the environment, not the individual mind or body. Highlighting the autonomy and centering the lived experiences of autistic people is central in the construction of the current study. ToM, in particular, has frequently been studied through a markedly deficit-based lens. Autistic people have often been classified as severely limited in or completely lacking in ToM capabilities, often referred to as “mindblindness” (Baron-Cohen et al., 1985; Lombardo & Baron-Cohen, 2011; Williams, 2021). Acknowledging variation in the presentation and scope of ToM capabilities in autistic individuals, scholars have generally accepted the assertion that, while not a formal diagnostic criterion, cognitive deficits in ToM abilities are persistent across all autistic populations (Crehan et al., 2020). This classification has been utilized widely within psychology research; a 2018 review found 75% of the top 500 articles on Google Scholar related to autism and ToM accepted this framework (Gernsbacher & Yergeau, 2019).

However, more recent scholarship has challenged this conceptualization of autistic ToM capabilities and presented alternative perspectives on nuances of ToM as related to autism. In their review of over 50 studies, Gernsbacher and Yergeau (2019), point to several methodological and theoretical flaws in research asserting that autistic people lack ToM, namely the failures in universality, replication, and convergent and predictive validity. The authors specify that performance on ToM tasks is not a meaningful predictor of a vast array of social skills, including peer relations, social cooperation, empathy, and more, indicating that ToM tasks may not effectively measure the skills they are intended to assess (Gernsbacher & Yergeau, 2019). Quesque and Rossetti (2020) bolster this assertion in their argument that in practice, the

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majority of tools used to assess ToM capabilities do not actually require representation of another's mental state, and rather evaluate lower-level processes such as social attention or emotion recognition (Quesque & Rossetti, 2020). Crehan, et al. (2020) echo this criticism, noting lack of content validity and the existence of ceiling effects when participants have higher mentalizing capacity. Still other scholars have criticized the limited age scope of this research, where the majority of investigations of autism and ToM research have focused exclusively on preschool-aged participants (Williams, 2021). This preoccupation with preschool age participants is likely because non-autistic children typically comprehend false-belief tasks by this age. However, there is evidence to suggest that research capped at this young age does not adequately represent the ToM capabilities of autistic individuals as they present across the lifespan. Peterson and Wellman's longitudinal study, for example, indicates that autistic children's ToM capacity does steadily improve, and may follow a distinct developmental chronology, with hidden emotions emerging before false-belief (Peterson & Wellman, 2019).

The Double Empathy Problem

In alignment with this methodological pushback, alternative theoretical frameworks regarding the relationship between autism and ToM have been proposed, perhaps most prominently the double empathy problem. Introduced to the sphere of academic autism research in 2012 by Damian Milton, at its core, the double empathy problem refers to a breakdown in understanding between two people and a "disjuncture in reciprocity" (D. E. M. Milton, 2012, p. 884; 2021). The more distinct or disparate the individuals' dispositions and ways of perceiving the world, then, typically, the greater the capacity for misunderstanding. While in the more traditional framework of autism research described above, a breakdown in communication between a neurotypical and autistic person was attributed to a brain-based deficit in the autistic

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person's social capabilities (i.e. neurological deficits in ToM), the double empathy problem recenters the onus of successful interaction on both parties, where no one party is deficient, but rather a mutual misunderstanding has resulted in an interpersonal concern (D. Milton et al., 2022). Mitchell et al. (2021) argue that neurotypical people's traditional practice of unwelcoming or socially exclusionary behavior towards autistic people exacerbates this misunderstanding, as it not only isolates the autistic person from social interaction, but it prevents the neurotypical person from familiarizing themselves with autistic modes of interaction and increases risk of misperception for both parties.

Much research has been conducted on autistic individuals' capacity to understand and adapt to neurotypical norms of social interaction but little research has investigated neurotypical individuals' ability to meet autistic individuals on their own turf. A study by Edey et al. (2016) investigating adults' interpretations of autistic and neurotypical people's mental states based on animated versions of their movement patterns found that neurotypical adults were less adept at identifying mental states of autistic adults based on their animated movement patterns as compared to those of neurotypical adults. Sheppard et al. (2016) demonstrated that despite rating the faces of autistic and neurotypical participants as equally expressive, non-autistic adults were less adept at interpreting facial expressions of autistic people than their neurotypical peers. Finke and Dunn (2023) note that non-autistic individuals were also shown to be more likely to overestimate the self-absorption of autistic individuals, in addition to preferring to interact with non-autistic peers. The latter finding may in fact be linked to the double empathy problem, where those with similar forms or modes of interaction may have less propensity for misunderstanding. Indeed there is evidence to suggest those more closely matched in autistic traits are more content in the quality of their relationships (Faso et al., 2016; Heasman & Gillespie, 2019). Jones et al.

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(2024) found that non-autistic adults demonstrated the double empathy problem in their observations of interactions between autistic and non-autistic participants, where they ranked the success of conversations in both intra- and cross- neurotype pairs, rating mixed interactions as the least successful and perceiving autistic people more negatively than their conversation partners did.

In their analysis of cross-neurotype communication from an autistic perspective, Marocchini and Baldwin (2023) identified distinct differences in autistic and neurotypical communication styles, where autistic participants reported that interactions with other autistic parties allowed for unmasking, and were more comfortable, easier to understand and overall, of higher quality than interactions with neurotypical individuals. Neurotypical-autistic interactions, in contrast, were characterized by autistic participants as requiring intense self-monitoring behaviors and “over-politeness,” and their potential for difficulties with turn-taking and general misunderstandings resulting in frustration and anger (Marocchini & Baldwin, 2023). In support of the double empathy problem, Marocchini and Baldwin go on to propose distinct manners in which neurotypical and autistic ToM differ, based on cognition related to these communications. Both ToM types are identified as having difficulty understanding the other; neurotypical ToM relies heavily on nonverbal elements which may be challenging for those with autistic ToM, whereas, autistic ToM is often subject to “overinterpretation,” where incorrect intentions may be attributed to autistic people (Marocchini & Baldwin, 2023, p. 2472). These distinctions have been observed by other scholars, although often in more of a deficit-based manner. Alkire et al. (2022) for example, found that autistic and neurotypical youth performed similarly on conversational ToM tasks such as perspective-taking and recognizing common vs privileged knowledge. However, they diverged on “negative” communication ToM tasks, where a minority

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of autistic children were more prone, “to violate maxims of quantity, relevance, and manner and to interrupt their partners,” consistent with the autistic conversation norms described above (Alkire et al, 2022, p. 9).

While research and advocacy spaces have expanded understanding related to these distinct communication types, most social spaces and institutions continue to be structured in a manner that prioritizes neurotypical ToM and behaviors. Advocates and scholars have argued that in order to exist comfortably and safely in these spaces, autistic people are required to build an understanding of neurotypical norms, and often to restructure, perform, or suppress behaviors or ways of being to conform to these norms (i.e. camouflaging), a practice neurotypical people do not typically reciprocate (Finke & Dunn, 2023; Heasman & Gillespie, 2019). Autistic people are not unique in employing social camouflaging strategies; Ai et al., for example, in their analysis of the camouflaging autistic traits questionnaire (CAT-Q) with a neurotypical population, identified similar dimensions of masking to autistic populations, and related predictors of camouflaging behavior such as higher levels of self-consciousness, internalized stigma, and social comparison and anxiety (Ai et al., 2024). Miller et al., similarly, found that neurotypical, autistic, and otherwise neurodivergent populations participants reported mirroring others’ behavior to fit social norms, as well as resultant exhaustion and burnout, and negative connection to their sense of self or identity (Miller et al., 2021). However, this sample also reflects differences by neurotype; autistic participants experienced unique masking factors such as sensory suppression as well as links to suicidal ideation (Miller et al., 2021). These distinctions are consistent with the findings of Cassidy et al., which indicate a link between camouflaging autistic traits and increased lifetime risk of suicidality and thwarted belongingness (Cassidy et al., 2020).

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There is evidence to suggest that the development and impact of masking behaviors may be influenced not just by neurotype, but other identity factors as well. The relevance of sex and gender in particular, has proved slightly controversial in research related to masking (Cook et al., 2021). An emerging wave of scholarship has indicated that autistic women and girls may be more likely to engage in camouflaging strategies, such as masking and compensatory behaviors (Alaghband-rad et al., 2023; Dean et al., 2017; Lai et al., 2019; Lockwood Estrin et al., 2021; Tubío-Fungueiriño et al., 2021; Wood-Downie et al., 2021). However, this finding is not universal; Evans et al. (2024) for example, found no links between masking and gender identity and/or sexual orientation. Pearson and Rose, on the other hand, argue that while it is important to understand distinct camouflaging behaviors of women and girls as they relate to diagnosis discrepancies, it is equally important not to gender this behavior as a whole, and lose sight of the impact masking may have on autistic people across the gender spectrum (Pearson & Rose, 2021).

In addition, both short and long term consequences of camouflaging have been identified; from exhaustion and disconnection from the self, as noted above (Bradley et al., 2021; Evans et al., 2024; Hull et al., 2017), to isolation and poor mental and physical health (Bradley et al., 2021; Radulski, 2022), including connections to increased anxiety and depression (Cage & Troxell-Whitman, 2019; Evans et al., 2024), low self-esteem, and past interpersonal trauma (Evans et al., 2024). In their study of autistic teenagers, Chapman et al. (2022) address the potential interconnected or cyclical nature of mental health and camouflaging behaviors, where participants reflected that anxiety and/or depression or low mood may lead to masking behaviors and simultaneously both of these states may be exacerbated, triggered or prolonged by the effort of masking, echoing reports of affected self-identity and potential suicidality (Chapman et al., 2022).

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The Minority Stress Model

Recent research has framed masking as a logical response to stigma, born as a survival instinct in potentially traumatizing situations (Cleary et al., 2023; Pearson & Rose, 2021).

Numerous scholars have pointed to the potential impact of stigma and discrimination in mental health concerns related to autism and masking behaviors. Cleary et al. (2023) highlight how, because of their minority status, autistic people experience discrimination in settings such as healthcare, education, employment and in the media, including lack of opportunity or inclusive environments, or outright bullying. This experience is common across marginalized groups. Stigma and discrimination related to minority status can have a potent impact on both the external and internal experiences of marginalized populations; across populations, experiences such as disability-based discrimination, lack of access, and external stressors can affect potential mental health concerns, such as increased anxiety, depression, and suicidality (Rivera & Bennetto, 2023).

Ilan Meyer proposed a model to better understand the internal impacts of facing stress and discrimination on health, referred to as the Minority Stress Model. Initially developed to make sense of higher rates of mental health issues among gay men, as compared to their straight peers, the minority stress model posits simply that, “stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems” (Frost & Meyer, 2023; Meyer, 1995, 2003, p. 1). These stressors can be divided into two categories: distal and proximal. Distal stressors include external forces such as oppressive legislation, life events, experiences of discrimination such as microaggressions, and general lack of access. Proximal stressors, on the other hand, refer to more internal processes, such as rumination, internalized stigma, and attempts to conceal the relevant identity (Frost & Meyer, 2023). This model has been

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expanded in the years since its inception to incorporate the experiences of the broader LGBTQ+ community, such as trans and nonbinary people (Ellis et al., 2020; Matsuno & Budge, 2017), as well as discrimination-based stress related to race and ethnicity (Arbona & Jimenez, 2014; Buckner et al., 2022) disability (Lund, 2021), and intersecting marginalized identities (Bowleg et al., 2023; Cyrus, 2017).

Botha and Frost (2020) applied the Minority Stress Model specifically to the discrimination faced by autistic people, evaluating a variety of minority stress factors such as internalized stigma, victimization and everyday discrimination, expectation of rejection and masking behaviors. This study revealed that, even when controlling for general stress, these minority stress factors significantly predicted increased psychological distress and poor mental wellbeing (Botha & Frost, 2020). In their study of trans and nonbinary autistic adults, White et al. (2024) found that autistic minority stress such as everyday anti-autistic discrimination predicted anxiety, depression and post-traumatic stress.

The Minority Stress Model provides a helpful framework to understand the compounding stressors that may be influencing autistic individuals mental and physical health, especially as relates to discrimination and stigmatization. It is relevant to note, however, that because autism is diagnosed based largely on modes of social interaction, and discrimination and related stress are enacted in social environments, there may be a self-confounding element, where it is difficult to identify how much any stressor or personal factor may be impacting the experience. Because the diagnostic criteria for autism are so closely linked with modes of interaction, it is possible that autistic individuals may be subject to somewhat unique processes in the ways they interact with both distal factors (e.g. social interactions) and proximal factors (e.g. attempts to hide identity, internalized stigma). Mental health stressors encompass a variety of neurological and

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environmental factors; breaking down the interactions between these factors, especially amongst autistic populations, is a complex task.

The specific relationship between camouflaging, ToM and mental health remains relatively unstudied. While previous research has addressed potential links between camouflaging and mental health and ToM and mental health respectively, little research has explored these two concepts in relation to each other. Livingston et al. (2019) touch on this link in their discussion of autism and compensation strategies. While they describe compensation as distinct from camouflaging behaviors, the conceptualization portrayed in this study largely aligns with that presented by Hull et al. (2019); that is, developing a strategy to perform a certain behavior in order to be perceived as more neurotypical. For example, someone might learn that when a person is laughing while saying a non-literal statement, it is likely a joke, and thus laughing would be an appropriate response in such a situation. In this conceptualization, compensatory behaviors are characterized specifically as a response to navigating cognitive deficits in ToM capabilities, or as “alternative cognition to circumvent underlying cognitive difficulties,” which they classify as distinct from camouflaging behavior (Livingston et al., 2019, p.102). The autistic adults in the study described were divided into “high compensators,” or individuals with lower ToM scores, and lower ADOS scores, and “low compensators,” or individuals with similarly low ToM scores but higher rates of observed autism related behaviors. The results indicated that IQ, executive functioning and anxiety all appear to be related to compensatory processes in participants with low ToM scores, where “high compensators” had higher executive functioning, IQ and anxiety than “low compensators.” This relationship did not hold true for those with higher ToM scores (Livingston et al., 2019).

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These findings indicate a relationship between ToM scores and compensatory camouflaging behaviors, as well as anxiety, at least among participants with low ToM scores. While Livingston et al. present these findings in causal manner (i.e. lower ToM abilities necessitate compensatory behaviors) the heterogeneity of their sample indicates that this is not necessarily the case. Additionally, as Marocchini and Baldwin (2023) point out, this framing represents a deficit-based model which privileges neurotypical routes to comprehension, framing “compensation” as a strategy to conceal or make-up for a persistent cognitive deficit, as opposed to alternative pathway to learning and enacting social information and strategies. With this in mind, it is unclear the direct relationship ToM capabilities may have with camouflaging or compensatory behaviors based on Livingston et al.’s study.

Problem Summary

Understanding of the strengths and limits of both autistic and neurotypical ToM has been expanded and reshaped in recent years. As knowledge about this central cognitive capacity develops, it is increasingly relevant to understand the relationship distinct ToM capabilities may have with other social behaviors and processes that have been connected to neurotype, such as camouflaging. In addition, research on camouflaging and masking behavior reveals links to a variety of harmful mental health outcomes (Ai et al., 2024; Cassidy et al., 2020; Miller et al., 2021; White et al., 2024), while a connection has been drawn between depression and anxiety and ToM capabilities (Bora & Berk, 2016; Hezel & McNally, 2014; Washburn et al., 2016). Investigating the way in which these factors (ToM, camouflaging and mental health) interact, be they within an individual or an environment, may help mitigate these negative mental health outcomes and provide more effective assessment and support.

The Current Study

The current study aimed to investigate the relationship between ToM and camouflaging traits, to gain a better understanding of how these two processes may interact in both autistic and neurotypical adults. Further, this study aimed to explore the potential link between these two processes and mental health, as represented by anxiety and depression scores. The research questions were as follows:

- 1) How are self-reports of Theory of Mind (ToM) and camouflaging behaviors related to each other in adulthood?
- 2) How does this relationship differ with the presence of an autism diagnosis?
- 3) How does this relationship differ based on anxiety and depression scores?

In response to Question 1, and based on the idea that implementing behaviors to blend in with peers may require some level of understanding of others' thoughts, Hypothesis 1 was developed.

Hypothesis 1: CAT-Q scores will be positively correlated with ToMI scores.

In response to Question Two, and based on the knowledge that both autistic and non-autistic populations engage in camouflaging behaviors to varying degrees (Ai et al., 2024; Miller et al., 2021) the following hypothesis was developed.

Hypothesis 2: Although the overall CAT-Q and ToMI scores will be more elevated for the autistic group, the correlation coefficient will be similar.

In response to Question 3, and based on the knowledge that camouflaging behaviors have been shown to be associated with anxiety and depression scores (Cage & Troxell-Whitman, 2019; Evans et al., 2024; Livingston et al., 2019), the following hypothesis was formed.

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Hypothesis 3: CAT-Q scores will be positively related with anxiety and depression symptoms and ToMI scores will be positively related to depression and anxiety, and the correlation coefficient will be similar.

Methods

This study was conducted as part of a larger study on healthy relationships at Tufts University through the Crehan Lab, in collaboration with Boston Children’s Hospital. Funding was provided by the NIMH. Data collection took place from September 2023 to February 2025.

Participants

Adults ages 18-35 years old with and without an autism diagnosis were recruited for this study. All participants were fluent in English, and based in the United States. Participants were recruited through fliers, outreach to autism-based organizations, social media and snowball sampling techniques. A total of 64 individuals completed all steps of this study, including 20 autistic participants and 44 non-autistic participants (Table 1). Of these participants, 34 identified as female/woman, 21 as male/man, and 9 as non-binary, genderqueer or another identity (Table 2). In addition, 16 of participants identified as Asian, 2 as Black or African-American, 35 as White, 2 as Hispanic/Latinx and 8 as more than one race, and one chose not to specify (Table 3).

Measures

Theory of Mind Inventory: Self Report—Adult (ToMI:SR-Adult)

To assess ToM capabilities, each participant completed this self-report questionnaire. This measure consists of 60 statements related to a component of ToM (e.g. “If I heard a waitress say to a coworker ‘Hey, the ham sandwich left me a big tip!’, I would understand that the waitress was referring to a customer who had ordered a ham sandwich”). The participant is asked to mark

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their response on a continuum from “definitely not” to “definitely,” which is converted to a score from 0 to 20. This measure includes three subscales for ToM capacities, designated as early, basic and advanced. The TOMI:SR-Adult has demonstrated sufficient reliability and validity, including internal consistency, accuracy of classification, and contrasting-groups (Hutchins et al., 2012, 2021). This measure is well-suited to this research in that it includes real-world applications of ToM, as opposed to previous ToM measures whose ecological validity has received criticism (Gernsbacher & Yergeau, 2019; Hutchins et al., 2021; Quesque & Rossetti, 2020). In addition, the self-report nature allows participants to provide insight into their own experiences related to ToM, centering agency within the participant, concurrent with the social model of disability. In this sample, 32 participants completed a 58 item version of this questionnaire, with subcategory questions differing slightly from the 60-item model. Due to this variation, two items equal to each participant’s mean score on the 58-item questionnaire were added to their overall score, so each question was accurately weighted in comparison to the 60-item version. In addition, due to the variation in subcategory questions, only overall ToMI scores were used in analysis.

Camouflaging Autistic Traits Questionnaire (CAT-Q)

Camouflaging behaviors were measured using the full CAT-Q scale. This measure consists of 25 statements such as, “I have researched the rules of social interactions to improve my own social skills”. Participants respond on a seven-point Likert scale ranging from strongly disagree to strongly agree, with scores ranging from 25 to 175. This measure includes three subscales of camouflaging: Masking (concealing a behavior), Compensation (performing a behavior in response to social difficulty), and Assimilation (“strategies that reflect trying fit in with others in social situations”), as well as an overall score (Hull et al., 2019). The CAT-Q has performed well

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on assessments of reliability and validity, showing high internal consistency and acceptable test-retest reliability (Hull et al., 2019).

Generalized Anxiety Disorder 7-Item Scale (GAD-7)

The first of two measures to assess participants' mental health was the GAD-7, looking at participants' anxiety symptoms. This measure asks participants how often in the past two weeks they have been bothered by 7 items, such as, "trouble relaxing," or "Not being able to stop or control worrying." Participants respond on a scale of 0-3, ranging from "Not at all" to "Nearly every day." Participants scores range from zero to 21, or minimal to severe anxiety levels. In previous examinations this measure has demonstrated good reliability and criterion, construct, factorial, and procedural validity (Johnson et al., 2019; Spitzer et al., 2006).

Patient Health Questionnaire (PHQ-9)

The second measure of participants' mental health was the PHQ-9, a self-report measure of depressive symptoms. This measure asks participants how often in the last two weeks they have experienced various symptoms, including, "little pleasure or interest in doing things" and "feeling tired or having little energy." Responses are recorded on a scale from 0-3, with response options including, "not at all," "several days," "more than half the days," and "nearly every day". The PHQ-9 has been shown to be a reliable and valid measure in criteria-based diagnoses of depressive disorders and evaluations of depression severity (Kroenke et al., 2001).

Autism Diagnostic Observation Schedule (ADOS-2)

Participants' autism diagnosis status was determined through the administration of the ADOS-2 by a qualified clinician. This is a widely used observation-based diagnostic tool that has demonstrated good diagnostic accuracy and interpersonal objectivity (Kamp-Becker et al., 2018;

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Lord et al., 2000). While participants received a specific score, for the purpose of this study these scores were used simply in their diagnostic capacity, to sort participants into categories of spectrum, or non-spectrum.

Results

To determine normality, descriptive statistics for skewness and kurtosis, histograms, and p-p plots were calculated for total ToMI scores, PHQ-9 scores, GAD-7 scores, and CAT-Q scores, as well as each CAT-Q subcategory, including masking, assimilation, and compensation. CAT-Q scores, PHQ-9 score and GAD-7 scores were slightly skewed, but overall sufficiently normally distributed to conduct further analysis without transformation. ToMI scores were not normally distributed when calculated for the overall study population; however, when split into groups of spectrum and non-spectrum participants, the scores were sufficiently normally distributed for each group. Thus, correlations including ToMI scores were conducted with autistic and non-autistic participants separately.

Hypothesis 1: CAT-Q scores will be positively correlated with ToMI scores.

Due to the distribution of the ToMI scores, analyses were split by neurotype (autistic vs. non-autistic), described in further detail in relation to hypothesis 2.

Hypothesis 2: Although the overall CAT-Q and ToMI scores will be more elevated for the autistic group, the correlation coefficient will be similar.

Measures of central tendency were calculated to determine whether CAT-Q and ToMI were more elevated for the autistic group. In regard to the CAT-Q scores, the mean score of autistic participants ($M= 124, SD=20.2$) was 25 points higher than that of the non-autistic population ($M = 99, SD= 23.4$) (Table 4), indicating more self-reported camouflaging for autistic people.

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Measures of central tendency for ToMI scores, however, indicated that ToMI scores for non-autistic participants ($M= 17.4$, $SD= 1.5$) were higher than those of autistic participants ($M= 14.9$, $SD= 3.8$) (Table 5), indicating lower overall self-reported ToM capacity for the autistic sample.

This indicates that the initial assumption of hypothesis 2, that overall CAT-Q and ToMI scores will be more elevated for autistic participants, is partially incorrect.

To further investigate *Hypothesis 2*, Pearson's Correlation coefficients were computed to assess the linear relationship between CAT-Q and ToMI scores, for both autistic and non-autistic participants. Coefficients were computed to evaluate the relationship between total CAT-Q scores and ToMI scores, as well as the relationship between ToMI scores and each CAT-Q subscore (masking, compensation and assimilation).

Autistic Participants:

Among the autistic participants, there was no correlation between total ToMI scores and total CAT-Q scores, CAT-Q compensation scores, or CAT-Q assimilation scores. However the analyses did indicate a moderate to strong positive correlation between total ToMI scores and CAT-Q masking scores among this group ($r = .511$, $p < .05$) (Table 6).

Non-Autistic Participants:

Among the non-autistic population, analyses indicated a weak negative correlation between total ToMI scores and total CAT-Q scores ($r = - 0.362$, $p < .05$). In addition, analyses indicated a correlation between all CAT-Q categories except masking; that is a weak negative correlation between and ToMI scores and CAT-Q assimilation scores ($r = - 0.39$, $p < .01$) and a weak negative correlation between ToMI scores and CAT-Q compensation scores ($r = - 0.416$, $p < .01$) (Table 7).

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These analyses indicate that contrary to hypothesis 2, there is a distinction between the results of the autistic participants and non-autistic participants with only a small positive correlation between ToMI scores and CAT-Q masking for autistic participants, in comparison to a negative correlation between ToMI scores and overall CAT-Q scores, as well as several subscores.

Hypothesis 3: CAT-Q scores will be positively related with anxiety and depression symptoms and ToMI scores will be positively related to depression and anxiety, and the correlation coefficient will be similar.

To assess this hypothesis, further Pearson's Correlation coefficients were computed to assess the linear relationship between CAT-Q and ToMI scores, and mental health assessments, for both autistic and non-autistic participants. Coefficients were computed to evaluate total TOMI scores, total CAT-Q scores, and each CAT-Q subscore (masking, compensation and assimilation) in relation to mental health measures GAD-7 and PHQ-9. These analyses were split between autistic and non-autistic participants. Four participants did not have complete PHQ-9 scores, and were thus excluded from that portion of the analysis.

Autistic Participants:

Among the autistic participants, total CAT-Q scores were not correlated with GAD-7 or PHQ-9 scores (Table 8 and Table 10). Of the CAT-Q subcategories, two results indicated a correlation: CAT-Q compensation scores were moderately negatively correlated with PHQ-9 scores ($r = -.504, p < .05$) (Table 10), while CAT-Q assimilation scores were moderate to strongly negatively correlated with GAD-7 scores ($r = -.601, p < .01$) (Table 8). In addition, among the autistic participants, ToMI scores were not related to GAD-7 scores (Table 12), but were moderately negatively correlated with PHQ-9 scores ($r = -.791, p < .001$) (Table 14).

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Non-autistic participants:

Among the autistic participants, no CAT-Q scores were correlated with GAD-7 or PHQ-9 scores (Table 9 and Table 11). However, results indicated ToMI scores were related to both mental health measures, with a moderate negative correlation between the PHQ-9 and ToMI scores ($r = -.54, p < .001$) (Table 13), and a weak negative correlation between the GAD-7 and ToMI scores ($r = -.389, p < .01$) (Table 15).

Contrary to hypothesis 3, all correlations in this analysis were negative. Additionally, there is a distinction between the results of the autistic participants and non-autistic participants, with the GAD-7 scores only showing a relationship in the non-autistic population. However, in accordance with hypothesis 3, the ToMI scores were similarly correlated with depression scores in both populations, though more strongly for the autistic sample (Table 14 and Table 15).

Finally, a forward stepwise linear regression was used to identify predictors of CAT-Q scores, out of the potentially related variables: ADOS, ToMI, PHQ-9 and GAD-7.

Based on this model, both ToMI and PHQ-9 scores were not predictive factors of CAT-Q scores. However, this analysis indicates ADOS was a predictive factor of CAT-Q scores, ($F = 12.934, p < .001$). Approximately 18.2% of the variance in CAT-Q scores was accounted for by ADOS score. In addition to autism diagnosis, GAD-7 scores were found to be a predictive factor of CAT-Q scores ($F = 9.196, p < .001$), with a combined R-squared value of .244, indicating that a combined model of ADOS and GAD-7 was the most accurate predictor of CAT-Q scores (Table 16).

This process was repeated for each of the CAT-Q subcategories, to assess whether this relationship was primarily based on any specific type of camouflaging behavior. This analysis

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indicated that only ADOS was predictive of compensation camouflaging behaviors ($F = 15.521$, $p < .001$) (Table 17). A combined model of GAD-7 scores ($F = 14.293$, $p < .001$) and ADOS ($F = 17.691$, $p < .001$) accounted for the most variance in camouflaging assimilation behaviors, at 33.4% (Table 18). A group comparison ANOVA analysis was conducted to evaluate predictors of masking behaviors, which found similar results, with ADOS and GAD scores related to CAT-Q masking scores, and no significant group differences between autistic and non-autistic populations (Table 19).

In addition, this process was repeated with each of the collected demographics, including race and gender, to rule out any demographic related impact. Sex, gender and race were not found to be predictive of camouflaging behaviors.

Discussion

This study was designed to investigate the relationship between ToM, camouflaging behaviors, and mental health in autistic and non-autistic young adults, through analysis of self-report measures. This study posited that 1) CAT-Q scores will be positively correlated with ToMI scores, 2) that although the overall CAT-Q and ToMI scores will be more elevated for the autistic group, the correlation coefficient will be similar, and 3) that CAT-Q scores will be positively related with anxiety and depression symptoms and ToMI scores will be positively related to depression and anxiety, and the correlation coefficient will be similar. However, the analysis revealed these relationships were not entirely consistent with these hypotheses, and instead presented a more nuanced perspective on the relationship between various aspects of camouflaging, mental health, and ToMI and how they take place amongst autistic and non-autistic populations.

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Contrary to hypothesis 2, among the non-autistic population, ToMI was found to be negatively correlated with compensation, assimilation, and overall CAT-Q scores, indicating that reports of increased perception of others' mental state is linked to lower rates of performing behaviors to blend in with peers. As there is little research on ToM in adulthood, especially in neurotypical populations, it is difficult to identify with certainty the factors at play in this relationship. One potential explanation could be related to the distinction that cognitive capacity to comprehend another's mental state is not necessarily the same as valuing or prioritizing another's mental state, and may not always lead to more prosocial behavior. Some scholars, such as Preckel et al. (2018) highlight a distinction between ToM abilities, which are considered to pertain to others' thoughts and intentions and empathy, which pertains to the sharing of others' emotions and may lead to emotional responses such as compassion or empathic distress. Schurz, et al. (2021) in their meta-analysis of neuroimaging of ToM and empathy topics echo the complex and related nature of these cognitive processes, that may operate both independently and as a conjoint ToM and empathy domain. However, the work of scholars such Wang et al. (2022) has demonstrated that both ToM and empathic traits are associated with more prosocial behaviors, and it seems unlikely that this distinction would have such a profound effect on only the non-autistic participants.

Another likely explanation is that this relationship was only found in non-autistic people, which may indicate that higher ToM scores are associated with a neurotype that requires fewer camouflaging behaviors to be accepted by a similarly neurotypical majority (i.e. non-autistic people). While the findings of this study indicate that, consistent with previous research, both autistic and non-autistic populations may engage in camouflaging behavior (Ai et al., 2024; Miller et al., 2021), overall camouflaging scores were elevated for autistic participants and,

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indeed, the highest predictor of camouflaging behavior was autism diagnosis. This finding echoes the general definition of camouflaging as defined in the validation of the CAT-Q, as, “strategies used to compensate for or mask autistic characteristics during social interactions” (Hull et al., 2019, p. 819). This finding is also consistent with previous research indicating that autistic individuals may feel intense pressure to conform to neurotypical models of interaction (Botha & Frost, 2020; Chapman et al., 2022; Cleary et al., 2023, Hull et al., 2017; Pearson & Rose, 2021; Radulski, 2022). This pressure is enacted not just in social interaction, but in the medical model-based framing of much autism research and intervention, such as that described by Livingston et al. (2019), where compensation skills are seen simply as a cover for cognitive deficits as opposed to simply an alternative social strategy or mode of interaction.

However, the findings from this study indicate the story is not as simple as recognizing the unique experiences and strategies of autistic individuals. While autism diagnosis was the primary predictor of camouflaging behavior, the best model included anxiety scores, indicating that it is not simply the presence of autistic behaviors that may be linked to higher rates of camouflaging, but autism in combination with higher stress levels. Whether higher anxiety levels may lead an individual to greater preoccupation with modifying their behavior to fit in, or camouflaging behaviors themselves may be leading to stress, or a combination, remains unclear. Indeed, this relationship may be an example of Chapman et al.’s (2022) model of cyclical camouflaging behaviors.

In addition to the impact of stress, this study revealed a variety of links between ToM, camouflaging and mental health that may be unique, or particularly salient in autistic populations. Within the autistic sample, each camouflaging subcategory revealed a unique link to another factor in the study; for example, while ToMI scores were not associated with overall

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CAT-Q scores, they were highly correlated with masking scores. This finding indicates that while understanding of others' mental states may not be linked to increased enactment of behaviors to be read as more neurotypical, it may be related to suppression of behaviors to avoid being perceived as autistic. This aligns with the finding in Miller et al.'s (2021) study of neurotypical and autistic masking, where autistic participants reported unique masking factors, such as sensory suppression.

Meanwhile, the remaining two subcategories of camouflaging behaviors revealed a distinct relationship to the mental health variables. Anxiety scores were highly positively correlated with assimilation, consistent with the stress model described above. The specific relationship with assimilation may also indicate an increased vigilance- whereas compensation behaviors may be engaged in response to a perceived issue, assimilation behaviors refer to a general effort to fit in and thus could be linked to greater general unease in social situations. In addition, camouflaging has generally been linked to increased exhaustion and disconnection from the self (Bradley et al., 2021; Evans et al., 2024; Hull et al., 2017) and the discomfort management and feeling of being unable to be one's authentic self associated with assimilation (Hull et al., 2019, Hull et al., 2017) may be linked to increased stress levels.

Depression scores, on the other hand, were highly negatively correlated with compensation scores, and highly negatively correlated with ToMI scores. The negative correlation between ToM and depression scores was also found in the non-autistic population, and is consistent with previous literature indicating that depression is linked to lower ToM capabilities in the general population (Bora & Berk, 2016; Nestor et al., 2022; Wolkenstein et al., 2011). The negative relationship between compensation and depression unique to the autistic sample could perhaps be attributed to decreased levels of cognitive control and motivation that

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have been associated with depression (Grahek et al., 2019). A key symptom of depression is tiredness, fatigue, or low energy, or decreased efficiency (American Psychiatric Association, 2022; Tolentino & Schmidt, 2018), and masking can be exhausting (It is possible that camouflaging, which requires the performance of an additional behavior or strategy that one might not otherwise perform, may require higher levels of energy and/or motivation, and depressed autistic individuals may be less likely to engage in this behavior.

However, these findings related to compensation did not hold true for the non-autistic population, indicating that there may be additional factors impacting this relationship within the autistic population. Indeed, though rates of depression are much higher among autistic populations (Chandrasekhar & and Sikich, 2015; Han et al., 2019; Hollocks et al., 2019) as Hao et al. (2025) highlight, the systems and processes underlying these rates remain unclear. The findings of Hao et al. (2025) indicate that depressed autistic participants were more conscious of their own autism symptoms, and less satisfied with their social interactions than their non-depressed peers, though this distinction was not perceived by clinicians. This again highlights the nuanced nature of stress as it relates to autism. As clinical criteria for autism are situated in the behavioral and social realm, understanding the degree to which any behavior or reaction may be facilitated simply by the presence of autism, by related mental health stressors like depression and anxiety, self-perception, threat or presence of discrimination (i.e. Minority Stress) and the intertwining of these factors and more, remains incredibly complex. While the nuances of these results provide insight into some of the complexities in the relationship between ToM capacities, camouflaging and mental health, perhaps the greatest takeaway is simply the variation in the results. This variation suggests there is no simple causal relationship between these factors and

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careful assessment is required to thoughtfully address the potentially harmful elements that may arise.

The nuances in these results may be especially relevant to practitioners when considering interventions to support both autistic and non-autistic individuals. Camouflaging behaviors consist of a collection of strategies that may be useful across various circumstances, especially as most modern environments are designed for, privilege, and even enforce neurotypical norms (Alaghband-rad et al., 2023; Cleary et al., 2023; Lawson, 2020). However, as the current study affirms, camouflaging can be associated with a high mental health cost. This study adds a further dimension, indicating that this relationship varies within subtypes of camouflaging behaviors, and thus, that greater context is needed to tailor effective supports. Steps such as acknowledging the value of distinct theory of mind types and evaluating camouflaging behavior with measures like the CAT-Q can provide clinicians with a starting point to understand the complex intersection of cognitive, social and environmental factors that may impact an individual's mental health. Further, the links between specific camouflaging subcategories and theory of mind and mental health factors demonstrated in this study may provide insight into particular areas worthy of further investigation (e.g. discussion of assimilation behaviors in those with high anxiety scores, or looking out for depression symptoms in those with low compensation scores).

These clinical recommendations also call on the theoretical models proposed at the start of this paper; in particular, the social model. In alignment with the social model, the ideal intervention would be a bridging of the gap identified by the double empathy problem through the creation/adaptation of spaces where both neurotypical and autistic ToM and all related social behaviors are valued and respected. In addition, as we work towards this ideal, contextualizing camouflaging behaviors as strategies to navigate a neurotypically-dominated society to be

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employed as necessary and safe as determined by the individual employing them, and prioritizing individuals' voices in reporting on and shaping their own experience, may help mitigate the variety of stressors individuals may face.

Limitations and Future Directions

There are several notable factors that may limit the scope of these findings. Firstly, this study only examined the scores of 64 total participants, and only 20 met the criteria for autism. This small sample size may reduce the generalizability of the results, especially among the autistic participants. Similarly, the demographic make-up of this sample was not representative of the broader population, with a majority of White and Asian participants, and other racial and ethnic groups greatly underrepresented. Future research should investigate the experiences of a greater variety of racial and ethnic groups, especially as the intersection of autism and other marginalized identities may have a relevant impact on dynamics related to camouflaging and mental health.

In addition, as acknowledged in the methods section, there was a discrepancy in the versions of the ToMI that were administered across two study sites. While total scores were recalculated to give all questions equal weight, and all questions were designed to measure the same constructs, the actual questions were not identical and it is possible that this impacted participants' responses. Further, the variation in questions precluded the analysis of ToM subcategories (i.e., early, basic, and advanced), meaning only overall ToM abilities were assessed. Previous research has indicated that advanced ToM tasks are the most relevant in identifying variation among autistic and neurotypical populations (Crehan et al., 2020; Brewer et al., 2017). As advanced ToM scores were not able to be isolated in this study, this may have limited the depth of the findings.

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Another issue to consider in this study is the potential variability in mental health scores across time. This study was not longitudinal in nature, and thus captured only a specific moment in each participants' mental health journey. There is the possibility that any feature of this study, but perhaps most especially mental health scores, might vary across time periods. The findings of Gough et al. (2023) for example, indicate that while measures of depression such as the PHQ-9 showed strong short-term test-retest reliability, information is lacking on the long-term test-retest reliability of this measure. Little research has been conducted on long-term camouflaging behaviors. Further research on the long-term stability of CAT-Q scores, especially in relation to mental health, could yield useful clinical knowledge on this front.

A particularly salient factor to consider in this analysis is the nature of the self-report. Self-report measures rely on the participants' ability to accurately rate their own abilities, which, in the case of ToM abilities, some have argued, is not necessarily the case. In evaluating ToMI self-reports of both autistic and non-autistic children as compared to their parents' reports, Collins et al. (2024) did find some level of discrepancy between the two reports, albeit in a complex manner. Indeed, scholars such as Crehan et al. (2020) have posited that those with higher ToM capabilities may be more cognizant of their limitations, and thus rate themselves lower, while those with less understanding of others' mental states may rank their own abilities higher. In addition, CAT-Q scores are reflective of participants' reports of their conscious attempts to camouflage, and may not reflect how effective these efforts are. In addition, while the CAT-Q questions are designed to capture various elements of camouflaging it is possible that participants may not be consciously aware of the degree to which they may be suppressing or enacting a behavior (Lawson, 2020), but still experiencing related exhaustion or other mental health impacts. This conundrum should not be placed on the shoulders of autistic participants;

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previous research has indicated autistic individuals appear to have a similar level of insight as neurotypical individuals into their own personalities and capacities (Schriber et al., 2014).

However, future research should be conducted to assess the potential discrepancies between self-report measures and observed behaviors.

Similarly, while self-report measures do provide participants with some autonomy over how their experiences are recorded, there was no opportunity for participants to provide additional insight into or clarification of their experiences, or feedback on the overall results. This part of the procedure may limit the overall depth of information that can be extrapolated from these findings. Future research could include qualitative components to contextualize the scores and gain greater insight into how and why participants may employ certain behaviors or reactions. In addition, while autistic researchers and community members provided guidance in formatting measures and procedures, they did not participate in the interpretation and contextualization of results, which may limit the depth of the analysis.

Conclusion

This study investigated the relationship between camouflaging behaviors, ToM and camouflaging in a sample of autistic and non-autistic adults ages 18-35. The results indicated a variety of nuanced relationships between these three concepts, distinct by autism diagnosis. The varied and specific relationships found between the subcategories of camouflaging behaviors and the theory of mind and mental health measures, indicate that understanding the addressing the use and impact of camouflaging may provide practitioners with building blocks for more efficacious mental health supports. In addition, to build a more comprehensive understanding of social perception across neurotypes, discussions should address the impact of camouflaging, and the related factors that may promote its usage. Self-report measures provide a

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useful tool to explore these concepts from an affirmative lens that values participants' insights into their own experiences, in line with the social model of disability. Further research is needed to better understand the impact of self-report on measurement of these concepts, and to more deeply explore the subtleties of how the relationships discussed in this study interact with other internal and environmental factors such as stigma, to best support assessment and support.

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Tables**Table 1***Participant Demographics: Gender*

Gender	n	%
Woman/Female	34	53.1
Man/Male	21	32.8
Non-binary/genderqueer/other	9	14.1
Total	64	

Note. Trans women are included in women/female and trans men in man/male

Table 2*Participant Demographics: Race/Ethnicity*

Race/Ethnicity	n	%
Asian	16	25
Black or African American	2	3
Hispanic/Latinx	2	3
White	35	54.7
More than one race	8	12.5
Not specified	1	14.1
Total		

Note. Percentages may not sum to 100 due to rounding.

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Table 3*Participant Demographics: Autism Diagnosis*

Autism Diagnosis	n	%
Autistic	20	31
Non-Autistic	44	69
Total	64	

Note. Autistic indicates meeting criteria for ASD as determined by ADOS-2 assessment

Table 4*Descriptive Statistics CAT-Q Scores*

Variable	M	SD
Autistic Participants	124	20.2
Non-Autistic Participants	99.1	23.4

Note. M = mean; SD = standard deviation.

Table 5*Descriptive Statistics TOMI Scores*

Variable	M	SD
Autistic Participants	14.9	3.8
Non-Autistic Participants	17.4	1.5

Note. M = mean; SD = standard deviation.

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Table 6*Pearson Correlation Theory of Mind and Camouflaging, Autistic Sample*

Variable	1	2	3	4	5
1. TOMI Total	—	.407	.397	.511*	.009
2. CAT-Q Total	.407	—			
3. CAT-Q Compensation	.397		—		
4. CAT-Q Masking	.511*			—	
5. CAT-Q Assimilation	.009				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

Table 7*Pearson Correlation Theory of Mind and Camouflaging, Non-autistic Sample*

Variable	1	2	3	4	5
1. TOMI Total	—	-.362*	-.416**	-.021	-.390**
2. CAT-Q Total	-.362*	—			
3. CAT-Q Compensation	-.416**		—		
4. CAT-Q Masking	-.021			—	
5. CAT-Q Assimilation	-.390**				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

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Table 8*Pearson Correlation Camouflaging and Anxiety Autistic Sample*

Variable	1	2	3	4	5
1. GAD-7	—	.369	.099	.214	.601**
2. CAT-Q Total	.369	—			
3. CAT-Q Compensation	.099		—		
4. CAT-Q Masking	.214			—	
5. CAT-Q Assimilation	.601**				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

Table 9*Pearson Correlation Camouflaging and Anxiety, Non-autistic Sample*

Variable	1	2	3	4	5
1. GAD-7	—	.272	.213	.197	.284
2. CAT-Q Total	.272	—			
3. CAT-Q Compensation	.213		—		
4. CAT-Q Masking	.197			—	
5. CAT-Q Assimilation	.284				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

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Table 10*Pearson Correlation Camouflaging and Depression, Autistic Sample*

Variable	1	2	3	4	5
1. PHQ-9	—	-.235	-.504*	-.243	.297
2. CAT-Q Total	-.235	—			
3. CAT-Q Compensation	-.504*		—		
4. CAT-Q Masking	-.243			—	
5. CAT-Q Assimilation	.297				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

Table 11*Pearson Correlation Camouflaging and Depression, Non-Autistic Sample*

Variable	1	2	3	4	5
1. PHQ-9	—	.221	.219	.017	.280
2. CAT-Q Total	.221	—			
3. CAT-Q Compensation	.219		—		
4. CAT-Q Masking	.017			—	
5. CAT-Q Assimilation	.280				—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

Table 12*Pearson Correlation Theory of Mind and Anxiety, Autistic Sample*

Variable	1	2
1. TOMI	—	-.231
2. GAD-7	-.231	—

Note. * $p < .05$; ** $p < .01$.

Table 13*Pearson Correlation Theory of Mind and Anxiety, Non-Autistic Sample*

Variable	1	2
1. TOMI	—	-.389**
2. GAD-7	-.389**	—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.**Table 14***Pearson Correlation Theory of Mind and Depression, Autistic Sample*

Variable	1	2
1. TOMI	—	-.791***
2. PHQ-9	-.791***	—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.**Table 15***Pearson Correlation Theory of Mind and Depression, Non-autistic Sample*

Variable	1	2
1. TOMI	—	-.540***
2. PHQ-9	-.540***	—

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

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Table 16*Summary of Stepwise Linear Regression Predicting CAT-Q Total*

	R	R Square	F	B	β	t
Model 1	.43	.18	12.93***			
Constant				146.7		12.574***
ADOS				-23.64	-.43	-3.60***
	R	R Square	F	B	β	t
Model 2	.494	.244	9.196			
Constant				120.109		7.175***
ADOS				-18.201	-.329	-2.65*
GAD-7				1.145	.267	2.16*

Note. B = unstandardized coefficient; SE = standard error; β = standardized coefficient.

Note. *p < .05, **p < .01, ***p < .005.

Table 17*Summary of Linear Regression Predicting CAT-Q Compensation*

Predictor	R	F	B	β	t
Model 1	.46	15.52***			
Constant			57.04		10.17***
ADOS			-12.45	-.46	-3.94***

Note. B = unstandardized coefficient; SE = standard error; β = standardized coefficient.

Note. *p < .05, **p < .01, ***p < .005.

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Table 18*Summary of Stepwise Linear Regression Predicting CAT-Q Assimilation*

	R	R Square	F	B	β	t
Model 1	.48	.23	17.69***			
Constant				18.16		5.63***
GAD-7				.84	.48	4.2***
	R	R Square	F	B	β	t
Model 2	.58	.33	14.29***			
Constant				34.55		5.43***
GAD-7				.62	.358	3.08**
ADOS				-7.64	-.34	-2.93**

Note. B = unstandardized coefficient; SE = standard error; β = standardized coefficient.

Note. *p < .05, **p < .01, ***p < .005.

Table 19*Means, Standard Deviations, and One-Way ANOVA for CAT-Q Masking*

Measure	Autistic		Non-autistic		F(1, 60)	Cohen's d
	M	SD	M	SD		
TOMI-Total	14.94	9.1	10.84	6.37	3.08	
PHQ-9	11.47	3.84	17.42	1.52	.25	
GAD-7	18.55	7.75	13.75	4.12	5.63*	.81
ADOS-2	1	0	2	0	.14	

References

- Ai, W., Cunningham, W. A., & Lai, M.-C. (2024). The dimensional structure of the Camouflaging Autistic Traits Questionnaire (CAT-Q) and predictors of camouflaging in a representative general population sample. *Comprehensive Psychiatry, 128*, 152434. <https://doi.org/10.1016/j.comppsy.2023.152434>
- Alaghband-rad, J., Hajikarim-Hamedani, A., & Motamed, M. (2023). Camouflage and masking behavior in adult autism. *Frontiers in Psychiatry, 14*. <https://doi.org/10.3389/fpsyt.2023.1108110>
- Alamdari, S. B., Sadeghi Damavandi, M., Zarei, M., & Khosrowabadi, R. (2022). Cognitive theories of autism based on the interactions between brain functional networks. *Frontiers in Human Neuroscience, 16*. <https://doi.org/10.3389/fnhum.2022.828985>
- Alkire, D., McNaughton, K. A., Yarger, H. A., Shariq, D., & Redcay, E. (2022). Theory of mind in naturalistic conversations between autistic and typically developing children and adolescents. *Autism*. <https://doi.org/10.1177/13623613221103699>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders (DSM-5-TR)*. American Psychiatric Association Publishing. <https://doi.org/10.1176/appi.books.9780890425787>
- Apperly, I. A. (2012). What is “theory of mind”? Concepts, cognitive processes and individual differences. *Quarterly Journal of Experimental Psychology, 65*(5), 825–839. <https://doi.org/10.1080/17470218.2012.676055>
- Arbona, C., & Jimenez, C. (2014). Minority stress, ethnic identity, and depression among Latino/a college students. *Journal of Counseling Psychology, 61*(1), 162–168. <https://doi.org/10.1037/a0034914>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a “theory of mind”? *Cognition*, *21*(1), 37–46. [https://doi.org/10.1016/0010-0277\(85\)90022-8](https://doi.org/10.1016/0010-0277(85)90022-8)
- Birch, S. A. J., Li, V., Haddock, T., Ghrear, S. E., Brosseau-Liard, P., Baimel, A., & Whyte, M. (2017). Chapter Six - Perspectives on Perspective Taking: How Children Think About the Minds of Others. In J. B. Benson (Ed.), *Advances in Child Development and Behavior* (Vol. 52, pp. 185–226). JAI. <https://doi.org/10.1016/bs.acdb.2016.10.005>
- Bora, E., & Berk, M. (2016). Theory of mind in major depressive disorder: A meta-analysis. *Journal of Affective Disorders*, *191*, 49–55. <https://doi.org/10.1016/j.jad.2015.11.023>
- Botha, M., & Frost, D. M. (2020). Extending the Minority Stress Model to Understand Mental Health Problems Experienced by the Autistic Population. *Society and Mental Health*, *10*(1), 20–34. <https://doi.org/10.1177/2156869318804297>
- Bowleg, L., Malekzadeh, A. N., AuBuchon, K. E., Ghabrial, M. A., & Bauer, G. R. (2023). Rare exemplars and missed opportunities: Intersectionality within current sexual and gender diversity research and scholarship in psychology. *Current Opinion in Psychology*, *49*, 101511. <https://doi.org/10.1016/j.copsyc.2022.101511>
- Bradley, L., Shaw, R., Baron-Cohen, S., & Cassidy, S. (2021). Autistic Adults’ Experiences of Camouflaging and Its Perceived Impact on Mental Health. *Autism in Adulthood: Challenges and Management*, *3*(4), 320–329. <https://doi.org/10.1089/aut.2020.0071>
- Brewer, N., Young, R. L., & Barnett, E. (2017). Measuring Theory of Mind in Adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, *47*(7), 1927–1941. <https://doi.org/10.1007/s10803-017-3080-x>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Buckner, J. D., Morris, P. E., Shepherd, J. M., & Zvolensky, M. J. (2022). Ethnic-racial identity and hazardous drinking among black drinkers: A test of the minority stress model. *Addictive Behaviors, 127*, 107218. <https://doi.org/10.1016/j.addbeh.2021.107218>
- Cage, E., & Troxell-Whitman, Z. (2019). Understanding the Reasons, Contexts and Costs of Camouflaging for Autistic Adults. *Journal of Autism and Developmental Disorders, 49*(5), 1899–1911. <https://doi.org/10.1007/s10803-018-03878-x>
- Cassidy, S. A., Gould, K., Townsend, E., Pelton, M., Robertson, A. E., & Rodgers, J. (2020). Is Camouflaging Autistic Traits Associated with Suicidal Thoughts and Behaviours? Expanding the Interpersonal Psychological Theory of Suicide in an Undergraduate Student Sample. *Journal of Autism and Developmental Disorders, 50*(10), 3638–3648. <https://doi.org/10.1007/s10803-019-04323-3>
- Chandrasekhar, T., & Sikich, L. (2015). Challenges in the diagnosis and treatment of depression in autism spectrum disorders across the lifespan. *Dialogues in Clinical Neuroscience, 17*(2), 219–227. <https://doi.org/10.31887/DCNS.2015.17.2/tchandrasekhar>
- Chapman, L., Rose, K., Hull, L., & Mandy, W. (2022). “I want to fit in... but I don’t want to change myself fundamentally”: A qualitative exploration of the relationship between masking and mental health for autistic teenagers. *Research in Autism Spectrum Disorders, 99*, 102069. <https://doi.org/10.1016/j.rasd.2022.102069>
- Cleary, M., West, S., Kornhaber, R., & Hungerford, C. (2023). Autism, Discrimination and Masking: Disrupting a Recipe for Trauma. *Issues in Mental Health Nursing, 44*(9), 799–808. <https://doi.org/10.1080/01612840.2023.2239916>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Collins, A. S., Carroll, K. J., Gerber, A. H., Keenan, E. G., & Lerner, M. D. (2024). Theory of Mind and Social Informant Discrepancy in Autism. *Child Psychiatry & Human Development*. <https://doi.org/10.1007/s10578-024-01676-4>
- Cook, J., Hull, L., Crane, L., & Mandy, W. (2021). Camouflaging in autism: A systematic review. *Clinical Psychology Review*, *89*, 102080. <https://doi.org/10.1016/j.cpr.2021.102080>
- Crehan, E. T., Althoff, R. R., Riehl, H., Prelock, P. A., & Hutchins, T. (2020). Brief Report: Me, Reporting on Myself: Preliminary Evaluation of the Criterion-Related Validity of the Theory of Mind Inventory-2 when Completed by Autistic Young Adults. *Journal of Autism and Developmental Disorders*, *50*(2), 659–664. <https://doi.org/10.1007/s10803-019-04278-5>
- Cyrus, K. (2017). Multiple minorities as multiply marginalized: Applying the minority stress theory to LGBTQ people of color. *Journal of Gay & Lesbian Mental Health*, *21*(3), 194–202. <https://doi.org/10.1080/19359705.2017.1320739>
- Dean, M., Harwood, R., & Kasari, C. (2017). The art of camouflage: Gender differences in the social behaviors of girls and boys with autism spectrum disorder. *Autism*, *21*(6), 678–689. <https://doi.org/10.1177/1362361316671845>
- Edey, R., Cook, J., Brewer, R., Johnson, M. H., Bird, G., & Press, C. (2016). Interaction takes two: Typical adults exhibit mind-blindness towards those with autism spectrum disorder. *Journal of Abnormal Psychology*, *125*(7), 879–885. <https://doi.org/10.1037/abn0000199>
- Ellis, S., Tan, K., Schmidt, J., Veale, J., & Treharne, G. (2020). Gender Minority Stress: A Critical Review. *Journal of Homosexuality*, *67*, 1471–1489. <https://doi.org/10.1080/00918369.2019.1591789>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

Evans, J. A., Krumrei-Mancuso, E. J., & Rouse, S. V. (2024). What You Are Hiding Could Be

Hurting You: Autistic Masking in Relation to Mental Health, Interpersonal Trauma,

Authenticity, and Self-Esteem. *Autism in Adulthood*, 6(2), 229–240.

<https://doi.org/10.1089/aut.2022.0115>

Faso, D. J., Corretti, C. A., Ackerman, R. A., & Sasson, N. J. (2016). The broad autism

phenotype predicts relationship outcomes in newly formed college roommates. *Autism*,

20(4), 412–424. <https://doi.org/10.1177/1362361315585733>

Finke, E. H., & Dunn, D. H. (2023). Neurodiversity and double empathy: Can empathy

disconnects be mitigated to support autistic belonging? *Disability & Society*, 0(0), 1–24.

<https://doi.org/10.1080/09687599.2023.2295802>

Frith, U., & Happé, F. (2005). Autism spectrum disorder. *Current Biology*, 15(19), R786–R790.

<https://doi.org/10.1016/j.cub.2005.09.033>

Frost, D. M., & Meyer, I. H. (2023). Minority stress theory: Application, critique, and continued relevance. *Current Opinion in Psychology*, 51, 101579.

<https://doi.org/10.1016/j.copsyc.2023.101579>

Gernsbacher, M. A., & Yergeau, M. (2019). Empirical Failures of the Claim That Autistic People Lack a Theory of Mind. *Archives of Scientific Psychology*, 7(1), 102–118.

<https://doi.org/10.1037/arc0000067>

Goering, S. (2015). Rethinking disability: The social model of disability and chronic disease.

Current Reviews in Musculoskeletal Medicine, 8(2), 134–138.

<https://doi.org/10.1007/s12178-015-9273-z>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Gough, A., Marshall, T., Ferris, E., & Sitch, A. (2023). Within-individual variation of measured depression symptoms: A systematic review and meta-analysis. *Journal of Affective Disorders Reports, 14*, 100675. <https://doi.org/10.1016/j.jadr.2023.100675>
- Grahek, I., Shenhav, A., Musslick, S., Krebs, R. M., & Koster, E. H. W. (2019). Motivation and cognitive control in depression. *Neuroscience & Biobehavioral Reviews, 102*, 371–381. <https://doi.org/10.1016/j.neubiorev.2019.04.011>
- Haeghele, J. A., & Hodge, S. (2016). Disability Discourse: Overview and Critiques of the Medical and Social Models. *Quest, 68*(2), 193–206. <https://doi.org/10.1080/00336297.2016.1143849>
- Han, G. T., Tomarken, A. J., & Gotham, K. O. (2019). Social and nonsocial reward moderate the relation between autism symptoms and loneliness in adults with ASD, depression, and controls. *Autism Research, 12*(6), 884–896. <https://doi.org/10.1002/aur.2088>
- Hao, Y., Banker, S., Trayvick, J., Barkley, S., Peters, A. W., Thinakaran, A., McLaughlin, C., Gu, X., Schiller, D., & Foss-Feig, J. (2025). Understanding depression in autism: The role of subjective perception and anterior cingulate cortex volume. *Molecular Autism, 16*(1), 9. <https://doi.org/10.1186/s13229-025-00638-4>
- Heasman, B., & Gillespie, A. (2019). Neurodivergent intersubjectivity: Distinctive features of how autistic people create shared understanding. *Autism, 23*(4), 910–921. <https://doi.org/10.1177/1362361318785172>
- Hezel, D. M., & McNally, R. J. (2014). Theory of Mind Impairments in Social Anxiety Disorder. *Behavior Therapy, 45*(4), 530–540. <https://doi.org/10.1016/j.beth.2014.02.010>
- Hollocks, M. J., Lerh, J. W., Magiati, I., Meiser-Stedman, R., & Brugha, T. S. (2019). Anxiety and depression in adults with autism spectrum disorder: A systematic review and meta-

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

analysis. *Psychological Medicine*, 49(4), 559–572.

<https://doi.org/10.1017/S0033291718002283>

Hull, L., Mandy, W., Lai, M.-C., Baron-Cohen, S., Allison, C., Smith, P., & Petrides, K. V. (2019). Development and Validation of the Camouflaging Autistic Traits Questionnaire (CAT-Q). *Journal of Autism and Developmental Disorders*, 49(3), 819–833.
<https://doi.org/10.1007/s10803-018-3792-6>

Hull, L., Petrides, K. V., Allison, C., Smith, P., Baron-Cohen, S., Lai, M.-C., & Mandy, W. (2017). “Putting on My Best Normal”: Social Camouflaging in Adults with Autism Spectrum Conditions. *Journal of Autism and Developmental Disorders*, 47(8), 2519–2534.
<https://doi.org/10.1007/s10803-017-3166-5>

Hutchins, T. L., Lewis, L., Prelock, P. A., & Brien, A. (2021). The Development and Preliminary Psychometric Evaluation of the Theory of Mind Inventory: Self Report—Adult (ToMI:SR-Adult). *Journal of Autism and Developmental Disorders*, 51(6), 1839–1851.
<https://doi.org/10.1007/s10803-020-04654-6>

Hutchins, T. L., Prelock, P. A., & Bonazinga, L. (2012). Psychometric Evaluation of the Theory of Mind Inventory (ToMI): A Study of Typically Developing Children and Children with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 42(3), 327–341. <https://doi.org/10.1007/s10803-011-1244-7>

Johnson, S. U., Ulvenes, P. G., Øktedalen, T., & Hoffart, A. (2019). Psychometric Properties of the General Anxiety Disorder 7-Item (GAD-7) Scale in a Heterogeneous Psychiatric Sample. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.01713>

Jones, D. R., Botha, M., Ackerman, R. A., King, K., & Sasson, N. J. (2024). Non-autistic observers both detect and demonstrate the double empathy problem when evaluating

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

interactions between autistic and non-autistic adults. *Autism*, 28(8), 2053–2065.

<https://doi.org/10.1177/13623613231219743>

Kamp-Becker, I., Albertowski, K., Becker, J., Ghahreman, M., Langmann, A., Mingeback, T., Poustka, L., Weber, L., Schmidt, H., Smidt, J., Stehr, T., Roessner, V., Kucharczyk, K., Wolff, N., & Stroth, S. (2018). Diagnostic accuracy of the ADOS and ADOS-2 in clinical practice. *European Child & Adolescent Psychiatry*, 27(9), 1193–1207.

<https://doi.org/10.1007/s00787-018-1143-y>

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613.

<https://doi.org/10.1046/j.1525-1497.2001.016009606.x>

Lai, M.-C., Lombardo, M. V., Chakrabarti, B., Ruigrok, A. N., Bullmore, E. T., Suckling, J., Auyeung, B., Happé, F., Szatmari, P., Baron-Cohen, S., & MRC AIMS Consortium. (2019). Neural self-representation in autistic women and association with “compensatory camouflaging.” *Autism: The International Journal of Research and Practice*, 23(5), 1210–1223. <https://doi.org/10.1177/1362361318807159>

Lawson, W. B. (2020). Adaptive Morphing and Coping with Social Threat in Autism: An Autistic Perspective. *Journal of Intellectual Disability - Diagnosis and Treatment*, 8(3), Article 3. <https://doi.org/10.6000/2292-2598.2020.08.03.29>

Leekam, S. R., Prior, M. R., & Uljarevic, M. (2011). Restricted and repetitive behaviors in autism spectrum disorders: A review of research in the last decade. *Psychological Bulletin*, 137(4), 562–593. <https://doi.org/10.1037/a0023341>

Livingston, L. A., Colvert, E., Team, the S. R. S., Bolton, P., & Happé, F. (2019). Good social skills despite poor theory of mind: Exploring compensation in autism spectrum disorder.

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

Journal of Child Psychology and Psychiatry, 60(1), 102–110.

<https://doi.org/10.1111/jcpp.12886>

Lockwood Estrin, G., Milner, V., Spain, D., Happé, F., & Colvert, E. (2021). Barriers to Autism Spectrum Disorder Diagnosis for Young Women and Girls: A Systematic Review. *Review Journal of Autism and Developmental Disorders*, 8(4), 454–470.

<https://doi.org/10.1007/s40489-020-00225-8>

Lombardo, M. V., & Baron-Cohen, S. (2011). The role of the self in mindblindness in autism. *Consciousness and Cognition*, 20(1), 130–140.

<https://doi.org/10.1016/j.concog.2010.09.006>

Lord, C., Risi, S., Lambrecht, L., Cook, E. H., Leventhal, B. L., DiLavore, P. C., Pickles, A., & Rutter, M. (2000). The Autism Diagnostic Observation Schedule—Generic: A Standard Measure of Social and Communication Deficits Associated with the Spectrum of Autism. *Journal of Autism and Developmental Disorders*, 30(3), 205–223.

<https://doi.org/10.1023/A:1005592401947>

Lund, E. M. (2021). Examining the potential applicability of the minority stress model for explaining suicidality in individuals with disabilities. *Rehabilitation Psychology*, 66(2), 183–191. <https://doi.org/10.1037/rep0000378>

Marocchini, E. (2023). Impairment or difference? The case of Theory of Mind abilities and pragmatic competence in the Autism Spectrum. *Applied Psycholinguistics*, 44(3), 365–383.

<https://doi.org/10.1017/S0142716423000024>

Matsuno, E., & Budge, S. L. (2017). Non-binary/Genderqueer Identities: A Critical Review of the Literature. *Current Sexual Health Reports*, 9(3), 116–120.

<https://doi.org/10.1007/s11930-017-0111-8>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, 36(1), 38–56. <https://doi.org/10.2307/2137286>
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674–697. <https://doi.org/10.1037/0033-2909.129.5.674>
- Miller, D., Rees, J., & Pearson, A. (2021). “Masking Is Life”: Experiences of Masking in Autistic and Nonautistic Adults. *Autism in Adulthood: Challenges and Management*, 3(4), 330–338. <https://doi.org/10.1089/aut.2020.0083>
- Milton, D. E. M. (2012). On the ontological status of autism: The ‘double empathy problem.’ *Disability & Society*, 27(6), 883–887. <https://doi.org/10.1080/09687599.2012.710008>
- Milton, D., Gurbuz, E., & López, B. (2022). The ‘double empathy problem’: Ten years on. *Autism*, 26(8), 1901–1903. <https://doi.org/10.1177/13623613221129123>
- Mitchell, P., Sheppard, E., & Cassidy, S. (2021). Autism and the double empathy problem: Implications for development and mental health. *British Journal of Developmental Psychology*, 39(1), 1–18. <https://doi.org/10.1111/bjdp.12350>
- National Institute of Mental Health. (2023, July). *Major depression—National Institute of Mental Health (NIMH)*. <https://www.nimh.nih.gov/health/statistics/major-depression>
- Nestor, B. A., Sutherland, S., & Garber, J. (2022). Theory of mind performance in depression: A meta-analysis. *Journal of Affective Disorders*, 303, 233–244. <https://doi.org/10.1016/j.jad.2022.02.028>
- Pearson, A., & Rose, K. (2021). A Conceptual Analysis of Autistic Masking: Understanding the Narrative of Stigma and the Illusion of Choice. *Autism in Adulthood*, 3(1), 52–60. <https://doi.org/10.1089/aut.2020.0043>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- Peterson, C. C., & Wellman, H. M. (2019). Longitudinal Theory of Mind (ToM) Development From Preschool to Adolescence With and Without ToM Delay. *Child Development, 90*(6), 1917–1934. <https://doi.org/10.1111/cdev.13064>
- Preckel, K., Kanske, P., & Singer, T. (2018). On the interaction of social affect and cognition: Empathy, compassion and theory of mind. *Current Opinion in Behavioral Sciences, 19*, 1–6. <https://doi.org/10.1016/j.cobeha.2017.07.010>
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences, 1*(4), 515–526. <https://doi.org/10.1017/S0140525X00076512>
- Quesque, F., & Rossetti, Y. (2020). What Do Theory-of-Mind Tasks Actually Measure? Theory and Practice. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science, 15*(2), 384–396. <https://doi.org/10.1177/1745691619896607>
- Radulski, E. M. (2022). Conceptualising Autistic Masking, Camouflaging, and Neurotypical Privilege: Towards a Minority Group Model of Neurodiversity. *Human Development, 66*(2), 113–127. <https://doi.org/10.1159/000524122>
- Rivera, R. A., & Bennetto, L. (2023). Applications of identity-based theories to understand the impact of stigma and camouflaging on mental health outcomes for autistic people. *Frontiers in Psychiatry, 14*. <https://doi.org/10.3389/fpsy.2023.1243657>
- Schriber, R. A., Robins, R. W., & Solomon, M. (2014). Personality and self-insight in individuals with autism spectrum disorder. *Journal of Personality and Social Psychology, 106*(1), 112–130. <https://doi.org/10.1037/a0034950>
- Schurz, M., Radua, J., Tholen, M. G., Maliske, L., Margulies, D. S., Mars, R. B., Sallet, J., & Kanske, P. (2021). Toward a hierarchical model of social cognition: A neuroimaging meta-

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

- analysis and integrative review of empathy and theory of mind. *Psychological Bulletin*, *147*(3), 293–327. <https://doi.org/10.1037/bul0000303>
- Sheppard, E., Pillai, D., Wong, G. T.-L., Ropar, D., & Mitchell, P. (2016). How Easy is it to Read the Minds of People with Autism Spectrum Disorder? *Journal of Autism and Developmental Disorders*, *46*(4), 1247–1254. <https://doi.org/10.1007/s10803-015-2662-8>
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Tolentino, J. C., & Schmidt, S. L. (2018). DSM-5 Criteria and Depression Severity: Implications for Clinical Practice. *Frontiers in Psychiatry*, *9*. <https://doi.org/10.3389/fpsy.2018.00450>
- Tubío-Fungueiriño, M., Cruz, S., Sampaio, A., Carracedo, A., & Fernández-Prieto, M. (2021). Social Camouflaging in Females with Autism Spectrum Disorder: A Systematic Review. *Journal of Autism and Developmental Disorders*, *51*(7), 2190–2199. <https://doi.org/10.1007/s10803-020-04695-x>
- Wang, X., Auyeung, B., Pan, N., Lin, L.-Z., Chen, Q., Chen, J.-J., Liu, S.-Y., Dai, M.-X., Gong, J.-H., Li, X.-H., & Jing, J. (2022). Empathy, Theory of Mind, and Prosocial Behaviors in Autistic Children. *Frontiers in Psychiatry*, *13*. <https://doi.org/10.3389/fpsy.2022.844578>
- Washburn, D., Wilson, G., Roes, M., Rnic, K., & Harkness, K. L. (2016). Theory of mind in social anxiety disorder, depression, and comorbid conditions. *Journal of Anxiety Disorders*, *37*, 71–77. <https://doi.org/10.1016/j.janxdis.2015.11.004>
- White, L. C. J., Ixqe, K. V., Goodall, K., & Gillespie-Smith, K. (2024). Minority Stress, Camouflaging, and Mental Health Outcomes in Transgender and/or Non-binary Autistic Adults. *Autism in Adulthood*. <https://doi.org/10.1089/aut.2023.0151>

RUNNING HEAD: WHAT DO OUR SELF-REPORTS TELL US

Williams, G. L. (2021). Theory of autistic mind: A renewed relevance theoretic perspective on so-called autistic pragmatic ‘impairment.’ *Journal of Pragmatics*, *180*, 121–130.

<https://doi.org/10.1016/j.pragma.2021.04.032>

Wolkenstein, L., Schönenberg, M., Schirm, E., & Hautzinger, M. (2011). I can see what you feel, but I can’t deal with it: Impaired theory of mind in depression. *Journal of Affective Disorders*, *132*(1), 104–111. <https://doi.org/10.1016/j.jad.2011.02.010>

World Health Organization. (2023, March 31). *Depressive Disorder (Depression)*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/depression>

Wood-Downie, H., Wong, B., Kovshoff, H., Mandy, W., Hull, L., & Hadwin, J. A. (2021). Sex/Gender Differences in Camouflaging in Children and Adolescents with Autism. *Journal of Autism and Developmental Disorders*, *51*(4), 1353–1364.

<https://doi.org/10.1007/s10803-020-04615-z>

Zeidan, J., Fombonne, E., Scolah, J., Ibrahim, A., Durkin, M. S., Saxena, S., Yusuf, A., Shih, A., & Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research*, *15*(5), 778–790. <https://doi.org/10.1002/aur.2696>