

**Being Autistic in a Non-Autistic World: Autistic Adults' Experiences of Adapting to and Coping  
Within Predominately Non-Autistic Social Environments**

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Thesis submitted for the Degree of Doctor of Philosophy

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April 2022

## Declaration

I, Julia Cook, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Julia Cook  
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### Declaration Form A

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### **Acknowledgements**

First and foremost I would like to express my gratitude to my supervisors Professor William Mandy and Dr Laura Crane. To have supervisors who invest in you by generously sharing their time, knowledge and encouragement is truly a great privilege.

Thank you to the many autistic people who made this thesis possible by generously sharing their time and experiences. I hope my research will help in achieving meaningful change.

Thank you to my academic colleagues and friends, especially Dr Laura Hull, Dr Janina Brede, Laura Bourne, Dr Hannah Belcher, Dr Rebecca Bundy, Gianna Kohl, Emily Thomas, Dr Mike Wang. This journey would not have been nearly as enjoyable or interesting without you.

Finally, thank you to my friends and family. To Mum, Dad, Patrick, and Erin: thank you for always being my greatest cheerleaders. To the new friends I met here in London, especially Kate, Clare, Loz, Nat, Bunty, and Caitlin: thank you for helping me to find my feet in London. To Rachel: thank you for all the calls, texts, and care packages. And Rhys: thank you for always being there for me.



## Abstract

Some autistic individuals modify their innate autistic social behaviour in order to adapt to, cope within, and/or influence the predominately non-autistic social environment; a phenomenon often termed 'camouflaging' (Attwood, 2007; Dean et al., 2017; Hull et al., 2017; Lai et al., 2017; Schuck et al., 2019). Camouflaging is one social coping strategy used by autistic people attempting to overcome social challenges within cross-neurotype social interactions and secure employment, develop friendships and romantic relationships, and avoid stigmatisation (Cage & Troxell-Whitman, 2019; Hull et al., 2017). Yet the act of camouflaging is thought to be cognitively effortful and taxing; prone to breakdown under increased social demands and complexity and/or psychological distress; and associated with increased mental health difficulties, misdiagnosis, and identity confusion (e.g., Beck et al., 2020; Cage & Troxell-Whitman, 2019; Cassidy et al., 2018; Hull et al., 2021; Lai et al., 2017; Livingston, Colvert, et al., 2019). Camouflaging research is in infancy; conceptualisations, definitions and measures of camouflaging are still emerging, and much is unknown about relationships between camouflaging and various constructs such as mental health, wellbeing, and the achievement of important social and employment outcomes.

This thesis presents a combination of qualitative and quantitative methods to further current understanding of social coping in autistic people by furthering the current conceptualisation of camouflaging including camouflaging behaviours and processes; examining the relationships between camouflaging and social, employment and mental health outcomes; and exploring social experiences that contrast with camouflaging. The first chapter provides a general introduction to, and overview of, the relevant background research and provides a rationale for the work presented in the thesis. Chapter 2 involves a discussion of methodological considerations involved in the design and analysis of research presented in the thesis. Chapter 3, a systematic review, provides a comprehensive and critical evaluation of the current quantitative camouflaging research base; identifying consistencies in the current evidence as well as issues that require further research. Chapters 4 and 5 describe an interpersonal recall study, using thematic analysis to detail the

development, process, and consequences of camouflaging (Chapter 4) and content analysis to describe the behaviours exhibited, altered, or avoided by autistic adults when camouflaging (Chapter 5). Chapter 6, a quantitative cross-sectional study, details associations between camouflaging and social and employment outcomes and indicators of mental health difficulties/psychological distress. Chapter 7 involves a qualitative survey and uses thematic analysis to explore an alternative to camouflaging, specifically autistic adults' experiences of socialising in ways that feel authentic to them. The final chapter (Chapter 8) provides an overarching discussion of the findings and implications of the thesis with consideration to strengths and limitations.

## Impact Statement

Autistic people face challenges in multiple domains including social participation and relationships (Billstedt et al., 2011; Orsmond et al., 2013), employment (Howlin et al., 2004), and mental health (Lever & Geurts, 2016) which impact upon their quality of life (Adam et al., 2019). Reducing such challenges is a key priority for the autistic and broader autism community (e.g., Cusack & Sterry, 2016; NHS, 2019). To this end, experts in the field have highlighted the need for innovative research examining ‘fit’ between neurodivergent individual characteristics and predominately neurotypical sociocultural environments (i.e., person-environment fit; Lai et al., 2020). The research presented in this thesis makes a key contribution by generating novel insights into social coping; a phenomenon related to person-environment fit. These insights will benefit the autistic community by informing clinical and educational practice and policy and stimulating further research.

Another key contribution of this thesis is the development of qualitative research methods for use with autistic people. For the first time in autism research, a video assisted recall method was used to address limitations associated with traditional qualitative methods that retrospectively explore individuals’ experiences of interpersonal interactions weeks, months, or years after these have occurred. Additionally, survey development procedures, established outside the field of autism, were innovatively applied to improve the accessibility of an online qualitative survey for autistic people. The success of these methods contributes to the field of autism research by demonstrating the benefits of developing and adapting research methods so as to better suit the needs of autistic people and enhance the quality of data collected.

The research presented in this thesis has already been widely disseminated in academic circles via peer-reviewed journal articles, conferences presentations, and posters. A version of Chapter 3 was published in *Clinical Psychology Review* and cited nine times from September 2021 to April 2022. A version of Chapter 4 was published in *Autism*, viewed over 4 870 times, and cited eight times from February 2021 to April 2022. A version of Chapter 4 was also presented at the

International Society for Autism Research (INSAR) Annual Meeting, 2020. A version of Chapter 5 was published in *Autism*, viewed over 5 880 times, and cited twice from June 2021 to April 2022. A version of Chapter 5 was also presented at the Autistica Annual Conference, 2020. A version of Chapter 7 has been accepted for presentation at the INSAR Annual Meeting, 2022.

Many members of the autistic and broader autism communities have engaged with the abovementioned research outputs. The research papers based on Chapters 4 and 5 have Almetric attention scores (a measure of online engagement) in the top 5% of all research outputs scored by Almetric. Additionally, I have begun disseminating the findings of the thesis directly to members of the autistic community. I created accessible and engaging lay person summaries of Chapters 4 and 5 (see Appendix A) and circulated these to research participants. Plans to create similar summaries for Chapter 6 and 7 are underway.

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## Terminology

In the Diagnostic and Statistical Manual 5<sup>th</sup> Edition (DSM-5, American Psychiatric Association, 2013), autism is described using deficit-laden language and is termed autism spectrum disorder. Many members of the autistic and broader autism communities reject such language on the basis that it pathologises autistic characteristics and overemphasises difficulties experienced by autistic people whilst minimising their strengths and capabilities (Farahar, 2022). In line with best-practice guidelines, throughout this thesis I will generally avoid deficit- and impairment-based language and use the more neutral term autism (Bottema-Beutel et al., 2021). An exception to this is the section outlining evolutions in the diagnostic criteria for autism. In this section, I have chosen not to whitewash historic and current diagnostic practice by changing terminology, in an effort to provide important context for issues discussed later in the thesis. I use identity-first language when referring to autistic people. This decision was based on the preferences of the majority of participants included in this thesis, as well as past research (e.g., Kenny et al., 2015). However, I acknowledge that some members of the autistic community prefer other terminology. I use the term autistic community when describing the community of autistic people and autism community when referring more broadly to autistic people's families, friends, and service providers. Finally, when referring to people who do not identify as autistic as I use the term non-autistic people.

## Chapter 1: General Introduction

Autism is diagnosed in 1.5% to 4% population, on the basis of observable social and non-social characteristics (APA, 2013; Bent et al., 2017; Happé & Charlton; 2012; May et al., 2017). Whilst once considered a rare and specific condition of childhood, an increasingly large and heterogeneous group of people are being diagnosed as autistic, sometimes later in adolescence and adulthood (Lai & Baron-Cohen, 2015; Rutherford et al., 2016). At the same time, major shifts are occurring in the way knowledge is constructed within autism research. Increasingly, medical paradigms of autism are being abandoned in favour of neurodiversity paradigms (Pellicano & den Houting, 2021). A line of research that has emerged against this backdrop, which is concerned with social coping, examines ways in which autistic people adapt to, cope within, and influence the predominately non-autistic social world. Most of this research is concerned with camouflaging, that is, strategies and behaviours that enable autistic people to (consciously or unconsciously) present a seemingly non-autistic social style, hide autistic characteristics, and/or minimise the visibility of social difficulties (Hull et al., 2017; Lai et al., 2011; Lawson et al., 2020; Livingston, Shah, & Happé, 2019). The current chapter introduces this thesis by detailing this evolution in autism research. A rationale for and aims of the remainder of the thesis are then presented.

### **Evolutions in the Diagnostic Criteria for Autism**

Kanner's (1943) case series first introduced autism in the mainstream as a childhood-onset, developmental condition exemplified by extreme autistic aloneness and an obsessive need for sameness, which was associated with delayed or atypical language development, a strength in fine but not gross motors skills, and excellent rote memory abilities. At around the same time, another case series produced independently by Asperger<sup>1</sup> described a similar profile, also exemplified by social aloneness and resistance to change, but associated with differing language, motor, and

---

<sup>1</sup> Recent evidence suggests Asperger was complicit in the euthanasia of disabled children in Nazi Austria (Czech, 2018). It is important to acknowledge the ongoing damage caused to the autistic community by these evil actions.

learning skills (Asperger, 1944). However, written in German this case study remained relatively unknown for several decades (Frith, 1991).

In the years that followed Kanner's paper, the classification of the condition described was much debated. The term 'autistic' used by Kanner was previously used to describe social withdrawal associated with schizophrenia and initially some (albeit not Kanner himself) thought of autism as an early manifestation of schizophrenia leading it to be classified in the DSM-II<sup>2</sup> as an infantile psychosis under the umbrella of childhood schizophrenia (APA, 1968; Bleuler, 1908; Harris, 2018). However, in the next version of DSM, published in 1980 (DSM-III), autism, termed early infantile autism, appeared for the first time as a pervasive developmental disorder distinct from schizophrenia. The criteria for early infantile autism included having an onset before 30 months, a pervasive lack of interest in others, severely delayed and deviant language development (e.g., echolalia, pronominal reversal), unusual response to multiple aspects of the environment (e.g., resistance to change, attachment to inanimate objects), and the absence of hallucinations and delusions (associated with schizophrenia). To gain a diagnosis of early infantile autism, an individual needed to meet all criteria by history or clinical observation. Focused on early childhood and narrowly defined, these criteria constrained diagnosis to a relatively rare phenotype of autism associated with more overt behavioural characteristics, male sex, and cognitive difficulties (Scahill et al., 2014).

From the 1980's onwards, the heterogeneity of autism was recognised, facilitated by large epidemiological studies that demonstrated the spectrum nature of autistic characteristics as well as the introduction of Asperger's earlier work to the English-speaking world (Frith, 1991; Wing, 1981; Wing & Gould 1979). In the ensuing DSM-IV, published in 1994, diagnostic criteria centred on three domains (referred to colloquially as the 'triad of impairments'): deficits in social interaction, impairments in communication, and the presence of repetitive/restricted behaviours and interests

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<sup>2</sup> Two diagnostic systems, namely, the DSM and the International Classification of Diseases (ICD; World Health Organisation, 2019), are used by clinicians and researchers to identify and diagnose autism. The evolution of the criteria for autism in these manuals broadly mirror each other. However, given that the DSM is more influential in research (Fletcher-Watson & Happé, 2019), it is focused upon in this thesis.

(APA, 2000). Deficits in social interaction referred to a lack of social interaction and a failure to develop relationships with others as well as impaired use of non-verbal communicative behaviours. Communication impairments encompassed delayed or atypical use of verbal communication as well as a lack of age-appropriate make-believe play. Repetitive/restricted behaviours and interests referred to stereotypic movements and use of objects, preoccupation with narrow interests, and insistence on adhering to routines in everyday activities. Additionally, there was a requirement for an age of onset before three years of age. In an effort to capture heterogeneity, three autism related diagnoses were included: autistic disorder, Asperger's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). To attain a diagnosis of autism, individuals needed to meet two criteria in the social domain as well as one each in the communication and repetitive/restricted behaviour domains. PDD-NOS was diagnosed when some but not all criteria for autistic disorder were met (e.g., later age of onset). Asperger's disorder was distinguished from autistic disorder by the absence of delays in cognitive and early language development. This widening of the criteria via multiple diagnostic subcategories enabled, for the first time, a broader range of individuals, including those without language or cognitive delay and those with a later age of onset, to be identified as autistic. However, there was much debate regarding whether these new subcategories could be separated from each other in a reliable and empirical fashion (particularly when intellectual functioning was equivalent), and if so, whether this differentiation had meaningful research or clinical importance (McPortland et al., 2014).

The 2000's saw further recognition of the variability of the autistic presentation, both between individuals and within individuals, depending on differing life stages and environmental contexts, as well as notable changes in the way such heterogeneity was conceptualised. In the DSM-5, published in 2013, the DSM-IV subcategories were collapsed, and the new umbrella term autism spectrum disorder was officially introduced (APA, 2013). The triad of impairments was reduced to two broader domains: deficits in social communication and interactions, as well as restricted, repetitive patterns of behaviours, interests, and activities. For the first time, autistic characteristics

within these domains were explicitly described in terms of graduations (Scahill et al., 2014). The social domain referred to varying degrees of deficits in social emotional reciprocity, use of non-verbal communication behaviour, and developing, maintaining, and understanding relationships. The restricted, repetitive patterns of behaviours, interests, and activities domain similarly described a range of behaviours related to stereotyped or repetitive motor movements, need for sameness, highly restricted or fixed interests, and hyper- or hypo- sensory reactivity. The criterion that characteristics be present in early life was retained but it was acknowledged that for some individuals these may not be fully manifest until later or alternatively be masked by learnt strategies. Finally, intellectual and language impairments were specified as conditions occurring concurrently with autism. This widening of the criteria further opened the possibility of diagnosis to a broader range of individuals, especially those with less overt characteristics, those whose coping strategies camouflaged their autistic characteristics, and those who missed diagnosis or were misdiagnosed earlier in life.

As a result of these substantial changes to the diagnostic criteria, occurring over the last 40 years, today's cohort of autistic adults is larger and more heterogeneous than any previous cohort to date. Some in this cohort, diagnosed in childhood using more narrowly defined criteria, may exemplify a narrow autism phenotype associated with more overt behavioural characteristics, male sex, and/or cognitive impairment. However, an increasing proportion, especially women and those diagnosed in adulthood, fall outside of this narrow phenotype having been diagnosed using the most recent and broadest autism diagnosis criteria to date. Arguably, much of the current understanding of autism in adulthood is based on research excluding this latter group (Happé et al., 2016). Nonetheless, current research suggests that whilst autistic adults possess unique cognitive and interpersonal strengths and abilities (e.g., Attwood, 2007; Charman et al., 2011) they also face challenges in multiple domains including social participation and relationships (Billstedt et al., 2011; Orsmond et al., 2013), employment (Gotham, 2015), and mental health (Lever & Geurts, 2016). Yet, the lived experiences of many members of today's cohort likely differ from that of previous cohorts

and thus renewed research endeavours generating autism knowledge via the exploration of such experience is needed. Moreover, major shifts are occurring in the way such autism knowledge is constructed (Pellicano & den Houting, 2021).

### **The Medical Paradigm of Autism**

Traditionally, definitions of autism, as well as traditional lines of research about autistic people are rooted within the medical model of disability (Llewellyn & Hogan, 2000). Medical models of disability parallel medical models of disease and dichotomous understandings of 'healthy' (i.e., not diseased) and 'sick' (i.e., diseased; Rioux & Bach, 1994). Such models assume the existence of standard or normal human abilities and define disability in terms of deviance from normal ability. In this way, normative abilities are assumed ideal whereas deviant abilities are viewed as inferior (Akhtar & Jaswal, 2013). Disability is located within the individual such that it is solely attributed to the individual's 'undesirable' or 'unfortunate' physiological or psychological state. Consequently, intervention under the medical model focuses on remediating the individual's physiological or psychological state, thereby bringing their abilities into line with the norm (Pellicano & den Houting, 2021).

In keeping with the medical model, and as outlined in the previous section, the most widely used definition of autism, located in the DSM-5, frames autism as a deficit. As noted above, autism is termed, 'autism spectrum disorder' and classified under the umbrella of neurodevelopmental disorders. Autism characteristics are termed 'symptoms' and described as a series of deficits displayed by individuals. Diagnosis is conditional on these 'symptoms' causing, "clinically significant impairment in social, occupational, or other important areas of current functioning" (APA, 2013, p. 50).

This definition of autism, framing autism as a series of deficits located within a person, has motivated several lines of research seeking to establish the genetic, neurological, and cognitive mechanisms underpinning autistic behaviour (Pellicano & den Houting, 2021). Biological research has identified several genetic, neurological, and other biological features that vary between autistic

and non-autistic people and/or dimensionally with specific autistic behaviours (Fletcher-Watson & Happé, 2019). Differences in total brain volume, as well as specific brain regions including the frontotemporal and frontoparietal regions and amygdala, have been identified and attempts have been made to link these to the behavioural characteristics of autism (Ecker et al., 2015). Research investigating why such brain differences occur has clearly established the strong genetic component of autism with heritability estimated between 64-94% (Tick et al., 2016). In this regard, a mixture of common, inherited mutations found in the general population as well as specific and rare de novo mutations are associated with autism (Gaugler et al., 2014). Another line of research investigating gene-environment interplay has implicated several environmental factors associated with autism including birth complications involving reduced blood/oxygen supply or trauma, maternal diabetes and advanced paternal age (Modabbernia et al., 2017). However, whilst a range of genetic, neurological and environmental factors have been implicated in the development of autism, no one accepted biologically based explanatory model of autism currently exists.

Cognitive based research has attempted to explain the cognitive processes or mechanisms through which an autistic person's biology translates into behaviour (Morton & Frith, 1995). Several highly influential models of autism have been proposed. For example, the Theory of Mind (ToM) model, suggests deficits in social and communication behaviours exhibited by autistic people are underscored by difficulties attributing mental states to oneself and others (Baron-Cohen et al., 1985). Another model, the social motivational theory, suggests that autistic behaviours result from deficits in psychological and biological mechanisms that ordinarily lead a person to preferentially orientate to social stimuli, seek and enjoy social interactions, and work to develop and maintain social connections (Chevallier, Kohls, et al., 2012). A different explanation posits that deficits in executive functioning abilities (i.e., higher order cognitive processes including planning, inhibition, working memory, and mental flexibility) cause both social and non-social autistic behaviours (Hill, 2004a, 2004b; Pennington & Ozonoff, 1996; Russell, 1997). However, to date, there is no one



accepted cognitive theory of autism and indeed competing theories are contested owing to a lack of evidence, sensitivity, universality, and/or parsimony (Fletcher-Watson & Happé, 2019).

Also aligned with the medical model of autism are most lines of autism intervention research. Interventions aimed at improving the lives of autistic people typically aim to do so by targeting the acquisition of normative skills, by eliminating atypical behaviours, and by striving for the achievement of normative outcomes, for example, mainstream school placements; normal range performance on measures of intelligence, social skills or psychological functioning; and the establishment of normative social relationships (e.g., romantic relationships; Laugeson et al., 2012; Sandbank et al., 2020). For example, 'early' autism interventions, may aim to improve the cognitive, behavioural, emotional, and relational skills of young children whilst reducing their repetitive, inflexible or (often perceived) harmful behaviours (Schuck et al., 2021; Leadbitter et al., 2021). Social skills interventions, typically used with older autistic children and adults, focus on teaching normative verbal and non-verbal social interactions skills (Gates et al., 2017). Cognitive Behavioural Therapy (CBT) targeting co-occurring anxiety and depression, encourages autistic people to change the way they think about and respond to real or perceived distressing stimuli (Kennerley et al., 2016). Some autism interventions have controversial and distressing histories (see Dawson, 2004; Lynch, 2019) and/or are limited in quality and quantity of evidence, however, many others are associated with improved (normative) outcomes (Bemmer et al., 2021; Dubreucq et al., 2021; Kester et al., 2018; Sandbank et al., 2020; Sukhodolsky et al., 2013).

These traditional lines of biological, cognitive, and intervention research, grounded in the medical model, can and have yielded important breakthroughs in our understanding of autism and have led to tangible improvements in the lives of many autistic people. However, autistic advocates and scientists and, more recently, elements of the wider scientific community, have raised several important criticisms of the medical model and associated approaches to knowledge construction (see Pellicano & den Houting, 2021 for a detailed review). Firstly, the medical model ignores well documented autistic strengths and inaccurately characterises autism as a series of limitations

rendering autistic people incomplete or lacking in comparison to non-autistic people (Pellicano & den Houting, 2021 see also Farahar, 2022). In doing so, the medical model may unintentionally promote the dehumanisation, stigmatisation, and/or maltreatment of autistic people (Botha, 2020; Dawson, 2004). Secondly, medical models unduly focus on the individual without due consideration of the role that broader social and environmental factors play in shaping autistic ability and experience (Kapp, 2019; Pellicano & den Houting, 2021). Thirdly, research endeavours using medical models inherently privilege the perspective and priorities of the non-autistic medical and research authority over those of autistic people themselves (Jaswal & Akhtar, 2018; McGeer, 2004; Milton, 2012; Pellicano & den Houting, 2021). As a result, efforts are increasingly being made to move beyond the limitations of the medical model via research exploring both autistic strengths and difficulties, considering the broader social context, and including autistic voices. Yet, given its central role in diagnosis and clinical practice, the medical model continues to influence how many members of the autistic and general community alike think and communicate about autism (Chapple et al., 2021; Kapp, 2020).

### **The Neurodiversity Paradigm of Autism**

In the contrast to the medical paradigm, the neurodiversity paradigm assumes that variability in neurological development and functioning, between all people as well as in cases of specific neurodivergence (e.g., autism, ADHD, dyslexia), is a natural and valuable form of human diversity (Amundson, 2000; Jarasma & Welin, 2021; Kapp, 2020). Where disability arises for neurodivergent people, this is the result of a complex interplay between individual and society, that is, a poor fit between nonstandard individual characteristics and an unaccommodating sociocultural environment (Lai et al., 2020). The neurodiversity movement emerged in the 1990's from the work of autistic advocates, in the context of the broader disability rights movement and relates to the social model of disability (Shakespeare, 2006). Neurodiversity proponents assert that divergent neurodevelopment is not inherently inferior to typical neurodevelopment and thus autistic characteristics should not be framed as pathological on the basis that these vary from the norm. This

perspective does not exclude the use of all interventions in improving the lives of autistic people, rather only opposes those that aim to 'normalise' people or eliminate autistic traits (Bertilsdotter Rosqvist et al., 2020; den Houting, 2019). The movement is inclusive of all autistic people (and other neurodivergent people) including those with the highest and most complex support needs, explicitly asserting that all people should be seen as equal and treated with respect and dignity regardless of whether or how they diverge from the norm (de Houting & Pellicano, 2021; Runswick-Cole, 2014). Several important concepts, theories, and frameworks relating to the neurodiversity paradigm are discussed below.

### ***Double Empathy Problem***

The double empathy problem (DEP) proposes that owing to their differences in perceiving, experiencing, and relating to the world, both autistic and non-autistic people experience communication, reciprocity, and rapport problems during cross-neurotype social interactions (Milton, 2012; Milton et al., 2018). Autistic and non-autistic people differ in their use of, for example, pragmatic language (e.g., de Villiers et al., 2007; Sng et al., 2020), eye gaze (e.g., Papagiannopoulou, et al., 2014), facial expressivity (Faso et al., 2015), and gesture (e.g., de Marchena & Eigsti, 2010). Just as autistic people have difficulties in inferring non-autistic mental states, understanding non-autistic social communication, and maintaining social reciprocity with non-autistic people (e.g., APA, 2013; Baron-Cohen et al., 1997; Frith & Happé, 1994), non-autistic people likewise experience difficulties in inferring autistic mental states (Edey et al., 2016), identifying autistic facial expressions (Sheppard et al., 2016), maintaining reciprocity (Gernsbacher, 2006) and effectively sharing information and building rapport with autistic (compared to non-autistic) peers (Crompton, Ropar, et al., 2020). Moreover, autistic people demonstrate successful and attuned, yet non-normative, communication in interactions with others of a similar neurotype (i.e., 'neurodivergent intersubjectivity'; Heasman & Gillespie, 2019; Crompton et al., 2019; Morrison et al., 2020). Accordingly, the double empathy problem suggests the social communication problem historically associated with autism is not a singular problem located within an autistic individual but

rather a “double problem” experienced by autistic and non-autistic people alike within cross-neurotype interactions (Milton et al., 2012, p. 884). Yet, the onus is overwhelmingly placed on the autistic person to overcome this “double problem” by modifying themselves owing to the preponderance of the medical model throughout society.

### ***Autism Related Stigma***

In Goffman’s early, yet still widely influential and much cited work, stigma is described as an extensively discrediting attribute that reduces an individual, “from a whole and usual person to a tainted, discounted one” (Goffman, 1963, p. 3). More recent, explanations of stigma, however, conceptualise stigma as a multi-stage process (Link & Phelan, 2001). Specifically, dominant and powerful groups distinguish and label particular types of human variation as important and link these variations to negative stereotypes. Based on the presence of labelled variations, labelled persons are linked to negative stereotypes; separated into groups (‘them’) distinct from the powerful (‘us’); and subjected to status loss and discrimination. Stigmatised variation can range from more visible (e.g., race, sex, physical disability) to more concealable (e.g., sexual orientation, gender identity, socio-economic status; Goffman, 1963). Similarly, the degree to which society perceives a characteristic to be changeable varies from more immutable (e.g., race) to more mutable (e.g., mental illness; Yoshimo, 2006). Stigma management strategies available to and used by various stigmatised individuals vary widely depending on the visibility and perceived mutability of their labelled variation as well as the socio-cultural environment in which they are located. Sometimes a distinction is made between individualistic and collectivist strategies (Tajfel & Turner, 2004). Individualist strategies may broadly include converting one’s variation so as to become a ‘legitimate’ member of the powerful group (converting); concealing one’s variation so as to pass as a member of the powerful group (passing); and disclosing yet downplaying or augmenting the expression one’s identity so as to be more palatable to the dominant group (covering; Yoshimo, 2006). Collectivist strategies involve positively re-defining one’s group via, for example, social activism or community education (Tajfel & Turner, 2004).

Autism can be conceptualised as a stigmatised identity that, similar to some other stigmatised identities (e.g., mental illness; Quin et al., 2004), itself exists on a continuum from conspicuous to concealable, depending on an individual's particular profile of autistic behaviours as well as their ability to conceal these behaviours. Considerable evidence demonstrates that non-autistic people hold negative stereotypes about autism and form more negative judgments about, and less positive behavioural intentions towards, individuals displaying autistic behaviours than individuals without autistic behaviours (e.g., Campbell et al., 2004; Dickter & Bark, 2021; Morison et al., 2019; Sasson et al., 2017; Sasson & Morrison, 2019). Moreover, the lived experiences of autistic people consistently demonstrate that they encounter stigma in multiple real-world settings (Botha et al., 2020; Botha & Frost, 2018; Cage et al., 2018; Cameron, 2014; Lee et al., 2021) and use a range of strategies to manage stigma including those related to passing, self-advocacy, and activism (Han et al., 2021).

### ***Inclusion of the Autistic Perspective in Research***

Traditionally, 'accepted' knowledge of autism originated from the observations and ponderings of professionals who lacked lived experience of being autistic (Nicolaidis, 2012). Indeed, under medical models, the ability of autistic people to meaningfully describe or even know what autism is, is deemed limited on the basis of their perceived cognitive deficits (i.e., impaired ToM; Botha, 2020; Milton, 2014). Increasingly though, not least because of the work described above, which has been largely developed and progressed by autistic advocates, academics, and activists, autistic expertise is being valued in the construction of autism knowledge. Such change is reflected in the significant rise of research exploring the lived experienced of autistic people via qualitative methods as well as broader shifts throughout (some parts of) the field towards participatory research frameworks.

Participatory research is an umbrella term referring to a range of approaches that employ inclusive and community-engaged practices (i.e., engage intended beneficiaries, users, and stakeholders of research in the research process, not solely as subjects of research; Cargo & Mercer,

2008). Inclusive practices involve adapting research environments, data collection activities or dissemination methods to enable wide reaching and accessible engagement in research (Fletcher-Watson et al., 2019). Community-engaged practices involve academic partners and community partners working together such that community partners provide input into any, but ideally all, stages of the research process (den Houting et al., 2020). In the case of autism research this may involve autistic researchers leading projects, researchers partnering with the autistic community to co-create projects, or researchers consulting with the autistic community about projects (Fletcher-Watson, 2019). Readdressing power imbalances between researchers and community members is a key principle of participatory research and as such participatory research is often depicted as existing in power hierarchy. This hierarchy ranges from no power (e.g., therapy) to tokenism (e.g., informing and consultation) through to citizen power (e.g., community-led research; Arnstein, 1969). However, this approach of evaluating participatory research on the sole basis of power has been criticised for failing to recognise that participation may be a goal in and of itself and that the process of community engagement and diversity of experience in community engagement are important in addition to the outcome of community engagement (Tritter & McCallum, 2006).

There are many tangible benefits of participatory research. Participatory research ensures the rigour and usefulness of autism science by improving the quality of research methods, real-world validity of findings, and translation of findings into practice (Carrington et al., 2016; Parr, 2016; Parsons & Cobb, 2013). Additionally, participatory research promotes ethical practice by enabling autistic people to contribute to research that affects their lives and thus ensures that research is informed by the values of the autistic and broader autism communities (Fletcher-Watson, 2019; Pellicano, Lawson, et al., 2021). Recent prominent examples of participatory autism research projects include those exploring the mental health experiences of young autistic adults (Crane et al., 2018); defining the research priorities of the autism and autistic communities (Cusack & Sterry, 2016) and exploring best practice participatory autism research (e.g., Ashworth et al., 2021; Fletcher-Watson, et al., 2019; Nicolaidis et al., 2019). However, despite this progress, it is important

to acknowledge that challenges and structural barriers remain, especially for early career researchers (Pickard et al., 2021), and participatory research is not yet prevalent throughout the entire autism field (Raymaker & Nicolaidis, 2013).

### **Camouflaging**

One line of research emerging against the backdrop above, and aligning with the autistic community's priority of increased understanding into the mental health, quality of life, and social aspects of autism, is that of social coping (Pellicano et al., 2014). Social coping research examines ways in which autistic people adapt to, cope within, and influence the predominately non-autistic social world. To date, most of this research has focused on camouflaging.

Precise definitions of camouflaging vary. In this thesis, camouflaging (also variously referred to in the literature as compensation, masking and adaptive morphing) is defined as the employment of specific behavioural and cognitive strategies by autistic people to adapt to or cope within the predominately non-autistic social world (Hull et al., 2017; Lai et al., 2011; Lawson, 2020; Livingston & Happé, 2017; Pearson & Rose, 2021). Camouflaging may enable an individual to, consciously or unconsciously, present a seemingly non-autistic social style, hide autistic characteristics, and/or minimise the visibility of social difficulties (Hull et al., 2017; Lawson, 2020). Such strategies can involve masking autistic behaviours and/or employing compensatory strategies to overcome social difficulties (Hull et al., 2019; Livingston, Shah, & Happé, 2019). Common examples of camouflaging strategies include suppressing repetitive hand movements, forcing eye contact, using conversational scripts, and using learned rules to respond to others' non-verbal behaviour. A related concept that evolved concurrently with camouflaging is that of compensation (Livingston & Happé, 2017). Compensation has a more specific focus on cognition and refers to the use of alternative cognitive routes to demonstrate a less autistic behavioural presentation despite persisting autism-related difficulties or differences in cognition (e.g., in social reasoning). Within the literature, compensation is generally (but not always) theorised to fall under the broader phenomena of camouflaging (Hull, Petrides, & Mandy, 2020; Livingston, Shah, & Happé, 2019). For clarity, in this thesis I use the term

camouflaging to refer to compensation, masking, and adaptive morphing, given this term is most used in the field to date and the terminology preferences of the autistic community as a whole are yet to be established. However, I acknowledge that some autistic scholars prefer other terms and return to this issue in the general discussion of this thesis (Lawson, 2020; Pearson & Rose, 2021). Further, I support calls for further consultation with the autistic community regarding terminology moving forward (Lai et al., 2020).

Descriptions of camouflaging first appeared in clinical and autobiographical writings; usually to describe and explain the presentation of autistic girls and women, as well as the often under-recognised diagnostic and support needs of this group. Autistic girls and women (and some autistic boys and men) described using social strategies to adapt to the demands of their social environment, thereby camouflaging their social difficulties and differences (Attwood, 2007). Initially, these strategies were thought to predominately involve the effortful performance of non-autistic social behaviour, learnt over time through careful observation and imitation (Attwood, 2007; Gould & Ashton-Smith, 2011; Kopp and Gillberg, 1992; Holliday Willey, 1999). However, this often exhausting and stressful camouflaging was seen as masking rather than resolving underlying social difficulties.

These clinical and autobiographical writings stimulated qualitative research aimed at conceptualising camouflaging by exploring the lived experiences of autistic girls and women (e.g., Cridland et al., 2014; Bargiela et al., 2016; Tierney et al., 2016), but also boys, men, and non-binary people (e.g., Hull et al., 2017; Livingston, Shah, & Happé 2019). Across this research, autistic people provided rich and detailed accounts of camouflaging, significantly advancing the field. Importantly, findings suggested that many autistic people of all genders use camouflaging to navigate the predominately non-autistic world, often at great personal cost.



A burgeoning body of cross-sectional quantitative work has recently emerged, designed to test important hypotheses generated by the qualitative camouflaging literature. In seeking to operationalise and measure camouflaging, several novel measurement methods developed in parallel. These methods broadly fall under two categories: internal-external discrepancy and self-report approaches (Hull et al., 2019). Internal-external discrepancy approaches focus on quantifying the degree to which an individual's autistic social difficulties or differences are camouflaged during an interaction; that is, quantifying the difference between an individual's 'true' autistic state and their observable behavioural presentation (e.g., Lai et al., 2017, 2019). In contrast, self-report approaches focus on quantifying an individual's use of specific camouflaging strategies or behaviour via self-reflection (e.g., Hull et al., 2019; Livingston et al., 2020). Using both internal-external discrepancy and self-report approaches, quantitative research has focused on quantifying camouflaging in children and adults as well as testing associations between camouflaging and various other constructs including gender, age, autistic traits, anxious/depressive symptoms, and cognitive abilities.

Yet, due to the emerging nature of the field, conceptualisations, definitions, and measures of camouflaging are in their infancy; relationships between camouflaging and other constructs above remain unclear; and recent discussion and commentaries highlight several potential methodological problems across studies (Fombonne, 2020; Lai et al., 2020; Williams, 2021).

## **Conclusions**

Owing to substantial changes in the diagnostic criteria for autism, today's cohort of autistic adults is larger and more heterogeneous than any previous cohort to date. The lived experiences of many members of today's cohort likely differ from that of previous cohorts and thus renewed research endeavours generating autism knowledge via the exploration of such experience is needed. At the same time, traditional medical model definitions of and approaches to investigating autism are increasingly criticised and major shifts are occurring in the way autism knowledge is constructed

(Pellicano & den Houting, 2021). Consequently, several new theories and concepts related to social models of autism have emerged (e.g., neurodiversity, the double empathy problem, stigma, and autistic perspectives). A line of research that has recently emerged against this backdrop examines ways in which autistic people cope, adapt to, and influence the predominately neurotypical social world by camouflaging (Dean et al., 2017; Hull et al., 2017; Lai et al., 2017; Schuck et al., 2019). Existing findings suggest that many autistic people of all genders use a diverse range of camouflaging behaviours and strategies in order to secure employment, develop friendships and romantic relationships, and avoid stigmatisation, but often at great personal cost. In progressing the field, it is important to identify consistencies within the current evidence base as well as issues that require additional research. Further, in seeking to improve the overall wellbeing of autistic people, it is important to refine conceptualisations of camouflaging and better understand the mechanisms through which camouflaging may lead to disparate social, functional, and health outcomes. Similarly, there is a need to explore other social coping strategies used by autistic people.

### **Aims of Thesis**

The aims of the thesis are to:

1. Provide a comprehensive and critical evaluation of the current quantitative camouflaging research base;
2. Refine the conceptualisation of camouflaging;
3. Investigate the consequences of camouflaging with regard to social and employment outcomes and indicators of psychological distress and mental health difficulties;
4. Explore an alternative to camouflaging, that is, autistic people's experiences of socialising in ways that feel authentic to them.

## **Chapter 2: Methodological Considerations**

The current chapter provides an overview and discussion of methodological issues that underpin the entire thesis, with a detailed justification and description of specific methods provided in each respective empirical chapter. Chapter 2 begins by outlining the philosophical perspective adopted in the current thesis. A justification for mixed-methods approaches is then provided, followed by a discussion on ensuring quality in mixed-methods research. A statement regarding my professional and personal positionality is then provided. Finally, I discuss methodological considerations related to participatory research design and self-identification.

### **Philosophical Perspective**

A philosophical perspective is a set of assumptions that structure a researcher's approach including their aims, methodology, methods of data collection and methods of analysis (Moon & Blackman, 2014). A researcher's philosophical perspective is shaped by their discipline, beliefs, and experiences (Creswell, 2009). It is uncommon for a researcher to commit to one philosophical perspective and all its associated assumptions (Bietsa, 2010). Researchers often resonate with multiple philosophical perspectives and change their perspectives toward their research over time (Moses & Knusten, 2012). Moreover, general philosophical perspectives are not necessarily mutually exclusive.

Understanding and explicitly stating one's philosophical perspective is important in ensuring research is clear, coherent in research design, and defensible in terms of knowledge generated. Two concepts closely related to philosophical perspectives are ontological and epistemological stances, i.e., beliefs held by researchers about the existence of reality as well as how and what knowledge can be produced about reality. Several general philosophical perspectives exist, some of which are viewed as being interchangeable with epistemological or ontological stances (Tashakkori & Teddlie, 2010; Denzin & Lincoln, 2011). These philosophical perspectives occur on a continuum from naïve realism (akin to positivism) which suggests the existence of one independent reality that can be

known with greater or less accuracy, to radical relativism which rejects concepts such as reality and knowledge altogether (Willig, 2013).

The philosophical perspective approach adopted in this thesis is that of critical realism. The term 'critical realism' is often associated with one specific version of realism popularised by Roy Bhaskar (e.g., Bhaskar, 2009; Bhaskar & Hartwig, 2016). However, the term critical realism is used here to refer more broadly to realist philosophies that combine ontological realism and epistemological relativism (e.g., critical realism, subtle realism, natural realism; Maxwell, 2012). Specifically, these perspectives postulate the existence of a singular reality that exists independently of our ideas, theories, and descriptions of it (ontological realism) but suggest that our subjective understanding of this reality is constructed from our own perspective and standpoint (epistemological relativism). In this way, the possibility of finding an objective truth is rejected in favour of the possibility of multiple valid accounts of phenomena. Thus, all knowledge is partial, incomplete, and interpretable and all theories are shaped by particular perspectives and world views.

As such, in the current thesis it is acknowledged that multiple valid perspectives of social coping in autistic people are possible. Data provided by participants are not assumed to represent an objective or certain view of reality, rather, they are assumed to represent a perspective of reality mediated by characteristics and experiences of the individual as well as features of the wider social context. I have an active role in collecting and interpreting data and it is acknowledged that my role is similarly shaped by my individual characteristics and experiences as well as features of the wider social context. In this thesis I aim to generate coherent and compelling, yet partial, knowledge about social coping in autistic people grounded in participants' perspectives, and to situate this knowledge with reference to my own perspective and worldview (discussed later in this chapter).

### **Rationale for Methods**

In seeking to address my research aims, a mixed methods approach was used. Mixed methods research involves 'mixing' qualitative and quantitative data to produce a fuller and richer

account of a phenomenon (Glogowska, 2011; Zhang & Creswell, 2013). Specifically, an embedded or nested research design was used such that three types of data were collected and analysed using three different techniques, to answer complementary research questions. Whilst the justification for each specific method is presented in the corresponding chapter, here I provide a justification and rationale for the overarching mixed methods approach.

It is important that methods be determined by the research questions and the nature of the phenomenon under investigation (Downward & Merman, 2006). In the broadest sense, this thesis is concerned with explaining social coping in autistic people; a social phenomenon with both quantifiable and non-quantifiable properties, located within a social interaction but also arising from and impacting upon an individual's internal experiences. In seeking to explain such a complex social phenomenon located within a complex open system, a mixed methods approach involving different layers of data was seen as particularly justified and beneficial in developing a systematic explanation via ensuring completeness (i.e., exploring the broadest possible range of perspectives in formulating an explanation) and diversity (i.e., obtaining divergent views in formulating an explanation; Zachariadis et al., 2013).

It is also important that methods align with underlying philosophical perspectives. In this sense, the mixed methods approach taken here aligns with critical realism philosophy, which suggests that reality is best understood via the examination of multiple outlooks (McEvoy & Richards, 2006; Maudsley, 2011). Although it is important to note that, as outlined in Table 1, each of the methods employed here were developed from differing research paradigms with differing epistemological perspectives. Therefore, the methods make different assumptions about data, knowledge, reflexivity, and quality. At one end of the continuum sits Chapter 6, a study using quantitative methods grounded in a post-positivistic epistemological perspective that strives to uncover objective knowledge whilst acknowledging actual knowledge generation is imperfect and impacted by researchers' values and culture (Guba & Lincoln, 1994). At the other end of the continuum sit Chapter 4 and 7; studies using Big Q qualitative methods grounded in contextualism; a

stance that suggests knowledge cannot be separated from the knower (and their values and culture) and strives to generate subjective and partial knowledge (Madill et al., 2000). Chapter 5 sits in the middle of the two, using Small Q qualitative methods from a post-positivistic epistemological perspective that more explicitly acknowledges the role of participant and researcher factors in mediating knowledge than the post-positivist epistemological stance of Chapter 6. Critical realism embraces such different paradigms as providing differing explanations of reality, however it cautions against uncritically following all assumptions of competing paradigms (Mingers, 2001).

Thus, in the current thesis, whilst employing methods from various paradigms, my assumptions are grounded in the critical realist philosophy. Specifically, I view different paradigms as providing alternative outlooks on reality. I assume that all knowledge created via all paradigms is subjective, partial, and open to interpretation and therefore I place equal weight on knowledge generated by all paradigms and place central importance on researcher reflexivity across paradigms.

**Table 1***Overview of Assumptions Underlying Methods in Empirical Chapters*

	Chapter 6	Chapter 5	Chapters 4 & 7
Aims of the research	To quantify the relationship between camouflaging and (1) various indicators of social and employment functioning and (2) indicators of psychological distress/mental health difficulties.	To identify and describe camouflaging behaviours operating within conscious awareness.	To detail processes underlying camouflaging behaviours and capture experiences of camouflaging (Chapter 4). To capture experiences of authentic-feeling socialising (Chapter 7).
Data collected	Numerical scores based on responses to questions in psychometric questionnaires.	Interview transcripts based on a semi-structured interview.	Interview transcripts based on a semi-structured interview (Chapter 4). Transcripts of written responses to open-ended questions in a survey (Chapter 7).
Analysis	Various statistical analysis (quantitative)	Content analysis (Small Q qualitative)	Reflexive thematic analysis (Big Q qualitative)
Assumptions about data and knowledge produced	Data are straightforward reflections of participants' camouflaging, mental health/distress, and social and employment functioning. Uncovering objective knowledge is strived for.	Data are straightforward reflections of participants' beliefs about their behaviours. Uncovering objective knowledge is strived for.	Data represent meanings about camouflaging and authentic-feeling socialising co-constructed by participants and researchers in a particular context. Objective knowledge is not possible. Subjective knowledge is created.
Assumptions about role of reflection	Reflection involves researchers setting aside assumptions and prior knowledge to avoid influencing the emergence of objective knowledge.	Reflection involves researchers setting aside assumptions and prior knowledge to avoid influencing the emergence of objective knowledge.	Reflection involves researchers continuously and thoughtfully interrogating their influence in the production of knowledge.
Examples of accepted indicators of quality	Representative samples; justified, appropriate, validated, reliable measures; complete outcome data; confounders accounted for in design and analysis (Hong et al., 2018)	Codebooks for coding; multiple coders; resolving coding inconsistency through consensus (Braun & Clarke, 2021)	Reflexive journaling; rigorous and systematic but recursive engagement with data; extended engagement with data; insight on data sought from peers, supervisors, and co-researchers (Braun & Clarke, 2021)

### **Ensuring Quality**

Tension exists regarding ensuring quality in mixed methods research employing opposing paradigms. I have taken a practical stance here, advocated by Creswell and Plano Clark (2011). Specifically, the quality and rigour of each chapter was ensured using criteria aligned with its respective research paradigm (i.e., quantitative, Small Q, and Big Q paradigms). Each paradigm uses different data and/or analysis techniques to create alternative forms of knowledge and thus each require different research activities that can be conducted to a higher or lower standard. Therefore, whilst I deny that knowledge created via different paradigms is more or less accurate, I accept knowledge can be of higher or lower quality and that high quality knowledge is created through following best practice.

### **Researcher Positionality**

As discussed above, researcher reflexivity is central to critical realism given the assumption that the knowledge that researchers construct is shaped by their individual characteristics, experiences, and perspectives as well as by the broader social context in which they are situated. Reflexivity is considered vital to ensuring the quality and trustworthiness of research and involves a researcher exploring (and to a certain extent) stating their general social position and disciplinary background as well as their specific positionality with respect to the research topic under investigation (Wilkinson, 1988; Wacquant & Bourdieu, 1992; Horsburgh 2003). Given that this thesis is underpinned by critical realism, I have reflected upon how my own individual characteristics, experiences and perspectives, as well as the broader research context, have influenced my entire thesis, not just chapters using paradigms grounded in contextualistic epistemology. Key information regarding my positionality is stated below.

### ***Professional Positionality***

I have worked within the autistic and broader autism communities for the last 12 years. Initially, I worked for several early intervention services in a range of roles involving, for example, the implementation of interventions on a day-to-day basis and helping parents to navigate early



intervention services. Through these roles, particularly those involving day-to-day implementation of interventions, I developed close relationships with a small group of autistic children and their families. As is commonly the case, the framework underlying these services aligned with medical models of autism. Thus, these services predominately aimed to improve the lives of young autistic children by improving their cognitive, emotional, and relational skills. However, within these services, a range of beliefs and philosophies were held by staff about autism and autistic people, some of which aligned with the neurodiversity paradigm. During this time, I also completed an undergraduate degree in psychological science that had a broad focus and involved many areas of psychology including for example, social, developmental, organisational, and cognitive psychology.

I then completed post-graduate training in clinical psychology. My training focused on assessing and treating a wide range of presenting difficulties in people aged across the lifespan using evidence-based assessment tools and therapeutic interventions. Again, this training predominately aligned with the medical model of health and disability, focusing on, for example, improving individuals' anxiety or depression by assisting them to change the way they think about, and respond to, real or perceived distressing stimuli. It was during this time that I became involved with a specialist psychology clinic that provided a range of psychological services for autistic people across the lifespan. During my training, I completed a placement and conducted my research project through this clinic. After my training I worked at this clinic for several years as a clinical psychologist providing a range of psychological services to autistic people. My time at this clinic was very influential on me in terms of my understanding of, and beliefs about, autism. In this regard, the ethos of this clinic aligned with neurodiversity such that many of the services provided focused on improving person-environment fit by, for example, skills building, psychoeducation, and systemic approaches. Moreover, by spending several years listening to and trying to empathise with my autistic clients, I developed a degree of understanding regarding issues faced by autistic people on a day-to-day basis. It was during this time that I developed an interest in social coping and decided to pursue a PhD focused on camouflaging.

As discussed in the introduction, I completed this PhD whilst the field of autism was undergoing major transformation. Autistic advocates and scientists, and factions of the wider scientific community, had raised several important criticisms of the medical model and associated approaches to knowledge construction regarding autism. Moreover, efforts were increasingly being made to move beyond the limitations of the medical model via research exploring both autistic strengths and differences, considering the broader social context, and including autistic voices. Consequently, several important new concepts, theories, and frameworks emerged within the field.

With regard to my personal beliefs regarding autism, I align with the neurodiversity paradigm of autism, which asserts that (1) variability in neurological development and functioning between all people is a natural and valuable form of human diversity; (2) divergent neurodevelopment is not inherently inferior to typical development and thus autistic characteristics should not be framed as pathological on the basis that these vary from the norm; and (3) all people are equal and should be treated with respect and dignity regardless of how or whether they diverge from the norm (e.g., Amundson, 2000; den Houting & Pellicano, 2021; Runswick-Cole, 2014).

### ***Personal Positionality***

Personal positionality is often discussed in terms of insider and outsider status. An insider is described as someone whose personal biography (e.g., gender, class, sexual orientation etc.) affords them lived understanding and knowledge of the topic under investigation (Mercer, 2007). In contrast, an outsider is someone who has no prior lived understanding of the research topic. However, given the multi-faceted nature of social phenomena, it is argued that this insider/outsider dichotomy is better understood as a continuum and that researchers can occupy multiple positions along this continuum simultaneously (Holmes, 2020).

Given the focus in this thesis on autism, my neurology is central to the issue of insider/outsider status. In this regard, I do not identify as an autistic person. Yet, this thesis is also concerned with the relationship between socially marginalised and privileged people and focuses on societal issues related to stigma, acceptance, social communication, and authenticity. In this regard,

my insider/outsider status is more complicated in that I have occupied both positions of social privilege and marginality. Specifically, I am a white heterosexual person of female sex who identifies as a woman. I grew up in a working class family, however I now have a middle class profession. I immigrated to the United Kingdom from Australia three and a half years ago. I have experienced several health conditions. At various time points in my life and to varying degrees I have experienced social stigma related to, for example, being working class and experiencing health conditions. At certain points in my life, as a result of this stigma, I have felt compelled to conceal aspects of myself and my identity. Further, at various points in my life, I have experienced social challenges related to, for example, being unfamiliar with the dominant culture (i.e., as the result of being an immigrant). Given this, I have lived familiarity with some topics explored in this thesis but not others.

### **Other Methodological Considerations**

#### ***Participatory Research***

Throughout this thesis, I endeavoured to employ inclusive and community-engaged practices in line with participatory research frameworks (Cargo & Mercer, 2008). These practices included adapting research environments, data collection activities, and dissemination methods, so as to promote inclusivity. I also endeavoured to engage with autistic researchers and community members at multiple stages of the research process. Specific practices are outlined in each respective empirical chapter and critiqued in the general discussion.

#### ***Self-Identification***

Some members of real-world autistic communities are self-identified (Sarrett, 2016). These individuals recognise autistic traits within themselves but do not meet, or are yet to meet, criteria for a clinical diagnosis. Some of the research reviewed in Chapter 3 included self-identified autistic people. Data from self-identified autistic people were not included in the research conducted in Chapter 4, 5, 6, or 7. Although data were collected from self-identified people in one instance, as a part of a larger collaborative project (see Chapter 6); aspects of these data have been analysed

elsewhere (see Bundy et al., 2021) and plans are underway to analyse the remainder of these data outside of this thesis.

This decision to include only those with formal autism diagnoses in this thesis was made on the basis that this PhD as a whole focuses on the experiences of autistic people with formal diagnoses. It was felt that autistic people with formal diagnoses were the most suitable sample given my novel research questions and the early stage of camouflaging and broader social coping research field. Further, the characteristics and experiences of self-identified and formally diagnosed people may differ in important ways. However, to the best of my knowledge, research examining such differences does not exist. Thus, including formally and self-diagnosed people would have required additional testing and exploration not achievable given the extensive research already included in the current thesis. However, it is acknowledged that self-identified individuals may be particularly adept at camouflaging and further research including self-identified people will aid in illuminating additional perspectives of camouflaging.

### Chapter 3: Camouflaging in Autism: A Systematic Review

#### Abstract

Some autistic people employ strategies and behaviours to cope with the everyday social world, thereby 'camouflaging' their autistic differences and difficulties. This review aimed to systematically appraise and synthesise the current evidence base pertaining to camouflaging in autistic people. Following a systematic search of eight databases, 29 studies quantifying camouflaging in children and adults with autism diagnoses or high levels of autistic traits were reviewed. The multiple methods used to measure camouflaging broadly fell under two different approaches: internal-external discrepancy or self-report. These approaches appear to relate to two distinct but potentially connected elements of camouflaging: observable behavioural presentations and self-perceived camouflaging efforts. While significant variation was noted across individual study findings, much of the existing literature supported three preliminary findings about the nature of camouflaging in autistic people: (1) adults with more self-reported autistic traits report greater engagement in camouflaging; (2) sex and gender differences exist in camouflaging; and (3) higher self-reported camouflaging is associated with worse mental health outcomes. However, the research base was limited regarding participant characterisation and representativeness, which suggests that conclusions cannot be applied to the autistic community as a whole. I propose priorities for future research in refining the current understanding of camouflaging and improving measurement methods.

This Chapter is a version of a peer-reviewed published paper, Cook, Hull, et al. (2021). The full citation for this paper is as follows:

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>

## Introduction

Some autistic people employ strategies and behaviours to adapt to, and cope within, the everyday social world, thereby 'camouflaging' their autistic differences and difficulties (Attwood, 2007). Camouflaging in autism is the focus of a rapidly growing body of research; much of which aims to quantify camouflaging in children and adults as well as test associations between camouflaging and various other constructs including gender, age, autistic traits, anxious/depressive symptoms, and cognitive abilities. Currently, a lack of consensus exists regarding many of these associations. Recent discussions and commentaries highlight potential problems within the field including variations in operationalisations and measurement approaches, under-established validity and reliability across measures, and a lack of representativeness within study samples (Fombonne, 2020; Lai et al., 2020; Williams, 2021). The current chapter, a systematic review, provides a comprehensive and critical evaluation of the current camouflaging research base; identifying consistencies in the current evidence as well as issues that require further research.

As discussed in Chapter 1, early discussions of camouflaging, often focused on autistic girls and women, first appeared in clinical and autobiographical writings (Attwood, 2007; Gould & Ashton-Smith, 2011; Kopp and Gillberg, 1992; Holliday Willey, 1999). However, empirical investigations of camouflaging emerged more recently. Camouflaging research initially involved qualitative methods, examining the lived experiences of autistic girls and women (e.g., Bargiela et al., 2016; Tierney et al., 2016), but also boys and men (e.g., Hull et al., 2017; Livingston, Shah, & Happé 2019). Important insights generated from this qualitative research suggested camouflaging strategies were used by both autistic men/boys and women/girls, often despite negative intrapersonal consequences. A burgeoning body of research has now emerged, quantitatively testing many of the important hypotheses generated in this qualitative work. Using internal-external discrepancy (i.e., observable presentations of camouflaging) and self-report (i.e., self-perceived engagement in camouflaging) measurement approaches, this research has focused on the following questions, which form the basis of the present systematic review.

### **Is Camouflaging Associated With Having High Autistic Traits or an Autism Diagnosis?**

In conceptualising camouflaging, it is important to understand the extent to which camouflaging is specific to autism (Lai et al., 2020). Autistic people report camouflaging to gain employment and education, develop and maintain friendships and romantic relationships, and avoid bullying and ostracism (Cage & Troxell-Whitman, 2019; Hull et al., 2017). Non-autistic people similarly use social behaviour to create desirable social impressions and facilitate positive outcomes in interactions with others (i.e., impression management or self-presentation behaviours; Goffman 1959; Leary, 1995). However, compared to most non-autistic people, autistic people are more likely to experience a mismatch between their natural way of being and the demands of the social environment; the consequence of which may be stigmatisation and discrimination (Botha & Frost, 2020; Lai & Baron-Cohen, 2015; Mandy, 2019; Perry et al., 2021). Aspects of camouflaging may be unique to autism since camouflaging represents an attempt to manage this mismatch between a person's autistic way of being and the non-autistic social environment. Thus, in further refining the construct of camouflaging, it is important to investigate the degree to which camouflaging likely varies as a function of autism diagnosis. Additionally, autism is increasingly viewed as a dimensional condition, representing one end of a continuum of traits that extend throughout the general population (Robinson et al., 2016). On this basis, related to the question of whether autism is specific to those with an autism diagnosis, it is also useful to investigate whether camouflaging likely varies in those without an autism diagnoses, in line with variability in autistic traits (Hull et al., 2017).

### **Are There Sex or Gender Differences in Camouflaging Behaviours?**

The role sex and gender play in camouflaging is increasingly debated (Fombonne, 2020; Lai et al., 2020; Pearson & Rose, 2021). Nonetheless, camouflaging is often discussed in relation to female sex/gender and offered as partial explanation for increased rates of missed or late diagnosis found amongst this group (e.g., Duvekot et al., 2017; Dworzynski et al., 2012; Head et al., 2014; Kirkovski et al., 2013; Lai & Baron-Cohen, 2015; Lehnhardt et al., 2016; Shattuck et al., 2009; Whitlock et al., 2020). To date, much of this discussion has focused on male-female sex/gender

differences without consideration of non-binary genders. One possibility is that due to sex-related differences in cognitive profiles, autistic females may have an enhanced ability to camouflage compared to autistic males (Lehnhardt et al., 2016). Alternatively, compared to autistic boys/men, autistic girls/women may feel more pressure to fit in socially via camouflaging, because of gender-based societal expectations and socialisation experiences (Kreiser & White, 2014; Pearson & Rose, 2021). A further possibility is that autistic individuals of all sexes and genders, including those outside the gender binary, may engage in similar levels of camouflaging due to a mismatch in person-environment fit and related stigma and discrimination. In moving the field forward, it is important to establish a consensus regarding the role of sex and gender in camouflaging.

### **Are Particular Cognitive Abilities or Processes Associated With Camouflaging?**

A considerable degree of heterogeneity exists amongst autistic people regarding general cognitive ability as well as specific cognitive strengths and weakness (Charman, 2011). Relevant to conceptualising camouflaging is the need to investigate cognitive abilities associated with camouflaging. IQ and executive functioning, in particular, have been hypothesised as supporting camouflaging via the facilitation of compensatory cognitive strategies (e.g., using learned social rules or scripts; Livingston, Colvert et al., 2019). It is therefore useful to explore if individual differences in such cognitive abilities account for variability in camouflaging amongst autistic people.

### **Is Camouflaging Related to Current Age or Age at Diagnosis?**

In conceptualising camouflaging, it is important to understand changes in camouflaging across the lifespan. Qualitative research suggests that children, adolescents, and adults engage in camouflaging, although perhaps to varying degrees (e.g., Dean et al., 2017; Halsall et al., 2021; Hull et al., 2017). Age-related fluctuations in camouflaging may relate to, for example, changes in cognitive development, social demands and experiences, and mental health; all of which likely occur throughout development and into adulthood (Hull, Petrides, & Mandy, 2021). Moreover, age-related changes in constructs that may be related to camouflaging (e.g., impression management) are known to occur in non-autistic people (e.g., Pledger, 1992). Thus, in further characterising



camouflaging, it is important to investigate the degree to which camouflaging varies with age. Additionally, a later age at diagnosis may be associated with a greater tendency to adapt to social demands and camouflage social difficulties (Lai & Baron-Cohen, 2015). Alternatively, having had additional time to form a strong autistic social identity, those diagnosed younger in life may feel less pressure to conform to non-autistic social standards via camouflaging (Cage & Troxell-Whitman, 2020). To better understanding fluctuations in camouflaging across the lifespan, it is important to consider the role of age at diagnosis.

### **What is the Relationship Between Camouflaging and Mental Health or Wellbeing Outcomes?**

Consistently high rates of mental health problems are found amongst autistic people across the lifespan (Lever & Geurts, 2016; Simonoff et al., 2008), which are associated with lower social and adaptive functioning (Moss et al., 2015), employment and educational difficulties (Keen et al., 2016; Lounds Taylor et al., 2015), and poorer quality of life (Adam et al., 2019). In the qualitative camouflaging literature, autistic people consistently describe camouflaging as being exhausting and associated with feelings of anxiety, stress, sadness, and identity confusion (Bargiela et al., 2016; Hull et al., 2017; Tierney et al., 2016). Camouflaging may be one factor that makes autistic people more vulnerable to mental health problems. Thus, investigating links between camouflaging and mental health is important in improving the wellbeing and life opportunities of autistic people.

### **Previous Reviews**

Given the early nature of camouflaging research, a lack of consensus remains regarding many of the aforementioned questions. Previous reviews, focused on camouflaging in autistic females, provide partial insights. In an early examination of the field, Alley (2019) reviewed eight studies to identify and explore camouflaging in autistic females. More recently, a systematic review of 13 studies was conducted by Tubío-Fungueriño (2021). This latter review examined camouflaging in autistic females with a focus on the camouflaging process, as well as camouflaging causes and consequences. Finally, Hull, Petrides & Mandy (2020) completed a narrative review of research

examining the female autism phenotype and camouflaging. Across these three reviews, preliminary evidence suggested that for autistic females: camouflaging abilities may be associated with self-control, empathy, and/or feedback abilities; motivators of camouflaging may include societal expectations and feelings of loneliness or isolation; and consequences of camouflaging may include late diagnosis and negative emotions. However, given the focus on autistic females in these reviews, findings cannot be generalised to individuals of all sexes and genders.

Moreover, recent discussions and commentaries (Fombonne, 2020; Lai et al., 2020; Williams 2021) have highlighted several potential problems within camouflaging literature that have not been addressed in the above reviews. First, significant variations in the operationalisation and measurement of camouflaging may mean that making comparisons between, and drawing conclusion across, studies is difficult. Second, advancement of the field requires the establishment of valid and reliable measures of camouflaging; yet, at the time of earlier reviews, much of this work was still ongoing. Third, a lack of representativeness in study samples may limit the extent to which findings can be generalised to the wide range of people on the autism spectrum. To date, no review has systematically identified and described methods of measuring camouflaging, nor has it systematically examined the measurement properties of these methods. Further, no review has systematically examined and described the characteristics of participants included in camouflaging studies. Thus, a critical evaluation of camouflaging research related to all sexes and genders is now needed to identify consistencies in the current evidence as well as gaps that require further research.

### **The Present Review**

The present systematic review aims to: systematically review studies quantitatively examining camouflaging in children and adults of all sexes and genders who have an autism diagnosis or high autistic traits; report detailed summary information on the characteristics of study participants; summarise measurement methods, including measurement properties; and assess the

quality of studies. In addition, to identify consistencies within the current evidence base as well as avenues for future research, we examine and summarise study findings based on the five aforementioned research questions.

## **Review Methods**

### **Search Strategy and Selection Criteria**

This review protocol was registered online with PROSPERO, the international prospective register of systematic reviews (registration number: CRD42019141410). The review proceeded as planned except that one research question (“Is camouflaging associated with having high autistic traits or an autism diagnosis?”) was added after the search, in response to multiple studies presenting data on camouflaging, autistic traits, and diagnostic status. The most current version of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for conducting systematic reviews was followed throughout the review process (Page et al., 2021). In consultation with a bioscience and psychology subject librarian, the following databases were searched from inception to October 2020 for publications on autism and camouflaging: Medline (Ovid), Embase (Ovid), APAPsycINFO (Ovid), Web of Science, and Scopus. The search strategy involved a combination of keywords and controlled vocabulary terms and was modified for use with each database (see Appendix B for search strategies). No filters, restrictions, or limits were applied at this stage. To identify additional unpublished and emerging research, a targeted search of the following grey literature databases was conducted using keywords in October 2020: ProQuest Dissertations and Theses Global, Google Scholar, and PsyArXiv. Experts in the field and authors of relevant theses, conference abstracts/proceedings, and preprint articles were then contacted to identify any full text articles accepted (but not yet published) in peer reviewed academic journals. An updated search employing the same initial search methods was then conducted on 13<sup>th</sup> May 2021. Reference lists of included studies and relevant past systematic reviews were manually checked for additional relevant research. References were managed using Endnote and Rayyan (Ouzzani et al.,

2016). Duplicates were removed iteratively using Endnote's duplication identification strategy, and then manually.

I initially screened the titles and abstracts of all identified articles using broad inclusion/exclusion criteria to ensure any potentially relevant publications were retained for further evaluation. Publications included at this stage discussed any aspect of camouflaging in any population. No publication or language restrictions were applied. After exclusion of research according to these broad criteria, the full texts of remaining publications were evaluated for inclusion independently by me and LH. Studies adhering to the inclusion criteria in Table 2 were included in the review. Discrepancies regarding the eligibility of studies were reconciled between LH and me, with WM and LC.

**Table 2***Study Inclusion and Exclusion Criteria*

	Inclusion Criteria	Exclusion Criteria
Design	Reported quantitative data measuring camouflaging (i.e., numerical data quantifying camouflaging strategies or behaviour within an individual or group).	Reported purely qualitative data.
Population	Participants were autistic individuals (either those with a clinical diagnosis of autism or those who self-identified <sup>3</sup> as autistic) or individuals with high levels of autistic traits (as defined by study authors).	Studies only involving general population samples.
Publication	Studies published (or accepted for publication) in peer reviewed academic journals.	Articles not reporting peer-reviewed, original empirical findings such as opinion pieces, conceptual pieces, thesis, and conference abstracts.
Language	Written in English.	

**Data Extraction**

Using a standardised form developed for this study, data on study information, participant characteristics, methods of measuring camouflaging, and study results were extracted for studies meeting the inclusion criteria. Each author independently extracted data for  $\approx 25\%$  of included studies. Each author then cross-checked data for a separate  $\approx 25\%$  of included studies.

Discrepancies were discussed and resolved via consensus. Missing data were requested from study authors.

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<sup>3</sup> Some members of real-world autistic communities are self-identified or self-diagnosed (Sarrett, 2016). Such autistic individuals who recognise autistic traits within themselves but do not meet or are yet to meet criteria for a clinical diagnosis, may be particularly adept at camouflaging their autistic traits (e.g., Lai et al., 2017; Livingston, Shah, et al., 2019).

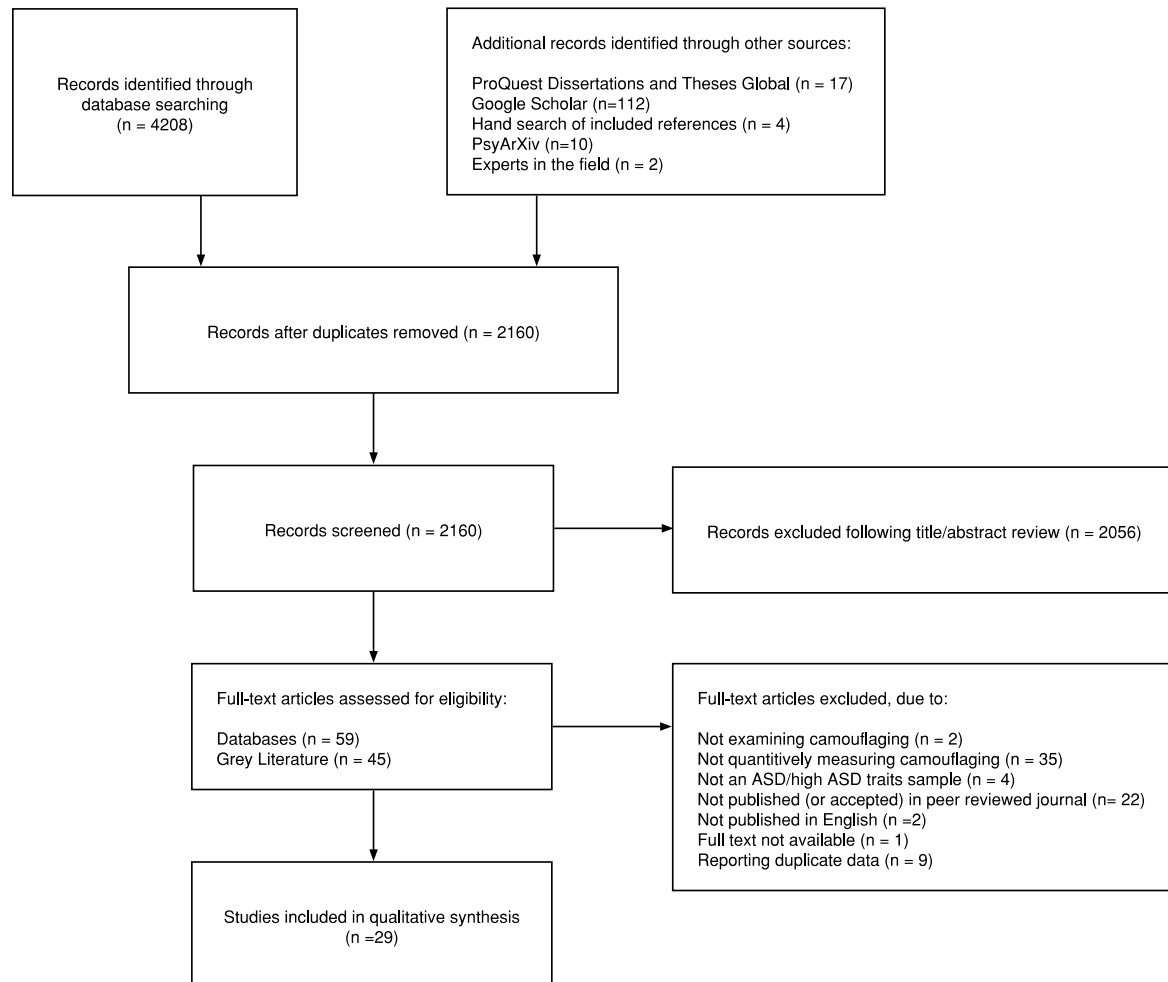
## Quality Assessment

Study quality was assessed using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018). The MMAT is designed for use in mixed studies reviews and is suitable for use with qualitative research, randomized controlled trials, non-randomized studies, quantitative descriptive studies and mixed methods studies. The five quality criteria applied to studies using the MMAT vary according to study design. Outcomes for each criterion are defined as 'yes' meets criteria, 'no' does not meet criteria, or 'can't tell' where appropriate information was not reported. In line with current literature suggesting that summed quality scores do not provide a meaningful index of study quality (e.g., Herbison et al., 2006), the authors of the MMAT discourage the calculation of an overall quality score for each study and instead suggest that a more detailed description of the criterion ratings are presented. Each study was independently rated by two reviewers (i.e., either LC and me or WM and LH). Reviewers did not assess studies for which they were also authors, with the exception of one study (Cook, Crane, Bourne et al., 2021) on which all four reviewers were authors. To ensure consistency, pairs of reviewers met separately and then as a whole group to discuss their interpretation and application of each of the MMAT criteria regarding the included studies. Discrepancies in ratings were discussed and resolved by consensus.

## Results

### Overview of Included Studies

As can be seen in Figure 1, after removal of duplicates, 2160 unique citations were screened for eligibility, of which 104 full-text articles were reviewed and 29 studies were identified as eligible for inclusion in the systematic review. Where additional analyses of study data were presented across multiple articles, all articles were included. Six of the studies included in the two previous systematic reviews (Allely, 2019; Tubío-Fungueiriño et al., 2021) did not quantitatively measure camouflaging and thus were not included in the current review (see Appendix C for further details).

**Figure 1***PRISMA Flow Diagram Showing Study Selection*

Details of included studies are provided in Tables 3, 4, 5 and 6. Eighteen of the included studies examined camouflaging in adults, and 11 examined camouflaging in children and adolescents. Studies were either open to individuals worldwide to participate (but conducted in English; n=9) or were restricted to individuals located in the UK (n = 10), USA (n = 8), Australia (n = 1), or Poland (n=1). The majority of studies (n = 23) involved solely quantitative methodologies and a further three used mixed methods designs (Cage et al., 2018; Jedrzejewska & Dewey, 2021; Livingston et al.,

2020). Three studies involving chiefly qualitative design were included because each included a quantitative measure of camouflaging (Cook, Crane, Bourne et al., 2021; Hull et al., 2017; Livingston, Shah, & Happé et al., 2019).

### **Quality Assessment**

Results of the quality assessment using the MMAT are detailed in full in Appendix D. Although the overall quality of included studies was sound, several specific methodological issues were common across the quantitative and mixed-methods studies. Most studies failed to gain a representative sample of autistic participants ( $n = 23$ ) and/or did not provide a description of participant flow (e.g., an indication of the number of people who started, but failed to finish, an online questionnaire;  $n = 17$ ). Less common methodological issues included: failing to consider or account for any potential between-group differences in demographic variables, in design or analysis ( $n = 10$ ); failing to control for autistic traits in analyses between autistic and non-autistic groups ( $n = 2$ ); using measures not designed for autistic people/a specific age group of autistic people and failing to provide information regarding the suitability of these measures and/or failing to provide reliability data for these measures with the study sample ( $n = 4$ ); and using an ad hoc method of quantifying camouflaging or compensation, that is, providing participants with camouflaging or compensation scores based on text responses to open ended questions ( $n = 2$ ).

### **Participant Characteristics**

Table 3 provides an overview of participant characteristics for participants with autism diagnoses or high autistic traits. There were four sets of studies in which samples were partially or fully duplicated (Hull et al., 2019; Hull, Lai, et al., 2020; Hull, Levy, et al., 2021; Jorgenson et al., 2020; Bernardin et al., 2021; Lai et al., 2017, 2019; Livingston, Shah, & Happé, 2019; Livingston et al., 2020). In these instances, only information from one study (the study with the largest  $N$ ) was counted when calculating aggregated participant characteristics. In total, 2254 autistic adults (clinically diagnosed or self-identifying) and adults with high levels of autistic traits were included across all studies (sample sizes ranged from  $N = 17$  to  $N = 354$ ). Adults ranged in age from 16 to 82



with a mean age of 36.47 years. The majority of participants reported female sex or identified as women<sup>4</sup> (60.1%) and were formally diagnosed with autism (95.9%). Further characterisation of adult participants was generally poor. Most participants in the eight studies reporting ethnic group/race were white (86.1%). General anxiety (54.8%) and depression (53.1%) were common amongst participants in the five studies reporting co-occurring mental health conditions. Participants were typically diagnosed in adulthood ( $M = 32.98$  years) across the seven studies reporting mean age at diagnosis. Only four studies measured IQ and participants in these studies were of average to above average intelligence (Full Scale IQ,  $M = 112.35$ ). Most studies recruited adult participants via advertisements distributed through social media, autism charities and support groups, and/or research databases.

Child and adolescent samples ranged from  $N = 33$  to  $N = 236$  with a total of 1077 children and adolescents with an autism diagnosis or high levels of autistic traits included across all studies. Child/adolescent participants ranged in age from 5 to 18 years with a mean age of 11.90 years. Most participants were of male sex or identified as boys<sup>5</sup> (62.9%) and were formally diagnosed with autism (94.7%). Mean Full Scale IQ was in the average range (99.93). Further characterisation of child/adolescent participants was frequently lacking. Most participants in the two studies reporting ethnic group/race were white (75.8%). Almost half of the participants in the one study reporting comorbidities had co-occurring diagnoses (40.7%). Studies recruited child and adolescent participants via a variety of means including via autism and mental health clinics, research centres and databases, schools, birth records, a social skills trial, social media, and word of mouth. Specific participant characteristics reported in each included study are in Appendix E.

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<sup>4</sup> In describing sex and gender of participants, adult studies reported: gender only ( $n = 8$ ); sex and gender ( $n = 3$ ); sex only ( $n = 2$ ). In the remaining two studies it was unclear if the measurement of sex/gender reported referred to sex or gender.

<sup>5</sup> In describing sex and gender of participants, child studies reported sex only ( $n = 6$ ); what was termed sex/gender by authors ( $n = 2$ ); and gender only ( $n = 2$ ). In one study it was unclear if measurement of sex/gender reported referred to sex or gender.

**Table 3***Aggregated Participant Characteristics*

	% Gender	Mean age	Mean age of diagnosis	Mean FSIQ	% Clinical autism diagnosis	% Race/ethnic group <sup>a</sup>	% Educational attainment	% Co-morbid mental health diagnosis <sup>a</sup>
<i>N</i> adult studies used in calculations	14	13	7	4	14	8	6	5
Adult studies (n=18)	60.1 F; 29.0 M; 8.3 O; 2.6 n.r.	36.47	32.98	112.35	95.9	86.1 White; 4.1 Mixed; 1.4 Asian; 0.5 Hispanic/Latino/a; 0.2 Black; 1.2 Other; 6.9 n.r.	4.9 No qualifications; 25.1 High school or equivalent; 30.0 Undergraduate degree; 24.0 Post-graduate degree; 12.3 Other; 3.7 n.r.	53.1 Depression; 54.8 General anxiety; 6.5 Social anxiety; 0.4 Specific phobia; 11.0 OCD; 5.5 PTSD; 4.3 Bipolar disorder; 3.7 Personality disorder; 0.9 Schizophrenia; 2.4 Eating disorder
<i>N</i> child studies used in calculations	10	8		7	10	2		1
Child studies (n=11)	36.9 F; 62.9 M; 0.3 O	11.90		99.93	94.7	75.8 White; 5.5 Black; 4.1 Hispanic/Latino/a; 3.4 Asian; 7.8 Other/Unknown; 3.4 n.r.		40.7 Co-morbid diagnosis

*Note.* F = female; M = male; O = other (study authors reported a range of genders included as 'other' such as non-binary, genderfluid, transgender male and transgender female); n.r. = not reported. Percentage may not sum to 100 due to rounding.

<sup>a</sup> Percentages will not sum to 100 due to categories not being mutually exclusive.

## **Camouflaging Measures**

Included studies quantified camouflaging using two different measurement approaches: internal-external discrepancy approaches, or self-report approaches. A range of terms (i.e., masking, camouflaging, and compensation) were used to describe measures. Throughout this review, I use the term camouflaging to refer to the related concepts of camouflaging, compensation, and masking. However, to ensure accuracy when describing specific study measures, I use the terminology used by the relevant study authors in this section.

### ***Internal-External Discrepancy Approaches***

As can be seen in Table 4, three adult studies and six child/adolescent studies used internal-external discrepancy approaches. Internal-external discrepancy approaches aim to measure camouflaging by quantifying differences between internal ('true') autistic states and observable behavioural presentations (Lai et al., 2017, 2020). Across studies, various self- or parent-report measures of autistic traits and/or performance-based measures of social cognition were used as proxy measures of 'true' autistic status while observer/computer rated measures of social behaviour were used to assess external behavioural presentation. Two studies calculated individual camouflaging scores by quantifying the difference between individuals' scores on a self-report measure of autistic traits/a performance-based measure of Theory of Mind (ToM) and an observer rated measure of social behaviour (Lai et al., 2017, 2019). One study calculated individual camouflaging scores by quantifying the difference between individuals' scores on a self-report measure of autistic traits and an observer-rated measure of social behaviour (Schuck et al., 2019). Three studies classified participants into distinct compensation or 'compensatory camouflaging' ability groups (e.g., high, low, deep, or unknown) based on scores on performance-based measures of ToM (splitting participants based on the median or mean score of the sample or the median score of a non-autistic reference group) and observer rated measures of social behaviour or reciprocity (splitting participants on median or mean scores of the sample; Corbett et al., 2020; Livingston, Colvert, et al., 2019; Wood-Downie et al., 2020). Four studies compared differences between groups

hypothesized to differ in camouflaging ability (i.e., boys and girls) in parent-rated social communication skills/autism characteristics and observer rated social behaviour/s or reciprocity (Parish-Morris et al., 2017; Ratto et al., 2018; Rynkiewicz et al., 2016; Wood-Downie et al., 2020). Two of these studies further explored camouflaging-related differences in the quality of social behaviour exhibited by autistic girls and boys by comparing differences in social behaviour between autistic and non-autistic girls and autistic and non-autistic boys (Parish-Morris et al., 2017; Wood-Downie et al., 2020).

**Table 4***Overview of Internal-External Discrepancy Measurement Methods*

Author (Year)	Operationalisation of camouflaging	Autistic traits/social communication skill measure	Social cognitive ability measure; Social cognitive ability	Measure of behavioural presentation	Type of outcome
<b>Adult Studies</b>					
Lai et al. (2017)	Discrepancy between self-reported autistic traits/performance based socio-cognitive ability and observer rated social behaviour	AQ	REMT; ToM	ADOS	Individual camouflaging scores
Lai et al. (2019)	Discrepancy between self-reported autistic traits/performance based socio-cognitive ability and observer rated social behaviour	AQ	REMT; ToM	ADOS	Individual camouflaging scores
Schuck et al. (2019)	Discrepancy between self-reported autistic traits and observer rated social behaviour	AQ	-	ADOS	Individual camouflaging scores
<b>Child/Adolescent Studies</b>					
Rynkiewicz et al. (2016)	Discrepancy between parent-reported autistic traits/social communication skills and "Gesture Index"	AQ, SCQ	-	Computerized data on gestures occurring during two sections of the ADOS-2	Group level differences
Parish-Morris et al. (2017)	Discrepancy between parent-reported autistic traits/social communication skills and pragmatic language markers	SCQ, Vineland-II	-	Pragmatic language markers occurring during a section of the ADOS-2	Group level differences

Ratto et al. (2018)	Discrepancy between parent reported autistic traits/social communication skills and performance on gold-standard diagnostic measures	ADI-R, SRS, SRS-2, Vineland-II	-	ADOS/ADOS-2	Group level differences
Livingston, Colvert, et al. (2019)	Discrepancy between performance based socio-cognitive ability and observer rated social behaviour	-	Frith-Happé Animations; ToM	ADOS	Four compensation ability groups (low compensators, high compensators, deep compensators, and unknown)
Corbett et al. (2020)	Discrepancy between performance based socio-cognitive ability and observer rated social behaviour	-	NEPSY-II (theory of mind subscale); ToM	ADOS-2	Four compensation ability groups (low compensation, high compensation, deep compensation, and unknown)
Wood-Downie et al. (2020)	Discrepancy between parent reported autistic traits/performance based socio-cognitive ability and performance-based social reciprocity	SCDC	REMT; ToM	IDT	1. Two compensatory camouflaging ability groups (low compensation and high compensation) 2. Group level differences

*Note.* AQ = Autism Quotient; REMT = Reading the Mind in the Eyes Test; ToM = Theory of Mind; ADOS= Autism Diagnostic Observation Scale ; SCQ = Social Communication Questionnaire; ADOS-2 = Autism Diagnostic Observation Scale, Second Edition; Vineland II = Vineland Adaptive Behaviour Scales, Second Edition; ADI-R = Autism Diagnostic Interview- Revised; SRS = Social Responsiveness Scale; SRS-2 = Social Responsiveness Scale 2; NEPSY-II = NEUROPSYCHOLOGICAL ASSESSMENT Second Edition; SCDC = Social and Communication Disorders Checklist; IDT = Interactive Drawing Test

### **Self-Report**

As can be seen in Table 5, 19 studies used self-report measures of camouflaging. Self-report approaches aim to measure camouflaging by quantifying individuals' self-perceived engagement in camouflaging. One additional study used a parent-report measure of masking. The precise nature of these self-report and parent-report methodologies and instruments varied significantly between studies.

Nine adult studies and four child/adolescent studies used the Camouflaging Autistic Traits Questionnaire (CAT-Q; Hull et al., 2019). The CAT-Q is a 25-item self-report questionnaire designed to measure camouflaging strategies and behaviours (e.g., "I adjust my body language or facial expressions so I appear relaxed") across three subscales (compensation, masking, and assimilation) with higher scores indicating greater levels of camouflaging. Items on the CAT-Q were developed based on a qualitative study exploring the camouflaging experiences of autistic adults. The CAT-Q was validated in a sample of 832 autistic and non-autistic adults (Hull et al., 2019). Test-retest reliability reported in the validation study was good ( $r = 0.77$ ). Internal consistencies for the Total CAT-Q and subscale scores in included studies ranged from  $\alpha = 0.79$  to  $\alpha = 0.94$ . Whilst yet to be validated for use with autistic adolescents, four studies using the CAT-Q involved adolescent samples (Bernadin et al. 2021; Hull, Petrides & Mandy, 2021; Jedrzejewska & Dewey, 2021; Jorgenson et al., 2020). Internal consistency for the total CAT-Q and subscale scores ranged from  $\alpha = 0.81$  to  $\alpha = 0.91$  across these four studies. One study also included a modified version of the CAT-Q measuring camouflaging strategies and behaviours used in the social media environment (Jedrzejewska & Dewey, 2021).

Two studies used modified versions of the Girls Questionnaire for Autism Spectrum Conditions (GQ-ASC; Attwood et al., 2011). One study used the Questionnaire for Autism Spectrum Conditions (Q-ASC) - a version of the GQ-ASC modified for use with males and females (Ormond et al., 2018). The Masking subscale on Q-ASC measures a parent's perception of their child's masking behaviours via five items (e.g., "Does s/he have a facial 'mask' that hides his/her social confusion?").

Internal consistency for the Social Masking scale was  $\alpha = .61$ . Another study used a version of the GQ-ASC modified for use with women (Brown et al., 2020). The camouflaging scale on this version of the GQ-ASC includes four items measuring self-reported engagement in camouflaging behaviours (e.g., “I adopt a different persona in different situations”). The structure of this version of the GQ-ASC was investigated using principal components analysis in a sample of 672 autistic and non-autistic women. Internal consistency for the Camouflaging subscale was  $\omega = 0.67$ .

Livingston et al. (2020) used the Compensation Checklist, a list of 31 strategies (e.g., “Mimic phrases, gestures, facial expressions, tone of voice picked up from other people and/or TV/film/book characters”) divided in to four categories (masking, shallow compensation, deep compensation, and accommodation) created based on a qualitative study of compensatory strategies (reported in Livingston, Shah, & Happé, 2019). Individuals in the same dataset (reported in Livingston et al., 2020) were then given compensation scores based on the number of times they referenced specific compensation strategies and behaviours in their text responses with greater compensation scores indicating a higher number of strategies and behaviours referenced. The greatest lower bound reliability for the Total Compensation Score was GLB = 0.82.

Authors in three studies created a single question or short sets of questions to measure camouflaging. Cassidy et al. (2018) created a set of four questions measuring engagement in camouflaging (yes/no), camouflaging areas (e.g., work, educational settings, social gatherings, etc.), camouflaging frequency (i.e., percentage of social situations a person is camouflaging in), and camouflaging amount (i.e., amount of the day spent camouflaging). Scores were summed for camouflaging areas, frequency, and amount; with higher total scores indicating more camouflaging. Reported internal consistency for the questions was  $\alpha = .75$ . Cage and Troxell-Whitman (2019) measured the frequency with which participants engaged in two overarching camouflaging contexts (formal and interpersonal contexts) identified from an initial set of 22 camouflaging contexts. Participants were then classified into three groups: consistently low camouflagers (camouflaging low in both contexts); switchers (camouflaging high in one context but low in the other); and



consistently high camouflagers (camouflaging high in both contexts). Internal consistency for the set of camouflaging contexts was  $\alpha = 0.95$ . Hull et al. (2017) included a single item quantitatively measuring engagement (yes/no) in camouflaging.

Two studies provided quantitative data measuring camouflaging generated from qualitative data sets. One study provided quantitative data regarding the number of participants who spontaneously reported camouflaging in text responses to questions about autism acceptance and mental health (Cage et al., 2018). Another study provided quantitative data regarding the total number of participants who endorsed themes, three of which were types of compensation behaviours or strategies (i.e., shallow compensation, deep compensation, and behavioural masking) in text responses to open ended questions about compensation (Livingston, Shah, & Happé, 2019).

**Table 5***Overview of Self-Report Measures*

Author (Year)	Operationalisation of camouflaging	Measure/s	Evidence of Validity and Reliability
<b>Adult Studies</b>			
Hull et al. (2017)	Self-reported experience of camouflaging	Single item measuring presence or absence of camouflaging	Questionnaire was developed in consultation with expert clinicians, researchers, and autistic adults.
Cage et al. (2018)	Spontaneous reporting of masking or camouflaging in text response to questions	Mixed methods questionnaire examining the relationship between autism acceptance and mental health.	n.r.
Cassidy et al. (2018)	Self-reported tendency to camouflage	Set of four items measuring engagement in camouflaging.	Items were developed in consultation with autistic adults. Internal consistency for the total score was $\alpha = .75$ .
Cage and Troxell-Whitman (2019)	1 Self-reported use of camouflaging strategies or behaviours	1. CAT-Q	1. In this sample, internal consistency for the total CAT-Q score was $\alpha = 0.89$ .
	2. Self-reported camouflaging contexts	2. Set of 22 items measuring camouflaging contexts	2. Camouflaging context items were developed in consultation with autistic adults. Internal consistency for the total score was $\alpha = 0.95$ . Switchers and high camouflagers demonstrated equivalent CAT-Q scores.
Hull et al. (2019)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	Items on questionnaire developed based on qualitative study of autistic adults' experiences of camouflaging. Questionnaire validated in a sample of 832 autistic and non-autistic adults. Internal consistency for the total CAT-Q score (with combined autistic and non-autistic samples) was $\alpha = 0.94$ . Internal consistencies for subscales were: Compensation ( $\alpha = 0.92$ ), Masking ( $\alpha =$

			0.86), and Assimilation ( $\alpha = 0.93$ ). Test-retest reliability ( $r = 0.77$ ) was good in a subsample of autistic participants.
Livingston, Shah, & Happé (2019)	References to social compensatory strategies in text responses to questions	Qualitative questionnaire exploring social compensatory strategies	n.r.
Beck et al. (2020)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	n.r. using study sample
Brown et al. (2020)	Self-reported engagement in the active process of developing and displaying strategies that minimize the impact of social challenges	Camouflaging subscale on a modified version of GQ-ASC	Internal consistency for Camouflaging subscale was $\omega = 0.67$ .
Cage and Troxell-Whitman (2020)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the total CAT-Q score was $\alpha = 0.89$ .
Hull, Lai, et al. (2020)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample internal consistency for the total CAT-Q score was $\alpha = 0.94$ .
Livingston et al. (2020)	References to social compensatory strategies in text responses to questions	Compensation Checklist	Items on the checklist were developed based on qualitative study of autistic and non-autistic adults' experiences of compensation. Greatest lower bound reliability was GLB = 0.82.
Robinson et al. (2020)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the total CAT-Q score was $\alpha = 0.94$ . Internal consistencies for the subscales were: Compensation ( $\alpha = 0.94$ ), Masking ( $\alpha = 0.80$ ), and Assimilation ( $\alpha = 0.90$ ).
Cook, Crane, Bourne et al. (2021)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the Total CAT-Q score was $\alpha = 0.84$ .
Hull, Levey, et al. (2021)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the Total CAT-Q was $\alpha = 0.79$ .

Perry et al. (2021)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the Total CAT-Q was $\alpha = 0.90$ .
Child/Adolescent Studies			
Ormond et al. (2018)	Parent-reported level of masking emotional responses and expressions during social interactions	Social Masking subscale on the Q-ASC.	Internal consistency for the Social Masking subscale was $\alpha = .61$ .
Hull, Petrides & Mandy (2021)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the total CAT-Q score was $\alpha = 0.91$ . Internal consistencies for subscales were: Compensation ( $\alpha = 0.89$ ), Masking ( $\alpha = 0.81$ ), and Assimilation ( $\alpha = 0.87$ ).
Jorgenson et al. (2020)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the total CAT-Q score was $\alpha = 0.86$ .
Bernardin et al. (2021)	Self-reported use of camouflaging strategies or behaviours	CAT-Q	In this sample, internal consistency for the Total CAT-Q score was $\alpha = 0.86$ .
Jedrzejewska & Dewey (2021)	Self-reported use of camouflaging strategies or behaviours	1. CAT-Q	1. n.r. in study sample
		2. CATO-Q	2. n.r.

Note: n.r. = None reported; CAT-Q = Camouflaging Autistic Traits Questionnaire; GQ-ASC = Girls Questionnaire for Autism Spectrum Conditions; Q-ASC = Questionnaire for Autism Spectrum Conditions; CATO-Q = Camouflaging Autistic Traits Online Questionnaire

## **Study Findings**

An overview of the camouflaging evidence base is shown in Table 6. Results regarding specific study findings are described and discussed further below, based on the five identified research questions. Again, to ensure accuracy when describing specific study measures, I use the camouflaging terminology used by the relevant study authors in this section.

**Table 6***Summary of Evidence Presented in Included Studies Grouped by Research Question*

Author (year)	Q1: Is Camouflaging associated with having high autistic traits or an autism diagnosis?	Q2: Are there sex or gender differences in camouflaging behaviours?	Q3: Are particular cognitive abilities or processes associated with camouflaging?	Q4: Is camouflaging related to current age or age at diagnosis?	Q5: What is the relationship between camouflaging and mental health and wellbeing outcomes?
<b>Internal-external discrepancy adult studies</b>					
Lai et al. (2017)		✓	✓	x	✓
Schuck et al. (2019)		✓	x		x
<b>Self-report adult studies</b>					
Hull et al. (2017)		x			
Cage et al. (2018)	✓ <sup>a</sup>	x			✓
Cassidy et al. (2018)		✓		x	✓
Cage and Troxell-Whitman (2019)		x		x	✓
Hull et al. (2019)	✓				✓
Livingston, Shah, & Happé (2019)	x				
Beck et al. (2020)					✓
Brown et al. (2020)	✓				
Cage and Troxell-Whitman (2020)	✓ <sup>b</sup>				
Hull, Lai, et al. (2020)		✓			
Livingston et al. (2020)	✓	x		x	
Robinson et al. (2020)					✓
Hull, Levy, et al. (2021)					✓
Perry et al. (2021)	✓ <sup>c</sup>	✓		✓	x
<b>Internal-external discrepancy child/adolescent studies</b>					
Rynkiewicz et al. (2016)		✓			
Parish-Morris et al. (2017)		✓			
Ratto et al. (2018)		✓			
Livingston, Colvert et al. (2019)		x	✓	x	✓
Corbett et al. (2021)		✓	x		✓
Wood-Downie (2020)		✓	✓		
<b>Self/parent report child/adolescent studies</b>					
Ormond et al (2018)		✓		✓	
Hull, Petrides & Mandy (2021)			✓	x	
Jorgenson et al. (2020)	x	x		x	
Bernardin et al. (2021)					✓
Jedrzejewska & Dewey (2021)	✓	✓			

Note: ✓ = indicated significant findings with respect to at least one variable; x = indicates the research question was investigated but no significant finding was identified

<sup>a</sup> experiences of autism acceptance

<sup>b</sup> autistic identity

<sup>c</sup> stigma

### ***Is Camouflaging Associated with having High Autistic Traits or an Autism Diagnosis?***

**Adults.** Four studies examined associations between camouflaging, diagnostic status, and/or autistic traits in adults using self-report measures. Overall, results suggested that higher levels of self-reported camouflaging are associated with having an autism diagnosis or higher autistic traits in adult samples.

In a large sample of adults, formally diagnosed autistic individuals scored higher than non-autistic individuals on the CAT-Q Total and subscale scores (Hull et al., 2019). Associations between CAT-Q subscale scores and autistic trait severity varied somewhat in this sample. However, higher overall scores on the CAT-Q were associated with higher autistic traits for both formally diagnosed and non-autistic individuals. Autistic (formally diagnosed and self-identifying) and non-autistic adults similarly described either deep compensation, shallow compensation, or behavioural masking strategies at least once in text responses to open ended questions (Livingston, Shah, & Happé, 2019). However, formally diagnosed autistic individuals described a greater total number of compensation strategies compared to non-autistic individuals (Livingston et al., 2020). This association was not maintained after accounting for autistic traits and education, suggesting that the relationship between camouflaging and autism diagnosis may be driven by autistic traits. Finally, in a large sample of cisgender and transgender women, formally diagnosed autistic women scored higher than non-autistic women on the Camouflaging subscale of the modified GQ-ASC (Brown et al., 2020). However, higher scores on the Camouflaging subscale were only associated with higher autistic traits for non-autistic women.

A further three studies examined associations between self-reported camouflaging and social concepts related to diagnosis: autistic identity, experiences of autism acceptance, disclosure, and stigma. Across these studies, evidence suggested that experiences of stigma and not feeling accepted by others was associated with increased camouflaging (Cage et al., 2018; Perry et al., 2021) whilst high autistic identification and open disclosure of one's diagnosis may be associated with reduced camouflaging (Cage & Troxell-Whitman, 2020).

**Children and Adolescents.** In child and adolescent samples, two studies used self-report measures to compare camouflaging between autistic and non-autistic adolescents. Results across these two studies were inconsistent. Jorgenson et al. (2020) found that while autistic and non-autistic adolescents displayed some variation regarding CAT-Q subscales, autistic adolescents did not score more highly overall on the CAT-Q than non-autistic adolescents. In contrast, Jedrzejewska & Dewey (2021) reported that autistic adolescents demonstrated significantly higher Total CAT-Q scores than non-autistic adolescents in offline (but not online) settings.

***Are there sex or gender differences in camouflaging behaviours?***

**Adults.** Nine of the included studies using adult samples reported data relating to sex or gender differences in camouflaging using internal-external discrepancy or self-report approaches. Five of these studies examined gender differences, two examined sex differences, and two examined what they termed sex/gender differences. To ensure accuracy, when describing study results, I use the sex or gender terms used by the relevant study authors. Results across these studies varied, but evidence from five of the nine studies suggested that those reporting male sex or identifying as men camouflaged less than those reporting female sex or identifying as women. Additionally, results from one study suggested that those reporting non-binary genders camouflaged more than those identifying as men (Perry et al., 2021).

Results of three exploratory studies using predominately qualitative methodologies were not suggestive of sex or gender differences in camouflaging (Cage et al., 2018; Hull et al., 2017; Livingston et al. 2020). However, results of four studies using psychometrically rigorous methods of quantification (i.e., continuous rating scales) generally supported sex or gender differences. When examining sex differences in camouflaging frequency and pervasiveness, compared to autistic males, autistic females reported camouflaging across more situations, more frequently and for more of the time (Cassidy et al., 2018). Regarding gender, Hull, Lai, et al. (2020) found that autistic women demonstrated higher Total CAT-Q scores than autistic men after accounting for age and autistic-like traits. Gender differences in self-reported camouflaging between men, women, and non-binary



people were not found, however, the sample was underpowered for non-binary people. Perry et al. (2021) also reported that gender was a suggestive predictor of camouflaging such that identifying as female or non-binary predicted higher Total CAT-Q scores. However, Cage and Troxel-Whitman (2019) found no gender differences on the Total CAT-Q score between autistic men or women.

The two studies investigating what they termed sex/gender differences using the internal-external discrepancy approach found that autistic women demonstrated higher camouflaging scores than autistic men (Lai et al., 2017; Schuck, et al., 2019).

**Children and Adolescents.** Nine of the included studies reported data related to sex or gender differences in camouflaging in autistic children and adolescents. Five studies reported sex differences; two reported gender differences; and two studies reported what the authors termed sex/gender differences. Again, findings were mixed, but evidence from seven of the nine studies suggested that through childhood and adolescence, those reporting female sex or identifying as girls camouflage more than those reporting male sex or identifying as boys.

Across five internal-external discrepancy studies investigating sex or sex/gender differences, autistic females with high autistic traits and/or autism diagnoses demonstrated less autistic social behaviour than males with autistic traits and/or autism diagnoses, despite having equivalent (or poorer) social communication skills, autistic traits, and ToM abilities (Corbett et al., 2020; Parish-Morris et al., 2017; Ratto et al., 2018; Rynkiewicz et al., 2016; Wood-Downie et al., 2020). In contrast, Livingston, Colvert et al. (2019) found no gender differences between compensation groups, although the sample was underpowered for females.

More variation existed across the three studies using self/parent-report methodologies. Regarding sex, autistic females engaged in more parent-reported masking behaviours than autistic males on the Masking subscale of the Q-ASC (Ormond et al. 2018). Similarly, autistic and non-autistic adolescents identifying as female gender reported engaging in more camouflaging online (using the CATO-Q) than those who identified as male gender (Jedrzejewska & Dewey, 2021).

However, no sex or gender differences were found for autistic adolescents using the CAT-Q in offline contexts (Jorgenson et al., 2020; Jedrzejewska & Dewey, 2021).

***Are particular cognitive abilities or processes associated with camouflaging?***

**Adults.** The two small-scale studies exploring associations between camouflaging and cognitive abilities in autistic adults via internal-external discrepancy measurement approaches yielded inconsistent results. The sole adult study reporting data on camouflaging and IQ found no association between camouflaging and Full-Scale IQ, Verbal IQ, or Performance IQ (Lai et al., 2017). With regard to executive functioning abilities, Schuck et al. (2019) found no relationship between camouflaging and executive functioning, while Lai et al. (2017) suggested that higher camouflaging scores may be associated with better executive functioning abilities for autistic women but not autistic men.

**Children and Adolescents.** Four included studies examined relationships between cognitive abilities and camouflaging in children and adolescents using internal-external discrepancy and self-report measurement approaches. Results regarding associations between camouflaging and IQ were inconsistent. However, there was some evidence to suggest that higher camouflaging was associated with better executive functioning abilities.

Three studies used internal-external discrepancy approaches to stratify children/adolescents into compensation ability groups. Livingston, Colvert et al. (2019) found high compensators demonstrated significantly higher Full Scale IQ and Verbal IQ (but not Non-Verbal IQ) scores than low compensators. Similarly, using a smaller sample, Wood-Downie et al. (2020) reported a non-significant trend towards high 'compensatory camouflagers' demonstrating higher Full Scale IQ scores compared to low 'compensatory compensators'. However, Corbett et al. (2020) found no differences between high and low camouflagers on Verbal IQ or Performance IQ. The one study using a self-report methodology with adolescents found no relationship between self-reported camouflaging on the CAT-Q and Full-Scale IQ (Hull, Petrides & Mandy, 2021), although it should be acknowledged that this study was only powered to detect large effects.

Regarding executive functioning, Livingston, Colvert et al. (2019) reported that high compensators demonstrated better executive functioning abilities than low compensators. Hull, Petrides and Mandy (2021) found that fewer executive functioning difficulties predicted greater total self-report camouflaging on the CAT-Q.

### **Is camouflaging related to current age or age at diagnosis?**

**Adults.** Five studies examined relationships between age and camouflaging in autistic adults. Four of these studies found no relationship between camouflaging and age, or age at diagnosis, using either internal-external discrepancy (Lai et al. 2017) or self-report measures (Cage & Troxell-Whitman, 2019, Cassidy et al., 2018; Livingston et al. 2020). However, the one self-report study using a validated measure of camouflaging found that age, and age at diagnosis, may be associated with camouflaging such that older age suggestively predicted lower total CAT-Q scores while older age at diagnosis suggestively predicted higher total CAT-Q scores (Perry et al., 2021).

**Children and Adolescents.** A further four articles presented data on age and camouflaging in children and adolescents. No evidence was found to support a relationship between camouflaging or compensation and age in autistic adolescents using either internal-external discrepancy approaches (Livingston, Colvert et al., 2019) or self-report measures (Hull, Petrides, & Mandy, 2021; Jorgenson et al., 2020). However, the one study comparing masking across different developmental stages suggested that autistic adolescents (13-19 years) displayed higher parent-reported levels of masking than autistic children (5-12 years; Ormond et al., 2018).

### **What is the relationship between camouflaging and mental health and wellbeing outcomes?**

**Adults.** Ten of the identified studies explored associations between camouflaging and wellbeing and/or mental health in adults using internal-external discrepancy and self-report approaches. Overall, significant evidence from eight of these ten studies supported a relationship between increased self-reported camouflaging and poorer mental health.

Initial studies, employing a variety of self-report methodologies, provided mixed support for an association between camouflaging and mental health. Spontaneously reported camouflaging (in

text responses to questions about autism acceptance and mental health) was associated with higher depression, but not anxiety or stress scores (Cage et al., 2018). Self-reported camouflaging on a set of four items predicted suicidality after controlling for a range of additional factors, but it was not associated with a self-reported diagnosis of depression or an anxiety disorder (Cassidy et al., 2018). Camouflaging in more environments or contexts was also associated with increased anxiety and stress, but not depressive symptoms (Cage & Troxell-Whitman, 2019).

Later studies quantifying both camouflaging and mental health constructs using validated measures have provided more consistent evidence suggesting that greater self-reported camouflaging (i.e., higher Total CAT-Q scores) is associated with increased neuroticism (Robinson et al., 2020); increased social anxiety, general anxiety, and depressive symptoms (Hull et al., 2019; Hull, Levy, et al., 2021); greater psychological distress (Beck et al., 2020); and decreased wellbeing (Hull et al., 2019; although see Perry et al., 2021). However, there was no evidence that the relationship between self-reported camouflaging and mental health outcomes was moderated by gender (Hull, Levy, et al., 2021).

Two small-scale studies employing internal-external discrepancy approaches examined associations between camouflaging and mental health outcomes separately for autistic men and women. Lai et al. (2017) found that higher camouflaging scores were associated with greater depressive symptoms in men but not women, while camouflaging was not associated with anxiety symptoms in either sex/gender. Similarly, Schuck et al. (2019) found no relationship between camouflaging scores and social anxiety symptoms for either sex/gender.

**Children and Adolescents.** Three studies using internal-external discrepancy and self-report approaches yielded some preliminary evidence supporting an association between camouflaging and poorer mental health in children and adolescents. Two studies examined associations between camouflaging and anxiety in children and adolescents using internal-external discrepancy methods. Livingston, Colvert et al. (2019) reported that high compensators demonstrated high self-report (but not parent-report) anxiety compared to low compensators. Corbett et al. (2020) found no

differences between high and low compensators in terms of self-report trait or state anxiety. However, low compensators demonstrated higher levels of observer-rated anxiety compared to high compensators. The sole study using a self-report approach found that greater self-reported camouflaging was associated with higher levels of anxiety and depression in both autistic and non-autistic adolescents (Bernardin et al., 2020).

## **Discussion**

Camouflaging refers to the conscious or unconscious employment of specific behavioural and cognitive strategies used by autistic people to adapt to, or cope within, the predominately non-autistic social world (Hull et al., 2019; Lai et al., 2017; Lawson, 2020). Camouflaging may enable autistic people to (consciously or unconsciously) present a non-autistic social style, hide autistic characteristics, and/or minimise the visibility of social difficulties. The current systematic review aimed to critically evaluate existing quantitative camouflaging research to identify consistencies in the current evidence base, as well as gaps that require further research. I identified 29 studies quantifying camouflaging in children/adolescents and adults with autism diagnoses or high levels of autistic traits. Next, I provide an overview of current measurement approaches as well key findings, before discussing limitations in the current literature and providing suggestions for future research.

### **Research into Camouflaging and Autism: Current Measurement Approaches**

The multiple methods used to measure camouflaging in included studies broadly fell under two different approaches: internal-external discrepancy and self-report approaches. The internal-external discrepancy approach aimed to measure camouflaging by quantifying differences between internal ('true') autistic status and observable behavioural presentation (Lai et al., 2017, 2020). Following this approach, high camouflaging was conceptualised as either fewer social-communication difficulties or more 'typical' social behaviour despite high autistic traits/poor social cognition abilities. Across studies, various self- or parent-report measures of autistic traits and/or performance-based measures of social cognition were used as proxy measures of 'true' autistic status, while an observer rated assessment of autistic behaviour (i.e., ADOS) was typically used as a

measure of external behavioural presentation (however, see Parish-Morris et al., 2017; Rynkiewicz et al., 2016; Wood-Downie et al., 2020). Adult studies calculated individual camouflaging scores for participants, while child/adolescent studies stratified children/adolescents into camouflaging ability groups and/or described group level differences between boys and girls. Such methods highlight an important issue related to camouflaging and diagnosis: certain autistic individuals show strengths in performance on observer-rated assessments of social communication, relative to performance on measures of social cognition and scores on measures of overall autistic traits.

However, several important criticisms have been raised questioning the underlying assumptions of the internal-external discrepancy approach (e.g., Fombonne, 2020; Pearson & Rose, 2021; Williams, 2021). First, given the multiple behavioural, cognitive, and sensory domains implicated in autism, performance on a measure of social cognition alone is arguably a poor proxy for 'true' autistic status (Lai et al., 2017). Second, recent evidence suggests that lab-based measures of social cognition may not ordinarily predict observable social behaviour in either autistic or non-autistic people (Morrison et al., 2020; Williams, 2021). Third, given that the ADOS was developed using predominately white, male samples, scores on this measure may reflect, at least in part, the degree to which an individual's behavioural presentation ordinarily deviates from the stereotypically male autistic presentation, rather than the degree to which an individual's behavioural presentation is changed via camouflaging (Pearson & Rose, 2021). Fourth, the relationship between greater self-report levels of autistic traits and improved performance on measures of social communication may be driven by social insight or reasoning as opposed to camouflaging (Livingston et al., 2020).

In contrast to the internal-external discrepancy approach, self-report approaches measure self-perceived engagement in camouflaging independent of observable behavioural presentation (Hull et al., 2019). For this reason, self-report methodologies could be conceptualised as measuring camouflaging attempts, efforts, or intentions (e.g., Beck et al., 2020; Hull, Petrides, & Mandy, 2021; Livingston et al., 2020). Operationalisation of camouflaging varied significantly across studies from spontaneous descriptions of camouflaging in response to open-ended questions, to reported time

spent camouflaging across various settings, to endorsement of specific camouflaging behaviours and strategies. Some promising self-report camouflaging measures are yet to demonstrate reliability and validity, so require further formal testing (Williams, 2021). However, 13 of the 19 self-report studies used the CAT-Q; a camouflaging measure validated in a large sample of autistic and non-autistic adults (Hull et al., 2019; Williams, 2021). In this regard, the CAT-Q showed potential as measure of self-perceived camouflaging, demonstrating sound internal consistency and test-retest reliability and performing generally as expected when tested in relation to gender, autistic traits, and mental health and wellbeing (Hull et al., 2019; although see Fombonne, 2020).

However, it is important to note that camouflaging likely involves both the conscious and unconscious employment of behavioural and cognitive strategies. In this regard, self-report measures are limited in measuring unconscious engagement in camouflaging (Lawson, 2020). Moreover, several behaviours and strategies included on self-report measures appear to overlap with behaviours associated with more established constructs such as social anxiety/safety behaviours, impression management, and passing (Fombonne et al., 2020; Lai et al., 2020; Williams, 2021). Thus, the degree to which camouflaging behaviours and strategies, as measured in current self-report measures, represent a theoretically distinct phenomena, remains unclear.

It is likely that internal-external discrepancy and self-report approaches measure distinct but potentially converging elements of camouflaging (Lai et al., 2020). Self-report methodologies may measure the extent to which individuals consciously employ camouflaging behaviours and strategies, and I label this 'camouflaging intent'. By contrast, internal-external discrepancy methods may capture the extent to which these behaviours and strategies (as well as behaviours and strategies operating outside of conscious awareness) translate into observable social behaviour, and I label this 'camouflaging efficacy'. I note here that, as previously described, camouflaging may not be a desired but rather a necessary coping strategy for autistic people, and so 'efficacy' refers to meeting intended aims rather than optimal outcomes. It is important to acknowledge that given the nascent stage of empirical research examining camouflaging, methods for measuring the

phenomena are in their infancy. Currently, there is a dearth of research investigating relationships between either internal-external discrepancy or self-report measures of camouflaging and measures of more established, theoretically related constructs (e.g., impression management, social anxiety, passing; Lai et al., 2017, 2020). Similarly, self-report and internal-external discrepancy methods have not been directly compared, to determine the extent to which these show concurrent validity in measuring the same underlying construct (Fombonne, 2020). It is also important to note that, in the current systematic review, I was not able to aggregate data across studies via meta-analytic techniques, owing to differences both between and within measurement approaches.

### **Research into Camouflaging in Autism: Current Findings**

The literature we reviewed suggests the following three preliminary findings about the nature of autistic camouflaging. First, emerging evidence suggests that adults with higher self-reported autistic traits report greater camouflaging efforts (Brown et al., 2020; Hull et al., 2019; Livingston et al., 2020). Having an autism diagnosis similarly appears to be associated with greater camouflaging efforts, and there is some evidence to suggest this relationship is driven by autistic traits rather than the presence of diagnostic label per se (Livingston et al., 2020). Such findings suggest that regardless of diagnosis, adults with higher self-reported autistic traits feel a greater need to modify their social behaviour via the use of camouflaging strategies. The underlying mechanisms contributing to increased camouflaging amongst those with higher autistic traits are not yet clear. However, preliminary findings from two included studies suggest that experiences of stigma and not feeling accepted play a role (Cage et al., 2018; Perry et al., 2021).

The second key finding from this review is that, across the lifespan, the majority of included studies found that autistic females and girls/women demonstrate higher levels of camouflaging than autistic males and boys/men (Cassidy et al., 2018; Corbett et al., 2021; Hull, Lai, et al., 2020; Jedrzejewska & Dewey, 2021; Lai et al., 2017; Ormond et al., 2018; Parish-Morris et al., 2017; Perry et al., 2021; Ratto et al., 2018; Rynkiewicz et al., 2016; Schuck, et al., 2019; Wood-Downie et al., 2020). The remaining included studies found null results and no study found the converse effect of



higher camouflaging in males or boys/men. Sex and gender differences were demonstrated using both self-report and internal-external discrepancy measurement approaches. While no study directly compared camouflaging efforts and observable social behaviours, these findings provide preliminary evidence that compared to autistic males and boys/men, autistic females and girls/women appear to consciously engage in more camouflaging, with more noticeable effects. Thus, the current evidence base appears to support suggestions that camouflaging is more associated with the experiences of autistic females and girls/women, and may partially explain increased rates of missed or late diagnosis found amongst them (Duvekot et al., 2017; Dworzynski et al., 2012; Head et al., 2014; Kirkovski et al., 2013; Lai & Baron-Cohen, 2015; Lehnhardt et al., 2016; Shattuck et al., 2009; Whitlock et al., 2020). Yet, the consistent documentation of camouflaging in autistic males and boys/men also shows that camouflaging is not specific to females and girls/women (Lai et al., 2017; Hull, Lai, et al., 2020). Indeed, given the effect sizes were often small-to-moderate for sex and gender differences, the real-life camouflaging experiences of these groups may be broadly similar.

Unfortunately, owing to a lack of research involving adequately powered samples of non-binary people, drawing conclusions about differences in camouflaging between binary and non-binary genders was not possible. It is, however, important to acknowledge that one study found non-binary autistic people to engage in similar levels of camouflaging to autistic women (Perry et al., 2021). It should be added that a more nuanced understanding of sex and gender differences in camouflaging is currently lacking, owing in part to included studies largely failing to provide a comprehensive characterisation of participants' gender identity via the description of the multiple components of sex and gender.

The third key finding was that, for autistic adults, higher self-reported camouflaging appeared to be associated with increased symptoms of mental ill health (Beck et al., 2020; Cage et al., 2018; Cage & Troxell-Whitman, 2019; Cassidy et al., 2018; Hull et al., 2019, 2021; Lai et al., 2017; Robinson et al., 2020). As such, the current evidence base suggests that autistic individuals who feel

a greater need to modify their social behaviours via camouflaging experience more mental health difficulties. At the same time, an association between observable camouflaging efficacy, measured via internal-external discrepancy approaches, and mental health difficulties was not consistently found for either autistic adults or children. Thus, the relationship between camouflaging and mental health difficulties may be more related to an individuals' belief that they need to camouflage their autism rather than their ability to do so. However, to date, no studies have explored interactions between mental health difficulties, camouflaging intent and camouflaging efficacy. Moreover, it is important to note that due to the cross-sectional nature of the current research base, a causal relationship between camouflaging and mental health difficulties cannot be inferred. Nonetheless, any association between psychological distress and camouflaging is of significant concern, given the high rates of co-occurring mental health difficulties found amongst autistic adults (Lever & Geurts, 2016).

### **Research into Camouflaging in Autism: Current Limitations**

As is often the case in autism research (e.g., West et al., 2016; Russell et al., 2019), most of the included studies were limited regarding their characterisation of participants. Many studies failed to provide information regarding participants' IQ, educational attainment, social economic status, and race/ethnicity. Similarly, as previously mentioned, the description of the multiple components of sex and gender was largely absent in included studies. Given the heterogeneity of the autistic community, adequately described samples are key in determining the generalisability of research findings. Equally, comprehensive descriptions of race/ethnicity, gender identity, sexual orientation, and social economic status are especially necessary in camouflaging research owing to the likely role of marginalisation in the development and perseverance of camouflaging (Botha & Frost, 2020; Lai et al., 2020; Perry et al., 2021).

Notwithstanding, available data suggested that adult participants in camouflaging research were mostly white, university educated females and/or women diagnosed in adulthood with a mean IQ in the "high average" range. By contrast, child and adolescent participants were mostly white

males and/or boys diagnosed in childhood with a mean IQ in the “average” range. Current evidence of camouflaging across the lifespan therefore involves samples differing on the key demographics of sex and gender, IQ, and age of diagnosis, which makes it difficult to draw inferences about the progression of camouflaging across different developmental stages. Moreover, given these sample demographics, the current camouflaging evidence base cannot be applied to the autistic community as a whole. Adult-focused research particularly is limited in generalisability regarding males and men, people of non-white ethnic groups or races, those diagnosed in childhood, those with lower educational attainment, and those with intellectual disabilities.

In seeking to design camouflaging research that is more representative of the broader autistic community, it is important to understand why current camouflaging research involves such a specific minority of the larger population of autistic adults. A subset of included studies purposely recruited females or women or those without intellectual disability, to examine specific research questions (Beck et al., 2020; Brown et al., 2020; Lai et al., 2017, 2019; Schuck et al., 2019). However, in the remaining online questionnaire-based studies, individuals largely self-selected to participate by responding to adverts distributed via social media, autism organisations, or research databases. The homogenous nature of these self-selecting samples across studies may indicate that camouflaging is particularly central to the experience of late-diagnosed autistic females and women, a notion that may be supported by the current evidence base. However, the lower rates of males and men in self-report studies may have also resulted in the under identification of camouflaging behaviours and strategies specifically used by these groups (Fombonne, 2020). Additionally, the substantial reliance on online questionnaires within camouflaging research likely means members of the autistic community who are less active online or for whom questionnaire-based methods present a barrier to participation (e.g., those with certain intellectual or language difficulties) have been systematically excluded (Hull, Lai, et al., 2020; Lai et al., 2020; Livingston et al., 2020).

## **Camouflaging in Autism: Future Directions**

### ***Conceptualisation and Measurement of Camouflaging***

Advancement in our understanding of camouflaging is reliant upon valid and reliable camouflaging measures. Given that our current understanding of camouflaging is still emerging, ongoing work is required in refining not only camouflaging measures but also the construct itself (Lai et al., 2020). Current self-report and internal-external discrepancy measurement approaches may capture two distinct but potentially related elements of camouflaging: self-perceived engagement in camouflaging ('camouflaging intent') and observable behavioural presentation ('camouflaging efficacy'). Future research directly comparing self-report and observer rated methods is now required to test this notion and determine the extent to which these elements show concurrent validity in measuring separate aspects of the same underlying construct. Equally, direct comparison of self-report and observer-rated measures is needed to determine the role of conscious awareness in changed social presentation.

It should also be noted however, that across included studies, self-perceived engagement in camouflaging was differentially operationalised as: motivation to engage in camouflaging; specific behaviours and strategies used in camouflaging; and the frequency or pervasiveness of camouflaging in various social contexts. Further research is needed to clearly differentiate these related but separate aspects of camouflaging, and qualitative research may be particularly useful in this regard. Subsequent examination of each of these distinct aspects of camouflaging, related to both self-perceived engagement and observable behaviour change, is required in both autistic and non-autistic samples. Specific efforts should be made to include non-autistic samples who similarly experience social challenges (i.e., social anxiety) or stigma, to further the current conceptualisation of camouflaging and help in distinguishing autism specific elements of camouflaging (Lai et al., 2017, 2020).

### ***Longitudinal and Experimental Research***

Although a cross-sectional association between camouflaging and mental health difficulties was identified from the current research base, longitudinal research is now required to investigate the direction of this relationship and causality. Equally, questions regarding causality may be investigated by experimental designs, for example a randomised control trial of an intervention to reduce camouflaging with mental health outcomes as secondary outcomes. Longitudinal research will also be helpful in establishing the developmental trajectory of camouflaging through childhood to adulthood, as well as sex and gender differences in camouflaging across different developmental stages.

### ***Adequately Described, Representative Samples***

Future research should focus on groups currently underrepresented in camouflaging research, including adult males and men, people of non-white ethnic groups and races, those with intellectual disabilities, and adults diagnosed in childhood. Such samples will also facilitate further exploration of the impact of having multiple-minority identities on camouflaging effects (Botha & Frost, 2020). Diversification in terms of measures and recruitment practices is likely required to reach such individuals.

### ***Limitations of the current systematic review***

As is the case with any systematic review, my search may not have been exhaustive. Additionally, as an author who have previously published camouflaging research, including research featured in this review, I acknowledge that I am embedded within the camouflaging field and that this may have had an impact on the review. Whilst my familiarity with the topic likely improved my ability to draw conclusions about and identify limitations within the evidence base, it may have increased the risk of bias. Finally, the review did not involve community-engaged practices and thus is limited by a lack of autistic input.

## Conclusions

This is the first review to systematically appraise and synthesise the current evidence base pertaining to autistic camouflaging in children and adults of all sexes and genders. Three preliminary conclusions about the nature of autistic camouflaging emerged: (1) adults with more self-reported autistic traits report greater engagement in camouflaging; (2) autistic females and girls/women appear to demonstrate more camouflaging than autistic males and boys/men; and (3) higher self-reported camouflaging is associated with increased mental health difficulties. However, the evidence base was limited regarding participant characterisation and representativeness, suggesting that conclusions cannot be applied to the autistic community as a whole. Given the nascent stage of camouflaging research, future research is required to refine both the construct of camouflaging as well as current measurement approaches (Lai et al., 2020).

## Chapter 4: Camouflaging in an Everyday Social Context: An Interpersonal Recall Study

### Abstract

The current chapter explored autistic adults' camouflaging in an everyday social context via Interpersonal Process Recall methodology (IPR; Kegan, 1969). Seventeen autistic adults (8 female, 6 male, and 3 agender/gender-neutral individuals) participated in a ten-minute controlled social task designed to replicate a common day-to-day social situation. Participants then watched a video of their interaction with a researcher, actively identifying instances of camouflaging and discussing their experiences of camouflaging. Using thematic analysis, four themes were generated: (i) a strong desire for, yet uncertainty in, securing social acceptance and connection; (ii) camouflaging, developed over time, as a means to achieve social acceptance and connection; (iii) experiencing intrapersonal and interpersonal camouflaging consequences during social interactions; and (iv) authentic-feeling socialising as an alternative to camouflaging. These findings are discussed with reference to existing literature on stigma management in and outside the field of autism.

This Chapter is a version of a peer-reviewed published paper, Cook, Crane, Bourne et al., (2021). The full citation for this paper is as follows:

Cook, J., Crane, L., Bourne, L., Hull, L., & Mandy, W. (2021). Camouflaging in an everyday social context: An interpersonal recall study. *Autism*, 25(5), 1444–1456. <https://doi.org/10.1177/1362361321992641>

## Introduction

The systematic review presented in Chapter 3 suggested further work is required in refining the construct of camouflaging and that qualitative research may be useful in this regard. To this end, Chapter 4 and 5 explore autistic adults' camouflaging in an everyday social context via Interpersonal Process Recall methodology (IPR; Kegan, 1969). Using the methods detailed later in this chapter, qualitative data was collected from 17 autistic adults. The current chapter (Chapter 4), uses thematic analysis to detail the development, process, and consequences of camouflaging. The next Chapter, (Chapter 5) uses content analysis to explore a different aspect of this data and describe the behaviours exhibited, altered, or avoided by autistic adults when camouflaging.

In an online survey of 262 autistic adults, the majority reported that they consistently engage in camouflaging strategies in a range of everyday social situations, such as in interactions with work colleagues, friends, and health professionals (Cage & Troxell-Whitman, 2019). Camouflaging is associated with higher intelligence quotient (IQ) scores (Lai et al., 2017) and executive functioning abilities (Hull et al., 2020; Lai et al., 2017; Livingston et al., 2019a); the female sex/gender (Hull et al., 2020; Lai et al., 2017; Schuck et al., 2019); and specific personality traits (Robinson et al., 2020). The precise mechanisms that enable camouflaging abilities, as well as the process through which these abilities are developed, are poorly understood. Yet we know that camouflaging is linked to a range of negative consequences for autistic adults (e.g., misdiagnosis, identity confusion, and mental health difficulties; Beck et al., 2020; Cassidy et al., 2018; Hull et al., 2017).

In considering approaches to investigating camouflaging, it is important to acknowledge that similar to other social phenomenon, camouflaging is not a construct located solely within an individual, rather it operates within social interactions that exist in a broader social context (Jaswal & Akhtar, 2019). As such, there is much to be gained by examining camouflaging via qualitative methods, with reference to the broader social context as well as other social phenomena and



mechanisms operating in this context. One such social phenomenon, likely to be particularly relevant to the study of camouflaging, is the double empathy problem (Milton, 2012; Milton et al., 2018). The double empathy problem suggests that, owing to differences in social norms and expectations, both autistic and non-autistic people experience communication, reciprocity, and rapport problems during cross-neurotype social interactions.

To date several studies have provided valuable insights into the process, motivations, and short- and long-term consequences of camouflaging via interviews and surveys of autistic adolescents and adults (e.g., Bargiela et al., 2016; Hull et al., 2017; Livingston, Shah, & Happé et al., 2019). Yet traditional qualitative research techniques alone which rely solely on retrospective accounts often cannot yield the detailed and precise information required to develop a more comprehensive understanding of social phenomenon.

The present study aims to overcome these limitations through a qualitative investigation of camouflaging in an everyday social context via the novel use of IPR (Kagan et al., 1969) methodology. Whilst new to the field of autism, IPR has previously been used in psychotherapy, education, health, and sport research to gain rich and detailed information about psychological experiences, processes, and behaviours (e.g., Bartz, 1999; Burgess et al., 2013; Larsen et al., 2008; Marsh, 1983; Rhea et al., 1997). In the current study, participants firstly took part in a short introductory conversation with a non-autistic stranger. Following this interaction, they completed a semi-structured interview whilst viewing the audio-visual recording of their earlier social interaction. During the interview, participants actively identified specific camouflaging behaviours and processes and discussed their experiences of the experimental social interaction as well as their everyday social experiences more generally.

The purpose of the current study is to explore the process, development, and experience of camouflaging for autistic adults.

## Method

### Participants and Recruitment

Participants were recruited via social media and through London-based autism support groups. Participants were eligible to take part if they met the following inclusion criteria: (1) aged over 18 years; (2) formally diagnosed with autism by an appropriate health care professional and/or multidisciplinary team; (3) without an intellectual disability (i.e., having an estimated IQ at/above 70) and (4) engaged in camouflaging (i.e., self-identifying as 'engaging in camouflaging in their everyday lives' and having a score of 100 or above on the Camouflaging Autistic Traits Questionnaire (CAT-Q; Hull et al., 2019)). Twenty-two autistic individuals enrolled in the study but one did not meet eligibility criteria, one withdrew before attending the lab, and three attended the lab but did not complete the full experimental procedure. Data for 17 adults (see Table 7) were collected in full and analysed.

**Table 7***Participant Demographics*

Pseudonym	Age Range	Gender	Ethnicity	CAT-Q
Angela	50-54	Female	White British	137
Ashley	40-44	Agender/gender neutral	White British	145
Beth	35-39	Female	White British	114
Belinda	30-34	Female	Mixed Other	138
Catherine	30-34	Female	White Other	130
Caroline	25-29	Female	Hispanic	106
David	45-49	Male	White British	113
Desi	45-49	Agender/gender-neutral	White Other	132
Edward	50-54	Male	White British	136
Eric	60-64	Male	White British	108
Fred	50-54	Male	White British	114
Frank	55-59	Male	White British	134
Greyson	20-24	Agender/gender-neutral	White British	148
Gail	50-54	Female	White British	160
Helena	55-59	Female	White British	158
Harriet	35-39	Female	White Other	162
Ian	55-59	Male	White British	121
	<i>M</i> = 44.53			<i>M</i> = 132.71
	<i>SD</i> = 12.03			<i>SD</i> = 18.1

*Note.* Precise ages are not provided to protect participant confidentiality. Mixed Other = mixed ethnicity other than Asian and White or Black and White; White Other = White ethnicity other than White British or Irish. CAT-Q: Camouflaging Autistic Traits Questionnaire (Hull et al., 2019).

All participants had estimated IQ's above 70 ( $M = 112.47$ ,  $SD = 4.65$ ), on the Test of Premorbid Functioning (TOPF; Wechsler, 2009) and scored above the clinical screening cut off of 26 ( $M = 39.71$ ,  $SD = 6.02$ ), on the Autism Quotient (AQ; Baron-Cohen et al., 2000, Woodbury-Smith et al., 2005). All participants were diagnosed in adulthood and the mean age of diagnosis was 41.71 years ( $SD = 12.18$ ). Most participants were university educated, engaged in full or part-time employment or education, and lived independently (see Table 8). Specific information on socio-economic status was not recorded.

**Table 8**

*Education, Occupation and Living Arrangements of Participants*

	N (%)
<b>Education</b>	
PhD	1 (5.9%)
Master's degree	7 (41.2%)
Bachelor's degree	8 (47.1%)
A-levels (16-18 years)	1 (5.9%)
<b>Occupation</b>	
Working full-time	6 (35.3%)
Working part-time	7 (41.2%)
Voluntary employment	2 (11.8%)
Caring duties	1 (5.9%)
Student	4 (23.5%)
Unknown	1 (5.9%)
<b>Current living circumstances</b>	
Lives independently	17 (100%)

*Note.* Percentage may not sum 100% because of rounding. Employment categories not mutually exclusive. Mixed Other = mixed ethnicity other than Asian and White or Black and White; White Other = White ethnicity other than White British or Irish.

**Measures and Tasks**

***Autism Spectrum Quotient (AQ)***

The AQ (Baron-Cohen et al., 2001) is a 50-item self-report measure of autistic characteristics. The AQ was used to give an estimation of autistic traits within the sample. Scores on the AQ range from 0 to 50 with higher scores indicating the presence of more autistic characteristics. Internal consistency in my sample was good ( $\alpha = 0.81$ ).

### ***Camouflaging Autistic Traits Questionnaire (CAT-Q)***

The CAT-Q (Hull et al., 2019) is a 25-item self-report measure of camouflaging. Items are rated on a scale (from 1 = strongly disagree, to 7 = strongly agree) with higher scores indicating greater levels of camouflaging. A total CAT-Q score of 100 and above was used to determine eligibility to the study. Whilst the lowest end of this range indicated a relatively neutral endorsement of camouflaging behaviours, it was selected in an effort to avoid an overly prohibitive definition of camouflaging based on a newly developed measure. Internal consistency in my sample was good ( $\alpha = 0.84$ ). A copy of the CAT-Q is provided in Appendix F.

### ***Test of Premorbid Functioning- UK Version (TOPF)***

The TOPF (Wechsler, 2009) is a brief, standardized test of premorbid intellectual functioning suitable for individuals aged 16 to 90 years that involves reading 70 words aloud. The TOPF has been shown to accurately predict the Full-Scale Intelligence Quotient on the Wechsler Adult Intelligence Test Fourth Edition for individuals with average and low average intellect (Watt et al., 2016). The TOPF also demonstrates good test–retest stability ( $r = .89 - .95$ ; Wechsler, 2009).

### ***Getting Acquainted Social Task***

Participants completed a standardised “getting acquainted” social interaction modelled on prior research with non-autistic adults (e.g., Inderbitzen-Nolan et al., 2007; Plasencia et al., 2011; Taylor & Alden, 2010). This involved each participant partaking in a ten-minute open-ended conversation with an unfamiliar female social partner. The experimenter (me) explained to the participant that they would be spending time conversing with, and getting to know, this social partner and that they should act as they normally would when meeting a stranger that they wish to make a good social impression on. The participant was then asked to enter the room where the social partner was waiting and to continue conversing with the social partner until the experimenter entered the room.

One non-autistic postgraduate psychology student acted as the ‘social partner’ during the task so as to replicate a degree of the double empathy problem (Milton, 2012) commonly faced by

autistic people in everyday social contexts. In order to standardize the interactions and limit any potential distress or discomfort to participants related to the double empathy problem, she was trained to engage with participants in a friendly yet reserved manner following a protocol modeled on prior research (Inderbitzen-Nolan et al., 2007; Plasencia et al., 2011; Taylor & Alden, 2010). Specifically, through a series of practice role-plays, the post-graduate psychology student was trained to consistently and naturally: (1) speak in a warm tone; (2) allow 2-3 second pauses after the participants' last comment before speaking; (3) allow a ten second pause in the case of non-reciprocation (i.e. if she asked two questions in a row or made two comments in a row and the participant minimally reciprocated); (4) occasionally offer encouraging comments (e.g., "Tell me more about that"); (5) engage in a moderate level of self-disclosure; (6) engage in a moderate number of minimal encouragers; and (7) maintain steady and comfortable eye contact while looking away briefly at times. She was given a list of conversation topics to discuss in order to maintain consistency across participants. She was also aware all participants were autistic.

One post-doctoral researcher served as an observer and checked the social partner's adherence to the protocol and consistency across participants. The observer viewed audio-visual recordings of the social task and rated the social partner on the five dimensions of friendliness, talkative, disinterested, distant, and self-disclosure using a seven-point scale (from 1 = not at all, to 7 = very much). Ratings were combined to give an overall rating of the social partner's friendliness and warmth. This scale has previously been shown to have adequate internal consistency ( $\alpha = 0.72$ ; Plasencia et al., 2011). Mean warmth rating of the social partner was 27.82 ( $SD = 2.72$ ) indicating she adhered to expected behavior.

### ***IPR Interview***

Immediately after the social task, participants completed a semi-structured interview with the experimenter based on IPR procedures (Larsen, 2008). The participant was informed that the purpose of the interview was to discuss ways in which they may have used camouflaging strategies during the experimental social task. The participant and experimenter then watched the audio-visual

recording together and the participant was instructed to stop the video whenever they noticed themselves using, or thinking about, camouflaging strategies. When necessary, the experimenter asked the participant clarifying questions about their behavior (i.e., to describe what they did or said). Once the behavior was described, the experimenter followed the participants' lead, asking follow-up questions about internal (e.g., their thoughts, emotions, and motivations) and past experiences (e.g., how the participant learnt the behavior) related to their behavior (see Appendix G).

Procedures for the "getting acquainted" social task and IPR interview were carefully examined and modified by the research team (where necessary) to ensure suitability for use with, and accessibility for, autistic adults. Given that IPR interviews typically average two to three times the length of the preceding interpersonal interaction (Larsen et al., 2008), the length of the social task was restricted to ten minutes to minimise the demands placed on the participants. Additionally, the interviewer ensured participants clearly understood the purpose of viewing the video of the social task was to explore participants' experiences related to camouflaging and not to judge or evaluate their social skills. The first four participants of the study provided open-ended feedback regarding the suitability and accessibility of the study procedure for autistic adults. No further modifications were required as a result of this feedback.

### **Procedure**

Ethical approval was obtained from University College London Research Ethics Committee (approval no: 14839/001; see Appendix H). Individuals who expressed interest in the study were provided with information sheets and given the opportunity to discuss these information sheets with the experimenter. Participants then provided their informed written consent and completed the demographic questionnaire, AQ, and CAT-Q online. Participants who scored above 100 on the CAT-Q then attended the laboratory where they completed the social task, IPR interview, and TOPF. Where available, participants brought written confirmation of their autism diagnosis to the

laboratory to be verified by the experimenter (16/17 participants). In total the testing session took approximately 90 mins.

### **Community Involvement**

Autistic people were involved in the current study as participants. They were not involved in the design or implementation of the study nor the analysis or dissemination of its findings.

Wherever possible, the AASPIRE guidelines for conducting research with autistic participants were followed (Nicolaidis et al., 2019). Unfortunately, due to the unique IPR methodology used in the study it was not possible to offer multi-modes of participation as suggested in these guidelines.

### **Data Analysis**

Thematic analysis was conducted within a critical realist framework (Maxwell, 2012) following the reflexive thematic analysis approach developed by Braun and Clarke (2006, 2013, 2019; Terry et al., 2017). Reflexive thematic analysis offers the possibility of an inductively developed analysis involving semantic (surface) and latent (implicit) meaning within data; essential in examining a phenomenon such as camouflaging that is located within a wider social system but also arises from and impacts upon an individual's internal experiences. Owing to its theoretical flexibility, reflexive thematic analysis allows for analysis to be informed by critical realism.

The data analysis process was conducted over an eight-month period and involved recursively moving through data familiarization, coding, theme development, and review. I read and re-read all interview transcripts, noting down and reflecting upon my initial thoughts and responses. Using NVivo-12 computer software I generated codes based on similarities, contradictions, and disputations in the data set. In collaboration with LC and WM, I then grouped codes together to form candidate themes. At this point it was decided that further engagement with data in the form a second coding of the data set was required. Thus, I conducted a second coding of the entire data set through which initial codes were revised. I then grouped codes together to form candidate themes (again in collaboration with LC and WM). Next, we recursively returned to candidate themes;



checking each against the data and revising as necessary. Final themes were refined, defined, and named. Examples of coding and theme development work are provided in Appendix I.

With regard to reflexive practice, WM, LC, and I met regularly throughout data analysis to reflect upon our prior knowledge and assumptions about camouflaging; our responses to and interpretations of the data; and the manner in which our prior knowledge, assumptions, and experiences shaped these responses and interpretations. I additionally completed reflexive journaling. Through this journaling, I noted my responses to and understanding of the data; interrogated the manner in which my prior knowledge, assumptions, and experiences shaped these responses and understanding; and then revisited my understandings and interpretation of the data. Example extracts from this reflexive diary are provided in Appendix I.

### **Results**

The four themes generated related to the experience of camouflaging for autistic people including: (i) a strong desire for, yet uncertainty in, securing social acceptance and connection; (ii) camouflaging, developed over time, as a means to achieve social acceptance and connection; (iii) experiencing intrapersonal and interpersonal camouflaging consequences during social interactions; and (iv) authentic-feeling socialising as an alternative to camouflaging.

**Acceptance and Connection: “[Autistic people] often genuinely want to make a connection they just find it difficult.”**

Participants were motivated to interact with others in a manner that facilitated social acceptance and connection but held doubts about their ability to do so. Participants reflected on the need to create a particular kind of impression to be “valued” and “liked” by others. In turn, they felt this would increase the likelihood of much desired future social interaction and ultimately ongoing companionship. Participants felt that managing their impression was particularly important during initial interactions with “new” people, suggesting unfamiliar social partners were more likely to hold them in negative regard.

Some participants sought to promote their social image via positive attributes, reporting attempts to be perceived as “similar” to their social partner, “friendly”, “nice”, and “intelligent”. However, other participants spoke of the need to defend their social image against potential negative social evaluations. These participants focused their impression management efforts on avoiding negative attributes and ensuring that they were not perceived as, for example, “weird”, “strange”, “threatening”, “dominating,” or “boring.”

Some participants’ efforts were focused on concealing their autistic identity or portraying a non-autistic, conventional or otherwise valued identity. When reflecting on her behaviour during the experimental social task, Helena positioned her autistic identity as one that must be hidden in order to present as possessing the more valued, non-autistic identity: “This is very safe ground.... because, it gives a little bit about me away but not enough...it’s nothing that really indicates that maybe I’m high functioning autism or anything like that.” Similarly, Fred highlighted his effort to position himself as possessing a valued or desirable identity: “I suppose I’m trying to say that I am a responsible member of society in some way.”

Some participants sought to create a desirable social impression by engaging in non-autistic, as opposed to autistic, social behaviours. Some participants engaged in these behaviours during the experimental social task despite assuming the research assistant knew of their autistic identity. Thus, they appeared to believe that interacting in accordance with non-autistic social norms and expectations was required to gain acceptance during social interactions even when their autistic identity was known. This requirement was articulated by Catherine when explaining her use of hand wringing to reduce anxiety instead of hand flapping: “This [demonstrates hand flapping], works a lot better but it gets people’s attention a lot more so we don’t this [hand flapping], we do this [demonstrates hand-wringing], it’s a lot more socially acceptable.”

Past experiences of criticism, rejection, and misunderstanding during social interactions were central in participants’ efforts to interact with others in a manner that facilitated acceptance from, and social connection with, others. Participants described experiences in which non-autistic

social partners explicitly or implicitly associated participants' displays of overt autistic behaviours with negative social traits, for example being "rude," "sick," or "shifty".

"You're stupid, you're abnormal or when you start to do this [demonstrates body rocking] it's a sign that you're sick, something is wrong in your brain and I have heard that from my own father when I was little". (Harriet)

Participants also positioned themselves as responsible for the outcome of past negative social experiences with non-autistic others, attributing interpersonal difficulty or rejection to failures in their own interpersonal behaviour and self-presentation.

"When [I] went to the toddler groups and I thought I can't talk to these women. I don't know what to say. They would all say, "Oh, we're having problems with so and so's eating or sleeping," so I'd come back the next week and I'd have articles and books and have loads of suggestions. This might work. And they did, they were working [for] me. And of course, they all hated me and they said you're a know it all. And [I] was like no, I think I know nothing, that's why I read the books." (Gail)

A lifetime of such social experiences appeared to leave some participants uncertain and anxious about their ability to successfully portray the kinds of social impressions that would lead others to value social relationships with them. Camouflaging was seen by participants as a means of improving their social impression.

**Camouflaging Process: "It would be to appear non-autistic, that is the main reason why I personally do that."**

Participants reported engaging in social behaviours that demonstrated their positive attributes and highlighted similarities between themselves and their social partner. They avoided behaviours that potentially signalled undesirable traits, fostered conflict, or created anger, discomfort, or distress in others.

"I brought up global warming, but I thought to myself, "No don't bring up global warming, don't start talking about that." I think it's a bit of a sensitive topic which some people

believe, some people don't believe, and in a way sometimes it can cause an argument."

(Caroline)

Some participants described displaying verbal and non-verbal behaviours perceived to be associated with non-autistic socialising whilst suppressing their more innate (and often autistic) verbal and non-verbal behaviours: "What I'm trying to do is to smooth my tone of voice out...and make it sound less choppy which seems closer to what most neurotypical people do" (Greyson).

Some participants selectively shared information about themselves; emphasising their more normative interests, and characteristics, or circumstances and minimising more autistic or less conventional interests, characteristics, and difficulties: "I guess I'm acutely aware of [autistic] blokes that are like "I like trains. I like buses," and I don't want to be seen like that you know?" (Beth).

The camouflaging process appeared to assist some participants to compensate for personal difficulties that interfered with their ability to adhere to non-autistic social norms. Participants identified experiencing challenges with, for example, understanding others' perspectives, reading subtle social cues, processing verbal information quickly, and remembering faces as well as an awareness of the manner in which these challenges impacted particular aspects of social interactions: "I find that difficult. You know, whether too little or too much information. What the information that person wants or if it's just small talk at face value" (Ian).

Behaviours exhibited or suppressed by participants functioned as a part of their idiosyncratic solutions to these problems. For example, Desi described being aware that they had difficulty maintaining conversations and used a scripted phrase to overcome this: "I did my usual party trick of she asks me a question and I just flip it back and I give her answers and flip it back and say, "And you?" It's my way of keeping the conversation going."

The camouflaging process also appeared to involve the dynamic monitoring of, and adaptation to, cues in the social environment. Participants spoke of "constantly" monitoring their own social behaviour to ensure they adequately performed camouflaging behaviours. At the same time, they described closely examining their social partner's interpersonal cues for signs of, for example,

engagement and interest or boredom and discomfort. They then adjusted their behaviours in response to these cues.

“[The social partner] is nodding and appears to be engaged which is why I carried on with conversation. If she started to look bored and not terribly interested, I would have gone to a different topic of conversation, probably her.” (Eric)

Signs of camouflaging “failure” appeared to be particularly salient to participants when monitoring their social performance. Some participants spoke about failing to achieve their camouflaging or self-presentation goals: “I don’t look as normal as I think I do” (Belinda). Other participants identified instances of themselves failing to keep certain autistic characteristics “under control,” perform specific camouflaging behaviours, or read and respond to their social partner’s social cues: “I kept thinking I shouldn’t really wriggle my legs so much, but I just couldn’t help it” (Desi).

Participants’ idiosyncratic repertoires of camouflaging behaviours were developed and refined through an iterative process over time. Some participants spoke of learning new behaviours or changing their behaviours in response to criticism, rejection, or devaluation from non-autistic others: “Someone said to me, you never make eye contact, you look really shifty. So, I had to train myself to do eye contact” (Angela).

Other participants described carefully observing people (autistic and non-autistic) engaging in social interactions from afar, carefully noting the manner in which they engaged with and responded to each other. Some reported focusing in particular on the behaviours of socially valued individuals and of trialling these behaviours in their own social interactions.

“I used to hate her laugh because it used to give me a headache but everyone seemed to really like her and they always used to say things like, “Oh, she’s so happy, she’s so funny,” and I thought, “Oh, maybe I will try and make myself a bit more like her.” So I changed my laugh and I started practising my laugh to make it a bit more like hers” (Ashley).

Some participants reflected that whilst many of these behaviours initially required much effort and conscious thought, after many years, certain camouflaging behaviours now occurred automatically or unconsciously. However, other participants did not experience any automatization of their camouflaging behaviours.

**Intrapersonal and Interpersonal Consequences of Camouflaging: “It’s a lot more taxing, it’s a lot more difficult and it’s a lot less authentic.”**

When reflecting on their experience of the experimental social task, some participants identified multiple, discrete episodes of increased anxiety. These episodes were often triggered by threats to their self-presentation goals, for example participants becoming aware of social cues indicating the social partner may be criticising, rejecting, misunderstanding, or otherwise devaluing the participant or participants’ uncertainty regarding how to act or respond.

“I mean [the social partner] is quite uncomfortable there. And I can sense that she’s covering herself and fiddling and I am sort of thinking, “Oh God, how can I make her feel more comfortable?” But I don’t really know what I’m going do, but I’m worried” (David).

The camouflaging process was also viewed by participants as cognitively taxing, exhausting, and difficult to sustain. Some participants identified specific camouflaging behaviours as being particularly effortful or challenging.

“ I do make eye contact with people but you can see it is reduced here because, and that is generally where it is reduced, I tend to look away because I’ve got to think about what I’m thinking about and trying to look at someone at the same time is extra burden” (Frank).

Other participants described cognitive aspects of camouflaging such as monitoring their performance and the social cues of others as being challenging and energy consuming.

“I think all of those things that go on in the background can be quite exhausting for someone of the spectrum because you are managing all that stuff whereas for another person it’s just a natural back and forth thing. Whereas you have to manage your thoughts of, “Am I talking

too much, or just talking too much and not realising?” and it’s just all the things”

(Catherine).

Participants’ descriptions of their social experiences suggested they continued to experience social cognition difficulties whilst engaging in camouflaging. Some participants spoke of being unsure about what to do or say during interactions and of finding it difficult to read others’ social cues: “I, as with most people with Asperger’s/autism am not very good at interpreting body language, so I tend to feel - am I going on about something and the other person is just bored?” (Edward)

The effort required to successfully overcome these social difficulties and simultaneously camouflage contributed to participants experiences of exhaustion and fatigue during social interactions. In the same way, the uncertainty caused by social confusion and insecurity appeared to contribute to participants feelings of anxiety.

Camouflaging appeared to have additional interpersonal consequences for participants’ social interactions. Some participants paradoxically described camouflaging as interfering with their ability to fully engage and effectively communicate during social interactions and in turn make certain desired impressions. For example, some participants associated the performance or concealment of particular behaviours with exacerbations in receptive and expressive language difficulties. Angela explained how engaging in the camouflaging behaviour of eye contact interfered with her capacity to express herself and potentially, her ability to portray an impression of competence:

“If I am trying to make a good impression with you I have two options. I carry on looking at you and then have less brain function and so I will not be able to answer your question or I will have less ability to process what you are saying. If I look away I can listen more and I can think more. So although in an interview or whatever where I am trying to pretend to not be autistic I think I would have to allow myself- I would make some eye contact as much as possible but I have to allow myself [to not make eye contact] otherwise I am just going to end up talking gibberish.”

Despite being viewed as necessary to develop much desired social connections, some participants also described camouflaging as limiting the closeness and intimacy of their social relationships.

“It’s a lot less authentic because you’re [non-autistic people] being yourself in a different mood versus [autistic people] being someone else entirely and if in all your close relationships you are pretending to be someone else then even if you superficially seem to have a really good social life, you have no genuine relationships with anyone because none of them really know you” (Greyson).

**Authentic-Feeling Socialising: “I am not ashamed anymore and I am feeling I have the right to express the ideas in the way I want to express them.”**

A diminishing desire to socialise in accordance with non-autistic norms or present a non-autistic identity was described by some participants. Often these participants reported consequent reductions in the frequency of their camouflaging during everyday social interactions. However, this experience was more complicated for some participants who spoke of difficulties engaging in, or even “knowing,” alternative means of socialising after a lifetime of camouflaging.

“But I don’t want to anymore. I’ve had enough of it. I want to switch it off now. I am fed up with it. I don’t feel like it’s got me.... I feel it is more for other people’s benefit than for my benefit and I feel like it takes up so much time and energy that I need to be able to switch it off but I feel like I have been doing it for so long that I don’t know how”(Ashley).

Engagement in more authentic-feeling socialising was associated with participants’ growing understanding and acceptance of themselves and in particular their social needs.

“Now I am more confident of who I am and why I reacted like that. I’m tending to camouflage less because I am not ashamed anymore and I am feeling I have the right to express the ideas in the way I want to express them so if I want to move a bit because it is helping my cognitive flow or if I want to not look in the eyes I’m not going to anymore because that is very damaging in the past” (Harriet).



For some participants, the diagnostic process was central to the development of their awareness and self-acceptance such that it provided them with both recognition and validation of their social differences and needs.

“I think I do it less than I used to because now I don’t have to pass as NT [neurotypical] do I? I’ve got a diagnosis, whereas before, why can’t I be normal? Something wrong, something not working. Just be normal” (Desi).

Some participants reflected on the role of others’ understanding and acceptance in creating a “comfortable” and “safe” environment that enabled authentic-feeling socialising. In this regard, familiarity with autism was framed as key with participants saying they camouflaged less in interactions with other autistic people or non-autistic people whom were perceived to be knowledgeable about autism. Non-judgemental and welcoming attitudes towards diverse interpersonal styles as well as diversity more generally were also described as important. In this way, participants’ friends and partners were often positioned as being both knowledgeable about and accepting of idiosyncratic or autistic difference: “I can trust them not to react badly and not to decide that they don’t like me and treat me badly because of that” (Greyson).

Within these contexts, participants described enacting a more autistic interpersonal style by engaging in more overtly autistic body movements, levels of reciprocity, and conversational exchanges: “When I get very excited and if I am around people who I trust that it is ok to do that [hand flapping]” (Catherine). Participants also spoke of being empowered to communicate their social difficulties and differences to others as well as any adaptations they required: “I will say to them, I’m listening to you just...I might not be looking at you” (Beth).

More autistic-feeling socialising appeared to be associated with increased feelings of ease, authenticity, enjoyment and decreased anxiety, stress, and exhaustion. This was articulated by Harriet, in her explanation of her mental state after engaging in body rocking and other stimming movements throughout the day: “It’s making it beneficial for me just going through the day and

arriving at the end of the day and not being overwhelmed because during the day I was reliving the pressure.”

### **Discussion**

For the first time in autism research, I used a combination of IPR methodology and thematic analysis to explore autistic adults’ experiences of camouflaging. Taken together, the four themes generated here detail the development, process, and consequences of camouflaging for my participants. Participants commonly encountered negative social experiences and responses from others as a result of their autistic characteristics and behaviours. Driven by their need for social connection, participants attempted to systemise the social environment and augment these social experiences and responses. Over time, they developed a belief that they must change their interpersonal presentation in order to achieve acceptance and connection as well as an ability to do so- the ability to camouflage. Their belief is activated in particular social contexts leading them to engage in a dynamic camouflaging process involving: exhibiting behaviours consistent with non-autistic identity and norms; monitoring personal social performance; and evaluating other’s interpersonal cues. Engagement in the camouflaging process results in situ intrapersonal and interpersonal consequences.

#### **Camouflaging, Social Motivation, and Mutual Social Influence**

Participants expressed a strong interest in, and motivation towards, interacting with others in a manner that facilitated social connection and further interaction. Such evidence of social motivation amongst autistic adults is consistent with past camouflaging research (e.g., Hull et al., 2017; Livingston, Shah, Happé et al., 2019). It also challenges the social motivation theory of autism (Chevallier, Kohls, et al., 2012), providing further evidence that social motivation is not universally diminished amongst autistic people (e.g., Jaswal & Akhtar, 2019).

Related to the concept of social motivation, mutual social influence refers to the tendency of individuals to influence, and be influenced by, their social environment (Forgeot d’Arc & Soulières, 2019). Participants’ accounts emphasised the role of mutual social influence in camouflaging such

that they sought to manage others' perceptions of them by portraying a non-autistic social presentation because, based on their past social experiences, they believed doing so would lead others to value social interaction and relationships with them. Such accounts support existing qualitative and experimental research from across the lifespan demonstrating that autistic people are susceptible to social desirability effects (Gernsbacher et al., 2019), experience reputation concerns (e.g., Bargiela et al., 2016; Cage et al., 2016a; Hull et al., 2017), and engage in reputation management or strategic self-presentation (Cage et al., 2013, 2016b; Scheeren et al., 2016 although see Chevallier, Molesworth, et al., 2012; Izuma et al., 2011).

### **Camouflaging and Stigma**

Negative or difficult social encounters with non-autistic others were often described by participants. As outlined in the double empathy problem (Milton, 2012; Milton et al., 2018) owing to differences in social norms and expectations, both autistic and non-autistic people experience communication, reciprocity, and rapport problems during neuro-diverse social interactions. However, research suggests autistic people also experience devaluation, rejection, and misunderstanding related to their autism label and/or overt autism-related behaviours (e.g., Kinnear et al., 2016; Milton, 2012; Milton et al., 2018; Sasson et al., 2017; Sasson et al., 2019). Indeed, research suggests that autistic people represent an identity-based minority group subjected to social stigma and disadvantaged social status (Botha & Frost, 2018). As such, our participants' reported attempts to gain acceptance and social connection by presenting and interacting in line with non-autistic identity and norms, is consistent with broader research on stigma management.

Individuals with concealable stigmas (e.g., mental illness diagnosis, particular sexual orientations, or a history of incarceration; Goffman, 1963; Jones et al., 1984) use identity or impression management strategies to control their interactions with others in order to conceal their stigmatised identity and pass as a more valued identity, thereby securing the acceptance and belonging of others (e.g., Goffman, 1963; Leary 1999; Olney & Brockelman 2003). Such strategies can include changes to interpersonal behaviour (e.g., tone of voice, gestures, or posture; Pachankis

& Goldfried, 2006) but predominately involve controlling potentially exposing information via deception, concealment, and evasion (Clair et al., 2005; Herek, 1996) as well as close monitoring of personal behaviour and the behaviour of others (Olney & Brockelman, 2003; Pachankis, 2007).

In a similar manner to other stigmatised identities (e.g., mental illness; Quin et al., 2004), autism could be conceptualised as existing on a continuum from conspicuous to concealable, depending on an individual's particular profile of autistic behaviours as well as their ability to conceal these behaviours. In this way, camouflaging may be thought of as a form of stigma management that is available to autistic individuals with more "concealable" autism (Cage & Troxell-Whitman, 2019). Indeed, the camouflaging process described by our participants represents a dynamic and sophisticated means of influencing and shaping the social environment that bears resemblance to the repertoire of behaviours described in the stigma management literature (e.g., Clair et al., 2005; Olney & Brockelman, 2003; Pachankis & Goldfried 2006). Participants actively adapted their interpersonal behaviours, selectively disclosed personal information, and engaged in performance and impression monitoring. However, changes to interpersonal behaviours were more central to participants' accounts of camouflaging than selective disclosure, omission, and concealment of personal information. This differential emphasis reflects the unique manner in which autistic behaviours attract as much or more stigma as an autism diagnosis. It also likely reflects non-autistic people's difficulties understanding autistic social communication (Crompton, Ropar, et al., 2020; Edey et al., 2016; Sheppard et al., 2016) and the consequent need experienced by autistic people to change their social behaviour and presentation so as to facilitate effective communication during cross-neurotype social encounters (Milton, 2012; Milton et al., 2018). In further contrast, participants highlighted the role of camouflaging in managing autistic differences/difficulties that lead to breakdowns in the impression management process and/or hindered effective communication with non-autistic others. As such, in the case of autism, camouflaging may represent both a means of portraying a valued social identity and overcoming communication difficulties in neurodivergent socialising.

### **Consequences of Camouflaging**

In line with previous qualitative research (e.g. Hull et al., 2017; Livingston, Shah, Happé, et al., 2019), participants associated camouflaging with adverse in situ consequences. Specific camouflaging strategies and components were identified by participants as being difficult or taxing to perform. Feelings of anxiety whilst camouflaging were similarly common and often triggered during the experimental social task by perceived threats to participants' self-presentation goals. Further, camouflaging was paradoxically described as interfering with participants' ability to fully engage and effectively communicate during social interactions; make certain desired impressions; and limiting authenticity and closeness within social relationships.

A dearth of experimental research exists examining the impact of camouflaging for autistic individuals with regard to cognitive resources; achievement of camouflaging and other interpersonal goals; and satisfaction in social relationships. However, the results of the systematic review presented in Chapter 3 suggests camouflaging is associated with mental health difficulties including anxiety.

The negative intrapersonal and interpersonal consequences of camouflaging described by our participants are consistent with experimental research on stigma management. Experimental research suggests that actively concealing stigma during social interactions decreases cognitive resources (Critcher & Ferguson, 2014; Smart & Wegner, 1999) and increases emotional strain (Barreto et al., 2006). Concealment of stigma is also associated with reduced feelings of belonging, authenticity and non-stigma related self-disclosure, as well as less positive observer rated social performance (Newheiser & Barreto, 2014). The psychological distress, cognitive burden, and interpersonal costs associated with camouflaging may be similar in nature to that of stigma management in other concealable stigmas (e.g., mental illness diagnosis, minority sexual orientation, or low social class background). However, given that participants described experiencing persistent social cognition difficulties during social interactions, I hypothesise that the adverse consequences of stigma management are likely exacerbated in the case of autism.

In the current study, participants associated more authentic-feeling socialising – that is, engaging in more overtly autistic social behaviours, explaining autistic social differences, and communicating autistic social needs –with decreased negative affect as well as increased positive affect. Participants’ accounts highlighted the role of both their own and others’ awareness and acceptance of diversity and autism in facilitating more authentic-feeling socialising. Such findings are in line with research suggesting disclosing a stigmatised identity in a supportive environment elicits multiple benefits including increased self-esteem and decreased distress (Corrigan & Matthews, 2003), increased likelihood of receiving social support (Beals et al., 2009), and improved social interactions (Newheiser & Barreto, 2014). However, at present more authentic socialising may not be associated with improved psychological wellbeing for the majority of the autistic community who lack access to such supportive environments (Botha & Frost, 2018).

### **Clinical Implications**

Insights gained from the participants in the current study have important clinical implications. Formal autism interventions explicitly teaching, for example, non-autistic social behaviours, may have the un-intended consequence of explicitly or implicitly reinforcing the notion that autistic people need to present and interact in line with non-autistic expectations and norms in order to be accepted and valued by society; in turn, encouraging camouflaging (e.g., Bottema-Beutel et al., 2018). Interventions that assist autistic people to understand and accept their social differences, as well as an ability to communicate these differences, may improve the everyday social experiences of autistic people. In order for autistic people to benefit from authentic socialising though, their autistic social behaviour must be met with understanding and acceptance on the part of non-autistic social partners.

Whilst the role of camouflaging in conforming to non-autistic social expectations was emphasised by participants, so too was the role of camouflaging in overcoming communication challenges in cross-neurotype socialising. Of significance, participants highlighted the manner in which camouflaging assisted them to overcome difficulties in identifying and interpreting non-

autistic verbal and non-verbal behaviours; understanding the rationale for or intentions behind non-autistic social behaviours; and maintaining social coordination with non-autistic people. These experiences highlight the manner in which the social difficulties of camouflagers are often overlooked (e.g., Bargiela et al., 2016; Hull et al., 2017). Thus, it is important to acknowledge the role of interventions that assist autistic people to understand non-autistic social behaviour, and vice versa non-autistic people to understand autistic social behaviour, in improving cross-neurotype social communication. However, it is equally important to acknowledge the effectiveness of autistic peer to peer social communication (Crompton, Ropar, et al., 2020).

### **Strengths and Limitations**

The results of the current study are strengthened by its novel methodology. Via the use of a standardised social task, involving a non-autistic social partner we successfully re-created a quasi-everyday social situation in which autistic people may be motivated to camouflage. IPR interviews yielded in-depth information about autistic adults' motivations, cognitions, and emotions related to camouflaging not before generated by more traditional qualitative research methods.

It is important to acknowledge that the themes generated here reflect the specific experiences of a sample of verbally fluent, late diagnosed, adults who self-identified as engaging in camouflaging. Camouflaging may be particularly pivotal in the lives of late diagnosed autistic people and in this regard, the current study provides valuable insights into the often under researched experiences of this group. Nonetheless, future research is needed involving for example, young adults, early diagnosed individuals, or those with an intellectual disability, for whom experiences of camouflaging may differ.

### **Conclusions**

The four themes reported here detail the manner in which our participants developed camouflaging through an iterative process over time in order to overcome barriers to social acceptance and connection and capture their experience of engaging in camouflaging and authentic-feeling socialising during interpersonal interactions. My findings suggest the non-autistic majority's

understanding and interpretation of autistic behaviour impacts upon autistic people's beliefs about themselves and the social world and in turn, the manner in which they engage in social interactions.

My findings resonate with research on concealable stigma whilst also suggesting potential differences in the function and consequence of identity management and camouflaging. These insights add to the growing recognition of the need for innovative, systemic approaches for improving the quality of social experiences for neurodivergent people.



## Chapter 5: Self-Reported Camouflaging Behaviours Used by Autistic Adults During Everyday Social Interactions

### Abstract

Autistic people may camouflage their innate autistic social behaviours in order to adapt to, cope within, and/or influence the predominately neurotypical social landscape. The current study describes behaviours exhibited, altered, or avoided by autistic adults whilst camouflaging (i.e., camouflaging behaviours). Using Interpersonal Process Recall methodology (IPE; Kegan, 1969), 17 autistic adults (8 women, 6 men, and 3 agender/gender neutral individuals) participated in a brief social task designed to replicate a common day-to-day social situation. Participants then watched a video of their interaction with a researcher, actively identifying and describing camouflaging behaviours. Using qualitative content analysis, descriptions of 38 camouflaging behaviours described by participants were clustered into four main categories and seven subcategories: (1) masking; (2) innocuous engagement (subcategories: passive encouragement, centring social partner, deferential engagement and reducing social risk); (3) modelling neurotypical communication; and (4) active self-presentation (subcategories: reciprocal social behaviours, risky social behaviours, and comfortable and familiar social behaviours). The novel use of IPR methodology addressed limitations in existing camouflaging research and facilitated the identification of previously unreported camouflaging behaviours. These camouflaging behaviours are discussed with reference to literature concerning interpersonal research and theory within in and outside the field of autism.

This Chapter is a version of a peer-reviewed published paper, Cook, Crane, Hull et al., (2021).

The full citation for this paper is as follows:

Cook, J., Crane, L., Hull, L., Bourne, L., & Mandy, W. (2021). Self-reported camouflaging behaviours used by autistic adults during everyday social interactions. *Autism*, 26(2), 406–421. <https://doi.org/10.1177/13623613211026754>

## Introduction

Chapter 5 involves the same IPR study detailed in Chapter 4. Chapter 4 used thematic analysis to detail the development, process, and consequences of camouflaging. Chapter 5 uses content analysis to explore a different aspect of this data, that is, behaviours exhibited, altered, or avoided by autistic adults when camouflaging.

Camouflaging is one means through which autistic people attempt to overcome social challenges within cross-neurotype social interactions to secure employment and education, develop friendships and romantic relationships, and even avoid harassment and victimisation (Cage & Troxell-Whitman, 2019; Hull et al., 2017). Qualitative research about autistic experience suggests that camouflaging positively influences the reactions and behaviours of non-autistic people towards autistic people (e.g., Hull et al., 2017; Livingston, Shah, & Happé, 2019). Yet the act of camouflaging is cognitively effortful and taxing; prone to breakdown under increased social demands and complexity and/or psychological distress; and associated with increased mental health difficulties (Beck et al., 2020; Cage & Troxel-William, 2019; Cassidy et al., 2018; Hull et al., 2021; Lai et al., 2017; Livingston, Colvert, et al., 2019). Thus, in seeking to improve the overall wellbeing of autistic people, it is important to understand the mechanisms through which camouflaging may lead to disparate social, functional, and health outcomes. Currently, very little is known about the extent to which camouflaging affects cross-neurotype social interactions and, in turn, impacts social and functional outcomes for autistic people.

The way in which an individual is perceived and treated by their social partner/s during any given social interaction depends on a complex interplay of factors related to both the individual and their social partner/s as well as the circumstances of the social interaction (Cuddy et al., 2008; Morrison et al., 2019; Xie et al., 2019). Nevertheless, individuals influence, and are influenced by, the behaviour of their social partner/s (De Jaegher, 2013; Forgeot d'Arc & Soulières, 2019). Research with non-autistic people suggests that distinct subtypes of verbal and non-verbal behaviours function within specific interpersonal situations to invite distinct interpersonal reactions and

behaviours from others. For example, experimental studies demonstrate that: individuals who disclose more personal information during getting-to-know-you conversations are rated as more likeable (Sprecher et al., 2014); individuals who ask more follow-up questions during speed dating situations are more likely to elicit agreement for a second date (Huang et al., 2017); and individuals who smile less during job interviews are rated as more suitable candidates for roles associated with a serious demeanour (Ruben et al., 2015). In the case of camouflaging, a detailed description and understanding of both camouflaging behaviour as well as the immediate interpersonal consequences of such behaviours is required to delineate relationships between camouflaging and various social and functional outcomes. The development of such an understanding is impacted by the complex and nuanced nature of camouflaging and the associated challenges this poses in using established methodological paradigms and psychological measures to investigate it.

One line of research, using an existing diagnostic observational measure, has demonstrated that in clinical settings, some autistic individuals are rated as appearing less autistic and more normatively socially skilled than would be expected given their autistic traits and social cognition differences (i.e., Corbett et al., 2020; Lai et al., 2017, 2019; Livingston, Colvert, et al., 2019; Schuck et al., 2019). However, this approach, based on an observational assessment designed to measure the presence or absence of behaviours for the expressed purpose of an autism diagnostic assessment, is limited in describing the full range of camouflaging behaviours exhibited by autistic people in more naturalistic social environments. Other observational research has documented the camouflaging behaviour of autistic children in school playgrounds, using both a structured observational assessment of social engagement and qualitative observer descriptions (Dean et al., 2017). Whilst this approach goes further in describing camouflaging behaviours in a more naturalistic setting, descriptions of behaviours collected from a distance by non-autistic observers may be both imprecise and constrained by non-autistic conceptualisations of social behaviour.

A further line of research, focused on investigating the phenomenology of camouflaging, has identified and described components of the camouflaging process based on autistic adults'

responses in qualitative questionnaires (Hull et al., 2017; Livingston, Shah, & Happé, 2019). Based on this research, Livingston et al. (2020) created the Compensation Checklist (a list of strategies containing four types of behaviours: masking, shallow compensation, deep compensation and accommodation behaviours), whilst Hull et al. (2019) developed a self-report measure of camouflaging entitled the Camouflaging Autistic Traits Questionnaire (CAT-Q), comprising of three subscales (compensation, masking, and assimilation behaviours). This approach, based on the real-life experiences of autistic people, promotes the development of an ecologically valid description of camouflaging that is not unduly biased by the preconceptions of researchers and clinicians. However, given camouflaging behaviours as well as the social interactions in which these behaviours occur are often numerous and complex, it may be difficult for participants to retrospectively free-recall all their camouflaging behaviours.

Further, camouflaging behaviours that are more immediately accessible in participants' memories may be selectively reported over less accessible behaviours, particularly those that are pre-verbal or not-verbalised (Larsen et al., 2008; Omodei et al., 2005). Overall, given these methodological limitations, I suggest further investigation is required to develop a detailed description and understanding of camouflaging behaviour.

### **The Current Study**

The aim of the current study was to broaden the current understanding of camouflaging by describing behaviours exhibited, altered, or avoided by autistic adults whilst camouflaging (i.e., camouflaging behaviours). Following IPR methodology (Kegan, 1969), participants took part in a short, quasi-everyday social interaction with a stranger and then completed a semi-structured interview whilst viewing the audio-visual recording of their earlier social interaction. During the interview, participants actively identified and described camouflaging attempts.

Whilst new to the field of autism, IPR methodology has been used in psychotherapy, education, and health research to systematically investigate interpersonal interactions and processes (e.g., Bartz, 1999; Burgess et al., 2013; Larsen et al., 2008; Marsh, 1983). IPR is designed to

address limitations associated with qualitative research retrospectively exploring individuals' conscious experiences of interpersonal interactions weeks, months, or years after they have occurred (Larsen et al., 2008). In the case of camouflaging, interviewing participants immediately after a camouflaging experience may allow participants to easily and vividly recall camouflaging behaviours. The use of video during the interview may also cue participants to recall camouflaging behaviour that would not otherwise be recalled unassisted (Omodei & McLennan, 1994; Omodei et al., 2005). Finally, the slow pace of the IPR interview may allow participants more time to recall and verbalise nuanced, complex, or infrequent camouflaging behaviours. Through the novel use of IPR methodology, I aim to identify and describe camouflaging behaviours operating within conscious awareness, not previously reported in existing camouflaging research.

### **Methods**

Full methodological details are provided in Chapter 4; key points are summarised below.

Participants were 17 autistic adults (8 women, 6 men, and 3 agender/gender neutral individuals) recruited via social media and through London-based autism support groups. Inclusion criteria were (1) aged over 18 years; (2) formally diagnosed with autism by an appropriate health care professional and/or multidisciplinary team; (3) IQ in the average/above average range; and (4) indicated at least neutral endorsement of camouflaging behaviours on the CAT-Q (i.e., a total CAT-Q score of 100 or above, representing an average item response between 4- neither agree nor disagree and 7- strongly agree; Hull et al., 2019).

Ethical approval was obtained from the University College London Research Ethics Committee (see Appendix H). Interested individuals were provided with information sheets and given the opportunity to discuss the study with the experimenter (me). Participants then provided their informed written consent and completed a demographic questionnaire, as well as self-report measures of autistic traits (Autism Quotient; Baron-Cohen et al., 2001) and camouflaging (CAT-Q; Hull et al., 2019) online. Eligible participants were then invited to attend the laboratory to complete the testing session.

During the approximately 90-minute testing session, participants completed a brief measure of intellectual ability (Test of Premorbid Functioning-UK Version; Wechsler, 2009) and, where possible (in 16/17 cases), provided written confirmation of their autism diagnosis. Participants additionally completed a controlled social task. This task involved having a ten-minute open-ended conversation with a female non-autistic research assistant who was trained to consistently engage with participants in a friendly yet reserved manner following a protocol modelled on prior research (Inderbitzen-Nolan et al., 2007; Plasencia et al., 2011; Taylor & Alden, 2010). Prior to beginning the social task, participants were informed they would be spending approximately ten-minutes conversing with a stranger and asked to act as they normally would when meeting a stranger that they wished to make a good social impression on. Immediately after the social task, participants completed a semi-structured IPR interview whilst viewing an audio-visual recording of their earlier social task. During the interview, participants were asked to stop the video each time they observed themselves engaging in camouflaging or thinking about engaging in camouflaging. When necessary, the experimenter asked the participant clarifying questions (i.e., to describe what they did or said) to clearly establish observable instances of camouflaging (i.e., descriptions of behaviours exhibited, altered, or avoided by participants). Following the participant's lead, the experimenter then asked the participant follow-up questions about their internal (e.g., their thoughts, emotions, and motivations) and past experiences (e.g., how the participant learnt the behaviour) related to their behaviour. As a result, participants spontaneously identified additional examples of camouflaging strategies they used in other everyday social interactions.

### **Analysis**

Qualitative content analysis of interview transcripts was conducted (Elo & Kyngäs, 2008; Graneheim & Landman, 2007). Qualitative content analysis was chosen because it is considered to be a systematic means of describing and quantifying phenomena for the purposes of building a model or conceptual system/map (Krippendorff, 1980). Qualitative content analysis was considered more appropriate than reflexive thematic analysis, previously used in camouflaging research

exploring the experience of camouflaging (Hull et al. 2017; Livingston, Shah, & Happé, 2020), given the differing focus in the current study on description and quantification (Braun & Clarke, 2020).

Qualitative content analysis was conducted following the approach described by Graneheim and Landman (2007). Analysis focused on identifying manifest (i.e., surface level) meanings in the data following an inductive approach (Elo & Kyngäs, 2008; Kondracki et al., 2002). I read the interview transcripts several times. I considered all descriptions of observable camouflaging behaviours (i.e., camouflaging behaviours participants reported engaging in during the social task and/or during other social interactions) as meaning units. If a behaviour was described multiple times within a single interview transcript, these descriptions were conjoined into a single meaning unit. I conducted an initial coding of the interview transcripts by abstracting meaning units and labelling each with a code, reviewing and refining codes then conducting a second coding of the interview transcripts. LH audited the coding framework against the entire data set. LH and I then collaboratively reviewed and refined the framework until consensus was reached on the final codes and code frequencies. Codes (i.e., camouflaging behaviours) were then grouped into categories and subcategories on the basis of similarities and differences in interpersonal functioning. That is, similarities and differences in the manner in which behaviours may operate within an interaction to promote particular interpersonal outcomes. All authors reviewed and agreed upon the final subcategories and categories.

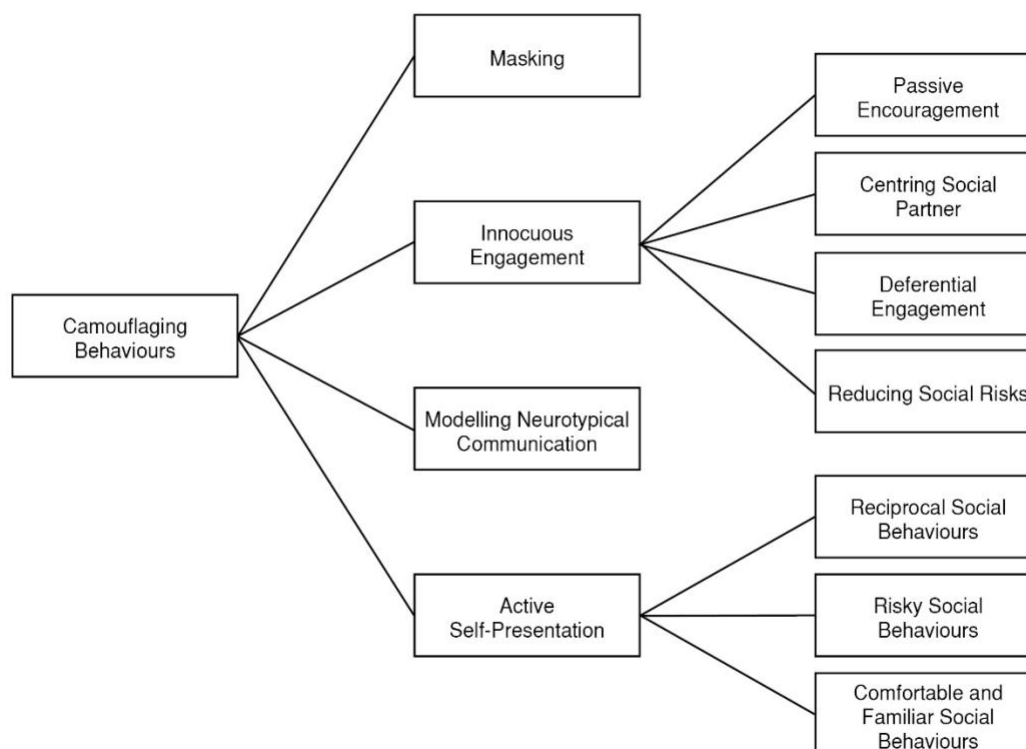
## Results

Descriptions of behaviours exhibited, altered, or avoided by participants whilst camouflaging were categorised into 38 codes. As detailed in Figure 2, these codes were further clustered into four main categories and seven subcategories (note: not all categories have subcategories): (1) masking; (2) innocuous engagement (subcategories: passive encouragement, centring social partner, deferential engagement and reducing social risk); (3) modelling neurotypical communication; and (4) active self-presentation (subcategories: reciprocal social behaviours, risky social behaviours, and comfortable and familiar social behaviours). An overview of camouflaging categories and

subcategories, along with the percentages of participants who reference each code (i.e., camouflaging behaviour) at least once, are described next. A full description of each of the 38 codes is provided in Table 9, whilst examples quotes for each code are provided in Appendix I.

**Figure 2**

*Camouflaging Behaviour Categories and Subcategories*



### **Category 1: Masking**

Participants reported concealing information about their personal characteristics or circumstances and/or suppressing their innate/autistic behaviours. Participants most frequently reported avoiding or limiting personal disclosures ( $n = 11$ ; 64.7%); avoiding or suppressing autistic or otherwise atypical hand/arm movements ( $n = 8$ ; 47.1%); and avoiding sharing factual, detailed, or precise information ( $n = 7$ ; 41.2%). Some participants also described: reducing body movements ( $n = 3$ ; 17.6%); specifically choosing not to disclose their autism diagnosis or speak about autism ( $n = 2$ ; 11.8%); or changing their appearance ( $n = 1$ ; 5.9%).



### **Category 2: Innocuous Engagement**

Participants described using passive, cautious, and/or superficial social behaviours. Many spoke of using relatively passive verbal and non-verbal social behaviours including eye contact ( $n = 11$ ; 64.7%), mirroring ( $n = 8$ ; 47.1%), smiling ( $n = 6$ ; 35.3%), minimal verbal encouragers ( $n = 5$ ; 29.4%), and laughing ( $n = 3$ ; 17.6%). Most participants also centred their social partner during interactions by guiding discussion to, or maintaining discussion on, topics related to their social partner ( $n = 9$ ; 52.9%) or alternatively allowing their social partner to guide the conversation ( $n = 4$ ; 23.5%). Some participants reported engaging with their social partner in a deferential manner by apologising or providing excuses for their perceived social errors or poor social performance ( $n = 4$ ; 23.5%); seeking approval, permission, or validation ( $n = 4$ ; 23.5%); or avoiding confrontation/complaints or being cooperative/respectful/agreeable ( $n = 2$ ; 11.8%). Participants described avoiding social behaviours or conversational topics involving social risk. Some avoided or limited their use of honest or direct statements ( $n = 4$ ; 23.5%). Some tried to avoid the appearance of being knowledgeable or certain about specific topics or information ( $n = 2$ ; 11.8%). One participant also avoided using humour ( $n = 1$ ; 5.9%). Some participants reported keeping conversation at a superficial level by discussing traditional “small talk” topics ( $n = 6$ ; 35.3%) whilst others avoided potentially controversial topics ( $n = 2$ ; 11.8%) and/or more intimate topics related to others’ personal or private lives ( $n = 4$ ; 23.5%).

### **Category 3: Modelling Neurotypical Communication**

Participants spoke of using specific communication behaviours in line with neurotypical norms and preferences. Many participants reported altering their communication to appear more neurotypical including altering their use of gestures ( $n = 12$ ; 70.6%), body language ( $n = 7$ ; 41.2%), facial expressions ( $n = 5$ ; 29.4%), or tone of voice ( $n = 4$ ; 23.5%). Many participants ensured their verbal communication was clear by rephrasing or slowing their speech, purposefully wording comments, or providing clarifying comments ( $n = 7$ ; 41.2%).

**Category 4: Active Self-Presentation**

Active Self-Presentation encompasses reciprocal, open, and well-practiced social behaviours. Participants described using reciprocal social behaviours involving asking questions ( $n = 14$ ; 82.4%); commenting and providing elaborating information ( $n = 11$ ; 64.7%); establishing and discussing points of similarity ( $n = 11$ ; 64.7%); keeping a balance between talking and listening ( $n = 9$ ; 52.9%); and sharing factual information ( $n = 7$ ; 41.2%). Some participants used more risky social behaviours involving using jokes and/or humorous anecdotes ( $n = 5$ ; 29.4%), disclosing personal information ( $n = 4$ ; 23.5%), and discussing weaknesses ( $n = 2$ ; 11.8%). Most participants also chose conversation topics that they were comfortable discussing or knowledgeable about ( $n = 12$ ; 70.6%), as well as pre-planned or practiced phrases, comments, questions, or anecdotes ( $n = 9$ ; 52.9%).

**Table 9***Description, and frequencies of, camouflaging codes*

Behaviour	Description	Frequency N (%)
<b>Masking</b>		
Avoid or limit discussion related to oneself	Avoiding or limiting time speaking about oneself or disclosing personal information (e.g. information about one's relationship, financial status, daily activities, special interests, or hobbies).	11(64.7%)
Alter or reduce hand or arm movements	Reducing the frequency or minimising the visibility of non-gesture hand movements, including fidgeting movements and stimming hand movements.	8(47.1%)
Avoid specific facts and detailed information	Avoiding sharing factual, detailed, or precise information.	7(41.2%)
Reduce body movements	Reducing repetitive movements involving the torso, legs, or entire body including rocking and fidgeting.	3(17.6%)
Avoid autism	Avoiding disclosing one's autism diagnosis or discussing the topic of autism.	2(11.8%)
Appearance	Altering physical appearance to appear more conventional or typical.	1(5.9%)
<b>Innocuous Socialising</b>		
<b>Passive Encouragement</b>		
Eye contact	Maintaining eye contact or maintaining the appearance of eye contact (i.e. looking at a social partner's forehead, nose, or mouth).	11(64.7%)
Mirror	Mirroring another person's verbal (e.g. accent) or non-verbal behaviours (hand movements, body language, smile, or facial expressions).	8(47.1%)
Smile	Smiling at others when speaking or listening.	6(35.3%)
Verbal minimal encouragers	Using verbal minimal encouragers (e.g. "oh really," "yes", "yeah", and "okay").	5(29.4%)
Laugh	Laughing after one's own or others' statements.	3(17.6%)
<b>Centring Social Partner</b>		
Focus on social partner	Guiding discussion to or maintaining discussion on topics of conversation that are related to one's social partner or that may be of interest to one's social partner.	9(52.9%)
Social partner guides conversation	Allowing or relying on one's social partner to guide topics of conversation.	4(23.5%)
<b>Deferential Engagement</b>		

Apologise for/justify social performance	Apologise or provide excuses for perceived social errors or poor social performance.	4(23.5%)
Seek approval/permission	Seeking approval, permission, or validation from one's conversational partner.	4(23.5%)
Be cooperative	Avoiding confrontation or complaints and/or being cooperative, respectful, and agreeable.	2(11.8%)
<b>Reducing Social Risks</b>		
Avoid causing offence or distress	Avoiding words or remarks that could be perceived as rude, offensive, distressing, or patronising.	6(35.3%)
Small talk	Discussing typical 'small talk' topics such as the weather, commuting, or weekend activities.	6(35.3%)
Avoid or limit honest, direct communication	Avoiding or limiting honest or direct statements.	4(23.5%)
Avoid discussion of others' personal and private lives	Avoiding questions or topics of conversation related to more personal or private aspects of others' lives (e.g. relationships, social activities, or general life outside of work).	4(23.5%)
Avoid controversy	Avoiding or limiting discussion on topics of conversation that may generate controversy or debate.	2(11.8%)
Avoid appearing knowledgeable	Avoiding appearing knowledgeable about specific topics or information.	2(11.8%)
Avoid jokes	Avoid making jokes	1(5.9%)
<b>Modelling Neurotypical Communication</b>		
Gestures	Altering communicative gestures so these appear more like neurotypical gestures or increasing use of conventional gestures.	12(70.6%)
Body Language	Altering body language so this appears more like neurotypical body language.	7(41.2%)
Clear verbal communication	Rephrasing or slowing speech, purposefully wording comments, or providing clarifying comments.	7(41.2%)
Facial expressions	Altering facial expressions so these appear more similar to neurotypical facial expressions.	5(29.4%)
Speech Intonation	Changing the tone of one's voice or the emphasis placed on words to sound more conventional or typical.	4(23.5%)

Active Self Presentation		
Reciprocal Social Behaviours		
Ask questions	Asking one's social partner questions.	14(82.4%)
Maintain and build conversation	Commenting, providing elaborating information, or otherwise talking in a way that builds or maintains a conversation.	11(64.7%)
Find and discuss points of commonality	Establishing and discussing points of commonality with one's social partner.	11(64.7%)
Keep balance between listening and talking	Keeping an even balance between talking and listening.	9(52.9%)
Share factual information	Sharing factual information (unrelated to oneself) with others.	7(41.2%)
Risky Social Behaviours		
Jokes and humorous anecdotes	Making jokes or sharing humorous anecdotes.	5(29.4%)
Disclose personal information	Disclosing information about ones' education, employment, daily activities, or relationships status.	4(23.5%)
Disclose weaknesses	Discussing one's perceived weaknesses, vulnerabilities, or feelings of inadequacy.	2(11.8%)
Comfortable and Familiar Social Behaviours		
Comfortable topics	Discussing topics of conversations that one is knowledge about or interested in, finds easy or is comfortable discussing, or have been received well by others in the past.	12(70.6%)
Scripts	Use an established repertoire of phrases, comments, questions, or anecdotes that are pre-planned or practiced, or have previously been well received by others.	9(52.9%)

## Discussion

Some autistic people modify their innate autistic social behaviour in order to adapt to, cope within and/or influence the predominately neurotypical social environment. In modifying their behaviour, autistic people may engage multiple cognitive functions involving monitoring the social environment, monitoring of personal behaviours (Chapter 4), and social reasoning (or proxy social reasoning via non-social cognitive routes; Livingston & Happé, 2017). However, the extent to which an autistic individual consciously engages in a process of behaviour change or is even aware of behaviour change may vary widely (Lawson, 2020).

In the current study, we term such changed or modified social behaviour “camouflaging behaviour.” With the assistance of video-cued recall, participants identified and described instances of themselves using camouflaging behaviours during a specific quasi-everyday social situation. Participants then spontaneously described additional examples of camouflaging behaviours they used in other everyday social interactions. Through this novel use of IPR methodology I address limitations of previous qualitative research retrospectively exploring autistic people’s experiences of camouflaging, days, weeks, months, or even years after such experiences have occurred (e.g., Bargiela et al., 2016; Hull et al., 2017; Livingston, Shah, & Happé, 2019). Consequently, many of the precise and detailed descriptions of camouflaging behaviours reported in the current study have not previously been documented in camouflaging research.

Camouflaging behaviours identified by participants were grouped into four categories based on the manner in which they operated within interactions: masking (i.e., hiding particular behaviours and/or aspects of one’s identity); innocuous engagement (i.e., facilitating passive, cautious and superficial engagement in social interactions); neurotypical communication (i.e., communicating in line with non-autistic norms and preferences); and active self-presentation (i.e., facilitating active, open, and reciprocal participation in social interactions). I acknowledge that the categories may not necessarily be distinct, and that the use of particular strategies might relate to multiple categories at

once (e.g., masking and innocuous engagement) for some individuals. Next, I examine each of these four categories of behaviours with reference to both existing camouflaging research as well as broader literature on interpersonal behaviour.

### **Masking**

Masking involves concealing information about personal characteristics or circumstances and/or suppressing one's innate/autistic behaviours. Aspects of masking behaviours identified by participants are similar to masking strategies reported in prior camouflaging research. Specifically, camouflaging behaviours involving altering or reducing hand, arm, and body movements (i.e., stimming, fidgeting, rocking) reported by my participants may be related to masking strategies involving suppressing "atypical behaviours" on the Compensation Checklist (Livingston et al., 2020) and relaxing the face and body on the CAT-Q (Hull et al., 2019). Similarly, the camouflaging behaviour involving altering one's physical appearance identified by one participant is similar to the masking strategy involving "superficial assimilation" on the Compensation Checklist (Livingston et al., 2020). However, other masking behaviours involving avoiding or limiting talking about oneself or disclosing personal information generally; discussing autism or one's autism diagnosis; and sharing factual, detailed, or precise information were newly described in the current study.

People with stigmatised identities may reduce or prevent prejudice and discrimination by hiding or minimising the visibility of their stigmatised characteristic (Goffman, 1963; Jones et al., 1984). Given that autistic people commonly experience devaluation, rejection and misunderstanding (e.g., Kinnear et al., 2016; Milton et al., 2018; Sasson et al., 2017) as well as the central role autism often plays in the identity of autistic people, it has been argued that autistic people represent an identity-based minority group subjected to social stigma and disadvantaged social status (Botha & Frost, 2020; Botha et al., 2020). As such, masking behaviours could be understood within a stigma framework, as an attempt to prevent prejudice and discrimination by concealing or strategically attenuating autistic identity (Botha et al., 2020; Cage & Troxell-Whitman, 2020; Pearson & Rose, 2021; Perry et al., 2021).

Hiding personal information about oneself during a social interaction may, equally, have negative interpersonal and intrapersonal consequences. Experimental research demonstrates that hiding (versus revealing) information about a stigmatised characteristic during an interaction is associated with reduced non-stigma-related self-disclosure and, in turn, external observers rate individuals and their interactions less positively (Newheiser & Barreto, 2014). Moreover, for the stigmatised individual, actively concealing stigma related information is associated with decreased cognitive resources (Critcher & Ferguson, 2014; Smart & Wegner, 1999), decreased feelings of belonging and authenticity (Newheiser & Barreto, 2014), and increased emotional strain (Barreto et al., 2006).

Research in the field of social anxiety similarly demonstrates the negative intrapersonal and interpersonal consequences associated with hiding aspects of the self during social interactions. Socially anxious individuals attempt to prevent feared negative evaluations or social outcomes by engaging in “safety behaviours” (Rapee & Heimberg, 1997). Some of these safety behaviours involve hiding aspects of the self through, for example: avoiding talking about oneself, asking questions, or talking altogether; censoring one’s speech; trying not to attract attention; or keeping still (Gray et al., 2019; Hirsch et al., 2004; Plasencia et al., 2011). Experimental research suggests conversational partners and independent observers rate individuals engaging in hiding behaviours as more anxious, less likeable, less enjoyable to interact with, and less desirable as a future social partner compared to controls (Gray et al., 2019; Plasencia et al., 2011). In terms of intrapersonal costs, the use of safety behaviours including hiding/avoidance behaviours is also associated with increased anxiety and belief in social fears, as well as poorer self-reported perception of social performance (McManus et al., 2008).

### **Innocuous Engagement**

Innocuous engagement behaviours (encompassing passive encouragement, centring social partner, deferential engagement, and reducing social risks) are more cautious, passive, and superficial social behaviours. These behaviours facilitate surface level engagement in social



interactions and centre autistic people's social partners by prioritising their enjoyment, comfort, and preferences. At the same time, these behaviours minimise the likelihood of controversy, disagreement, and negative evaluation. Aspects of passive encouragement and centring social partner behaviours described by participants are reflected in masking and shallow compensation strategies in the Compensation Checklist (Livingston et al., 2020) as well as masking and compensation strategies in the CAT-Q (Hull et al., 2019). However, the specific passive encouragement behaviours involving using laughter and minimal encouragers are newly identified by participants in the current study. Similarly, most camouflaging behaviours involving deferential engagement (i.e., justifying, apologising, and seeking permission) and minimising social risks (i.e., avoiding controversy, direct communication, discussing others' personal lives, humour etc.), reported by participants in the current study, have not previously been reported within camouflaging research.

Innocuous engagement behaviours are conceptually similar to another category of safety behaviours used by socially anxious individuals involving "innocuous sociability" (Leary, 1995; Schlenker & Leary, 1982). Innocuous sociability involves a self-protective interpersonal style characterised by safe and innocuous social behaviours (e.g., engaging in more smiling, nodding, and minimal verbal acknowledgements; asking more questions; avoiding interrupting others; and making less factual statements; Leary & Jongman-Sereno, 2014; Leary & Kowalski, 1995a; Leary, Knight, & Johnson, 1987; Patterson & Ritts 1997). These behaviours serve to keep an individual engaged in an interaction whilst simultaneously shifting focus away from them and minimising risks to their image. It is suggested that in the case of social anxiety, this interpersonal style may protect an individual from blatant negative evaluation but at the same time is unlikely to result in a particularly positive social impression (Leary & Jongman-Sereno, 2014).

Innocuous engagement involving excessive accommodation of others' enjoyment, comfort, and preferences may, however, be associated with harmful interpersonal consequences. In the non-autistic population, unassertive and submissive interpersonal behaviours are consistently linked to

negative outcomes across the lifespan, including increased social isolation (Rubin & Burgess, 2001), workplace bullying (e.g., Zapf & Einarsen, 2003), and sexual assault (Ullman, 2007). Little research exists examining links between interpersonal style and outcomes for autistic people. However, in a small qualitative study involving late diagnosed autistic women, participants linked their perceived passivity, social mimicry, and prioritisation of fitting in over their own needs to experiences of abuse and victimisation (Bargiela et al., 2016). This potential link is of significant concern given recent discussion regarding the role of autism interventions in fostering overly compliant behaviour in autistic people (Sandoval-Norton et al., 2019).

### **Modelling Neurotypical Communication**

Modelling neurotypical communication behaviours identified by participants involved altering verbal and non-verbal communication so as to conform with neurotypical conventions and preferences. Similar examples of autistic people copying or mimicking the verbal and non-verbal communication behaviours of non-autistic others are found throughout camouflaging literature (e.g., Cridland et al., 2014; Hull et al., 2019; Livingston, Shah, & Happé, 2019).

In a similar manner to masking behaviours, modelling neurotypical communication behaviours could be understood within a stigma framework as an attempt to reduce prejudice or discrimination by signalling proximity to neurotypicality (Pearson & Rose, 2021; Perry et al., 2021). In addition, using the normative expressions of the culture, subculture, or family one is interacting with likely improves clarity and ease in communication (Halberstadt, 2001). Given the difficulties non-autistic people experience identifying and understanding autistic social communication, autistic people using more non-autistic communication behaviours may be more readily understood during everyday social encounters (Jaswal & Akhtar, 2019; Sheppard et al., 2016). Likewise, as non-autistic people often perceive non-autistic social communication behaviour as communicating social motivation, they may engage more with autistic people exhibiting such behaviour (Jaswal & Akhtar, 2019).

### **Active Self-Presentation**

The active self-presentation behaviours (including reciprocal, risky, and comfortable and familiar social behaviours) described by participants appear to directly influence interpersonal elements of social interactions. Reciprocal behaviours initiate, build, and maintain interpersonal exchanges within interactions. Reciprocity is further facilitated by the use of accessible, comfortable, pre-planned or practiced phrases, questions, anecdotes, or conversational topics as well as humour and exchange of personal information.

The comfortable and familiar social behaviours reported by participants appear to be related to shallow compensation strategies in the Compensation Checklist (Livingston et al., 2020) and compensation strategies in the CAT-Q (Hull et al., 2019). However, behaviours reported by participants involving reciprocal, authentic, and open engagement (e.g., maintaining and building conversation; finding and discussing points of commonality; disclosing personal information; using humour etc.) are similar to behaviours typically described within research with non-autistic people as socially skilful behaviours.

Considerable research suggests perceived similarity with a social partner in terms of, for example, attitudes, personality traits, and hobbies, is strongly associated with increased feelings of liking and/or attraction for that social partner (e.g., Hampton et al., 2019; Montoya et al., 2008). For non-autistic people, self-disclosure appears to facilitate perceived similarity (Collins & Miller, 1994; Laurenceau et al., 1998; Sprecher, 2014). In the case of camouflaging, autistic people's attempts to adapt their interpersonal style by concealing autistic behaviours, engaging in non-autistic social niceties, and exhibiting non-autistic social communication (i.e., masking, innocuous engagement, and neurotypical communication behaviours) may signal a level of similarity to non-autistic social partners. However, active self-presentation behaviours involving disclosing personal information, as well as actively searching for and exploring commonalities, are likely more effective in establishing similarities with non-autistic social partners on the key dimensions of attitudes, personality traits, and hobbies and in turn more successful in building mutual admiration and understanding.

For non-autistic people, responsiveness to others' disclosures during an interaction is also associated with positive perceptions and social relatedness (Butler et al., 2003; Forest & Wood, 2011). As such, active self-presentation camouflaging behaviours focused on maintaining reciprocity during an interaction may also foster positive reactions and behaviours from non-autistic social partners. At the same time, compared to other camouflaging behaviours, active self-presentation behaviours involving disclosing personal information, responding to others, sharing opinions, and using humour involve an element of social risk. Thus, if unsuccessfully deployed, they may increase the likelihood of negative evaluation.

In line with previous literature (Fommbone, 2020; Lai et al., 2020; Schneid & Raz 2020), the above discussion highlights that some of the camouflaging behaviours described by autistic people may be similar to social behaviours observed in non-autistic people. Self-presentation explanations of interpersonal behaviour may provide a framework through which we can understand commonalities and differences in the social behaviours of autistic and non-autistic people. Self-presentation approaches posit that people are generally motivated to make desirable social impressions and avoid undesirable social impressions because they are rewarded, via the positive reactions and treatment of others, for doing so (Leary, 1995; Schlenker, 1980; Schlenker & Leary, 1982). In promoting a desirable social impression, people (1) exhibit behaviours they believe will lead others to perceive them in a desirable manner; (2) monitor others' reactions to these behaviours; and (3) strategically adjust their behaviour when they believe others are perceiving them in an undesirable manner (Leary, 1995). People experience anxiety when they are motivated to make a desirable social impression, but they doubt their ability to do so (Leary & Kowalski, 1995a,b; Schlenker & Leary, 1982). Further, people who believe others consistently form undesirable impressions of them develop and utilise additional repertoires of interpersonal behaviours to minimise the impact of anticipated threats to achieving desirable social impressions. People with stigmatised identities who believe others form undesirable impressions of them because they possess a particular stigmatised characteristic may develop similar repertoires of self-presentational

behaviours to minimise the impact of their stigmatised characteristic on others' perceptions of them (Miller & Kaiser, 2006). Socially anxious people who perceive that others form undesirable impressions of them may similarly utilise specific self-presentational behaviours to protect or enhance their social impression (Leary & Jongman-Sereno, 2014). There are both individual differences and group level similarities in these repertoires of interpersonal behaviours. Through this framework, camouflaging could be conceptualised as a repertoire of self-presentational behaviours used by autistic people to achieve a desirable social image and promote positive reactions from others.

Self-presentation approaches further suggest that whilst the specific type of desirable social impression an individual is motivated to convey can vary, such motivations are heavily influenced by social context. People generally wish to make common types of desirable impressions (e.g., as friendly, competent, ethical, attractive etc.) and avoid other common types of undesirable impressions (e.g., as unfriendly, incompetent, unethical, unattractive etc.; Leary, 1995). In this regard, autistic and non-autistic people existing within a predominately neurotypical social context are likely motivated to make similar neurotypical desirable impressions and avoid similar neurotypical undesirable impressions because they are similarly rewarded by the reactions and treatment of others for doing so. Thus, a degree of overlap is to be expected in the type of self-presentation behaviours utilised by autistic and non-autistic people in achieving desirable impressions as well as those used by autistic, other stigmatised, and socially anxious individuals in avoiding anticipated undesirable impressions.

At the same time, some camouflaging behaviours are unique to autism because they minimise autism specific threats to creating a desirable impression (e.g., hand flapping may represent an autism specific threat to being perceived as competent). Similarly, the cognitive processes used by autistic and non-autistic people to produce similar self-presentation behaviours may vary, for example, non-autistic people may utilise social reasoning whilst autistic people may utilise proxy social reasoning via non-social cognitive routes (Livingston & Happé, 2017). Equally,

some camouflaging behaviours are unique to individuals because they minimise more individualistic threats to creating a desirable impression (i.e., they are developed in response to idiosyncratic social experiences, reasoning, or beliefs) or they represent individualistic solutions to minimising common group level threats.

Further, according to the self-presentation framework, people commonly experience anxiety when they are motivated to make a desirable social impression, but they doubt they will successfully be able to do so (Leary & Jongman-Sereno, 2014). Thus, autistic and other stigmatised people (as well as those with social anxiety disorder) may similarly experience heightened social anxiety if they believe they are unable to make desirable impressions. Autistic and other stigmatised people who believe they can successfully reduce threats to achieving a desirable social impression by using a repertoire of self-presentational behaviours will experience less anxiety compared to those who use similar behaviours yet remain uncertain or doubtful.

Within research involving non-autistic people, distinct subtypes of interpersonal behaviours are associated with different interpersonal and intra-personal consequences. The effect of camouflaging behaviours on interpersonal outcomes, whether beneficial or harmful, is dependent on the way these behaviours are implemented. In this regard, there are likely qualitative differences in the manner in which autistic and non-autistic people exhibit similar social behaviours. Equally, how autistic people employ specific camouflaging behaviours during social interactions is likely to vary widely in accordance with differences in gender, age, social experiences, and various cognitive abilities. Further, the intrapersonal consequences of various social behaviours may be dissimilar for autistic and non-autistic people, due to differences in the origins and functions of such behaviours as well as the cognitive functions that produce them. Relatedly, the findings reported here and elsewhere in camouflaging research suggest autistic individuals use a diverse range of camouflaging behaviours to cope and succeed in social interactions (Hull et al., 2017; Livingston, Shah, & Happé, 2019). It remains unclear to what extent specific camouflaging and/or social behaviours differentially facilitate, social, functional, or mental health outcomes within the autistic population.

As reiterated in recent editorials on the subject, conceptualisations, definitions, and measures of camouflaging are in their infancy (Fombonne, 2020; Lai et al., 2020). The current study contributes to our understanding of camouflaging by generating specific and detailed descriptions of self-reported camouflaging behaviours and discussing potential similarities between these and various other social behaviours. Further research directly comparing social behaviours reported by autistic and non-autistic people is now needed to better delineate neurotype general versus neurotype specific components of camouflaging. Experimental research is also needed to better understand the in-situ influence of camouflaging behaviours in relation to both non-autistic people's evaluation and treatment of autistic people as well as autistic people's cognitive resources and psychological distress.

Future research examining autistic people's experiences of socialising during cross-neurotype interactions will likely benefit from examining a wider range of social behaviours than is currently documented in camouflaging research. Indeed, whilst most often defined in research as the use of strategies to hide and or compensate for autistic characteristics (e.g., Hull et al., 2017, 2019, 2020; Lai et al., 2011), when asked to identify their camouflaging behaviours some participants in the current study reported using autistic strengths (i.e., sharing factual information) as well as unfiltered, open and "skilful" social behaviours (i.e., disclosing personal information, discussing points of commonality, and using humour). Similarly, autistic scholars have criticised interpretations and explanations of camouflaging behaviours presented throughout previous camouflaging research (Lawson 2020; Schneid & Raz 2020). As such, the adoption of more general language and terminology (i.e., social behaviours or coping strategies rather than camouflaging behaviours) may aid in illuminating additional perspectives.

It is important to acknowledge that, given the methodology utilised, the results may not generalise to all social environments or autistic individuals. Individuals' social behaviours are influenced by their immediate social context and in this regard the camouflaging behaviours reported by participants were likely impacted by non-naturalistic features of the lab-based

environment, such as participants' awareness that they were taking part in a study about camouflaging. Equally, IPR interviews explore conscious experience and thus cannot identify camouflaging behaviours operating outside of conscious awareness. IPR is only suitable for use with verbally fluent individuals who have a relatively high level of insight into their camouflaging behaviours. Given all our participants were verbally fluent and had intellectual abilities in the average to high average range, the camouflaging behaviours reported in the current study may not be representative of all camouflaging behaviours utilised by the full spectrum of autistic people. Further, although the use of self-report methodology went some way in reducing the influence of non-autistic conceptualisations and biases in describing camouflaging, our methodology is limited by a lack of autistic input with regard to design and analysis.

The current study identifies and describes camouflaging behaviours used by a sample of autistic adults in everyday social interactions. Participants' descriptions of camouflaging behaviours suggest some camouflaging behaviours may be common to both autistic and non-autistic socialising whilst others are unique to autistic socialising. Camouflaging-type behaviours may be similarly used by autistic and non-autistic people to make desired social impressions and elicit positive reactions and treatment from others. For non-autistic people distinct subtypes of interpersonal behaviours are associated with different interpersonal and intrapersonal consequences. Future research is needed to examine if various camouflaging behaviours differentially facilitate outcomes for autistic people.



## **Chapter 6: Understanding the Relationship Between Camouflaging Intent and Indicators of Social, Employment, and Mental Health Outcomes**

### **Abstract**

To date, quantitative research has tended to examine associations between camouflaging and mental health difficulties, however, in seeking to improve the lives of autistic people, it is important to develop a holistic understanding of how camouflaging affects multiple life domains. Via an online survey, completed by 133 autistic adults with formal diagnoses, the current chapter examined (1) relationships between camouflaging intent and indicators of friendship, relationship, and employment outcomes, (2) relationships between camouflaging intent and indicators of mental health difficulties (i.e., symptoms of depression, anxiety, and stress) and psychological distress (i.e., feelings of loneliness) and (3) sex/gender differences in these relationships. Overall results suggested that, with the one exception of relationship status, camouflaging intent was not associated with indicators of friendship, relationship, and employment outcomes. In contrast, higher levels of camouflaging intent predicted increased feelings of loneliness as well as increased depressive, anxious, and stress symptoms. No moderating effects of sex/gender were found. These findings extend the current understanding of camouflaging by demonstrating the complicated relationship that exists between camouflaging and social, employment, and mental health outcomes.

## Introduction

Autistic adults face challenges in multiple domains including social participation and relationships (Billstedt et al., 2011; Orsmond et al., 2013), employment (Howlin et al., 2004), and mental health (Lever & Geurts, 2016), which impact upon their quality of life (Adam et al., 2019). Increasingly, such challenges are conceptualised as resulting from poor person-environment fit, that is, a poor fit between the characteristics of a neuro-divergent person and an unaccommodating, predominately neurotypical, sociocultural environment (e.g., Lai et al., 2020; Mitchell et al., 2021). Camouflaging is one means through which autistic people attempt to overcome challenges in person-environment fit and thereby reach employment, social and other personal goals (Hull et al., 2017; Livingston, Shah, & Happé, 2019). However, as examined in Chapter 6, little is known about how camouflaging affects social interactions and, in turn, impacts social and functional outcomes for autistic people. Moreover, camouflaging intent (i.e., self-reported engagement in camouflaging) is associated with negative intrapersonal consequences including missed or misdiagnosis, identity confusion, and mental health difficulties (Hull et al., 2017; Livingston, Shah, & Happé, 2019; Miller et al., 2021; see also Chapter 4). In seeking to improve the overall wellbeing of autistic people, it is important to develop a more holistic understanding of how camouflaging affects multiple aspects of autistic people's lives. The current chapter presents an examination of (1) relationships between camouflaging intent and indicators of friendship, relationship, and employment outcomes, (2) relationships between camouflaging intent and indicators of mental health difficulties (i.e., symptoms of depression, anxiety, and stress) and psychological distress and (3) sex/gender differences in these relationships.

### **Friendship, Romantic Relationships, Social Isolation, and Employment Outcomes**

Despite typically being motivated to participate in social relationships (e.g., Hellemans et al., 2007), many autistic adults face challenges in establishing and maintaining reciprocal, close, and satisfying platonic and romantic relationships. Historically, research suggested a small minority of autistic adults have friendships or romantic relationships and/or regularly engage in social activities

(e.g., Billstedt et al., 2011; Howlin et al., 2004). More recent, albeit less comprehensive, research suggests higher rates of engagement in specific social relationships (e.g., romantic relationships) particularly for those diagnosed in adulthood and without co-occurring intellectual disability (e.g., Dewinter et al., 2017; Pecora, 2016). Yet, difficulties building and maintaining social relationships continue to be widely reported by autistic adults including those diagnosed in adulthood and without co-occurring intellectual disability (e.g., Milner et al., 2019; Bargiela et al., 2016). Such difficulties are concerning because participation in social activities and relationships are considered important aspects of quality of life for individuals regardless of their neurotype (Orsmond et al., 2013; Verdugo et al., 2012).

Autistic adults also face significant challenges in relation to employment. Worldwide, estimated rates of employment for autistic adults as a whole are generally low, ranging from 14% in the United States and Canada (Roux et al., 2017; Zwicker et al., 2017) to 29% in the United Kingdom (Office for National Statistics, 2022). Rates of employment for some members of the autistic community, for example, those diagnosed later in life and those without co-occurring intellectual disabilities are sometimes higher (e.g., Farley, 2009; Gotham et al., 2015), yet remain well below those of the general population (75.6% in the United Kingdom; Office for National Statistics, 2022). Moreover, challenges in maintaining employment engagement are prevalent amongst these later groups of autistic people (Taylor et al., 2015). Employment is a significant issue given that low employment rates for autistic adults can negatively impact upon socio-economic status, quality of life, and mental health (Hedley, Uljarevic, Spoor et al., 2018; Howlin, 2013; Flower et al., 2019; Roux et al., 2013).

Autistic people are a minority group, and therefore many of their day-to-day social experiences and, potentially, their social and employment relationships are characterised by cross-neurotype interactions. The double empathy problem (DEP) suggests that autistic and non-autistic people commonly experience communication, reciprocity, and rapport problems during such cross-neurotype interactions because they perceive, experience, and relate to the world differently

(Milton, 2012; Milton et al., 2018). However, the onus is often placed on autistic people to improve these communication, reciprocity, and rapport problems via personal adaptation. As such, camouflaging, i.e., the modification of innate social behaviour resulting in the presentation of a seemingly non-autistic social style and/or reduction in the visibility of social difficulties or differences (Hull et al., 2017; Lai et al., 2011; Livingston, Shah, & Happé, 2019), may be one factor that similarly impacts upon social and employment outcomes for autistic adults. Indeed, autistic adults report using camouflaging strategies within relational and employment contexts (Hull et al., 2017; Tierney et al., 2016; Romualdez et al., 2021). Moreover, there is some evidence to suggest men and women may differentially use camouflaging strategies in employment/educational versus relational contexts (Cage & Troxell-Whitman, 2019). However, to date, no studies have directly examined associations between camouflaging and social and employment outcomes, nor the potential moderating effect of sex/gender<sup>6</sup>.

### **Mental Health Difficulties and Psychological Distress**

As documented in Chapter 4, higher camouflaging is associated with mental health difficulties, including increased social anxiety, general anxiety, and depressive symptoms (Hull et al., 2019; Hull, Levy, et al., 2021); greater psychological distress (Beck et al., 2020); and decreased wellbeing (Hull et al., 2019; although see Perry et al., 2021). However, due to the cross-sectional nature of the research to date, the direction of the relationship between camouflaging and mental health difficulties cannot be inferred.

An additional indicator of psychological distress related to mental health that has not previously been addressed in camouflaging research is loneliness. Loneliness is a negative emotional state arising from a quantitative or qualitative discrepancy, between one's desired and perceived

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<sup>6</sup> The World Health Organisation differentiates sex characteristics as biologically determined and gender characteristics as socially constructed (WHO, 2021). The effects of sex and gender are potentially distinct but also interactive. It is difficult to separate such effects because gendered socialisation begins at birth. Thus, in line with prior camouflaging research, I use the term sex/gender in this chapter to describe the overlap between the two constructs (e.g., Hull et al., 2017; Lai et al., 2015; Wood-Downie et al., 2021; Schuck et al., 2017).

social connectedness (Hawkley & Cacioppo, 2010). Amongst the general population, loneliness is associated with adverse psychological and physical consequences including depression and early mortality (Holt-Lunstad et al., 2010, 2015; Wang et al, 2018). Emerging research suggests that among autistic adults, loneliness is associated with anxiety (Ee, 2019; Mazurek, 2014; Schiltz et al., 2021), depression (Mazurek, 2014; Schiltz et al., 2021) and suicidal behaviours (Jackson et al., 2018). Yet, the mechanisms underpinning loneliness among autistic adults are yet to be established (Umagami et al., 2022). Loneliness may relate to camouflaging given that some of the key reasons cited by autistic people for camouflaging (i.e., to develop friendship and relationships) appear to be motivated by a desire for increased social connection (Elmose et al., 2020; Hull et al., 2017). Moreover, camouflaging has been associated with a related concept, thwarted belonging (Cassidy et al., 2020).

Emerging research investigating the effects of sex/gender on the relationship between camouflaging and mental health has yielded partial and inconsistent results. Specifically, in investigations of what the authors termed sex/gender effects, higher camouflaging efficacy (measured via the discrepancy measurement approach) was associated with increased depressive symptoms for men but not women, whilst camouflaging efficacy was not associated with anxiety for either men or women (Lai et al., 2017; Schuck et al., 2019). Additionally, no evidence was found to suggest the relationship between camouflaging intent (measured via the self-report measurement approach using the CAT-Q) and anxiety and depressive symptoms was moderated by sex/gender (both when gender was measured as self-identified gender i.e., men vs women and sex gender identity congruence i.e., cisgender men vs cisgender women; Hull, Levy, et al., 2021). However, owing to a small sample size the authors did not include non-binary people in the analysis and thus conclusions about differences between binary and non-binary genders was not possible. Thus, further research investing the moderating effects of sex/gender on the relationship between camouflaging and mental health, including those outside of the sex/gender binary, is required.

## **Current Chapter**

The original aim of the current chapter was a longitudinal examination of the relationship between camouflaging intent and (a) social and employment outcomes and (b) psychological distress and symptoms of mental health difficulties in autistic adults via online surveys. Additionally, given the role of sex/gender in camouflaging, a secondary aim of the current chapter was to examine if sex/gender moderated relationships between camouflaging and social and employment outcomes or psychological distress/symptoms of mental health difficulties. The original plan was for autistic adults to complete an online survey at three time points (baseline, twelve months post baseline, and 24 months post baseline) with data from the first two time points being analysed in the current PhD. Unfortunately, the Covid-19 pandemic began during my first round of data collection. Given the significant and wide-reaching impact of the pandemic on autistic people's lives and in particular their mental health, employment, ability to engage in friendships, relationships, and other social activities (Oomen et al., 2021; Pellicano, Brett, et al., 2021), it was decided that conclusions from a longitudinal study over this time period would not be valid or generalisable. As a result, this chapter instead involves a cross-sectional investigation of camouflaging and social and employment and mental health/psychological distress outcomes using data collected at time point one.

## **Research Questions and Hypotheses**

### ***Camouflaging and Social and Employment Outcomes***

The first aim of the current chapter was to extend current camouflaging research by investigating if individual differences in camouflaging intent predicted social and employment outcomes for autistic adults. Specifically, I examined if, among formally diagnosed autistic adults, camouflaging intent predicted:

1. Friendship number
2. Close friendship status
3. Close friendship length

4. Social isolation
5. Relationship status
6. Relationship length
7. Employment status
8. Employment length

Given the lack of prior research, no hypotheses were made regarding the relationship between camouflaging intent and social and employment outcomes.

### ***Camouflaging, Mental Health Outcomes, and Psychological Distress***

The second aim of the current chapter was to replicate and extend current camouflaging research by investigating relationships between camouflaging intent, symptoms of mental health difficulties and feelings of loneliness. Specifically, I examined if, among formally diagnosed autistic adults, higher camouflaging intent was associated with higher levels of depression, anxiety, and stress symptoms. On the basis of prior research, I hypothesised that higher camouflaging intent would be associated with higher levels of depression, anxiety, and stress symptoms. In addition, I examined if, among formally diagnosed autistic adults, individual differences in camouflaging intent predicted feelings of loneliness. Given a lack of prior research, no hypothesis was made regarding the relationship between camouflaging intent and feelings of loneliness.

### ***Moderating Effect of Sex/Gender***

The third aim of the current chapter was to extend current camouflaging research by examining the moderating effect of sex/gender on the association between camouflaging intent and social and employment and mental health/psychological distress outcomes. Specifically, I examined whether, among formally diagnosed autistic adults, (1) the relationship between camouflaging intent and social and employment outcomes was moderated by sex/gender and (2) the relationship between camouflaging intent and symptoms of mental health difficulties (i.e., symptoms of

depression, anxiety, and stress) was moderated by sex/gender. Given a lack of prior research, no hypotheses were made regarding the moderating effect of sex/gender on social and employment outcomes. Regarding mental health outcomes, I hypothesized that for formally diagnosed autistic cisgender men and cisgender women, gender would not moderate the relationship between camouflaging and symptoms of mental health difficulties. Hypotheses regarding other sex/genders or social and employment outcomes were not made owing to a lack of prior research.

## **Methods**

### **Measures**

#### ***Demographics***

Participants completed a demographic questionnaire recording their age, biological sex at birth, gender identity, nationality, primary language, living arrangements, highest level of education attained, current employment, current study, diagnostic label (e.g., autism, Asperger syndrome, atypical autism etc.) received, type of health professional who confirmed this diagnosis, age at diagnosis, and any other diagnosed conditions.

#### ***Autistic Traits***

The *Autism Spectrum Quotient-10 items* (AQ-10; Allison et al., 2012) was used to give an estimation of autistic traits<sup>7</sup> within the sample. The AQ-10 (Allison et al., 2012) is a brief self-report measure of autistic characteristics. Four response options are provided: strongly agree, slightly agree, slightly disagree, and strongly disagree. On half the items slightly or strongly agree are coded 1 and slightly and strongly disagree are coded 0, whereas on the other half of items the reverse scoring applies. Scores on the AQ thus range from 0 to 10 with higher scores indicating the presence of more autistic characteristics. Scores of 6 or above are considered to be above the clinical cut-off. Internal consistency for the AQ in my sample was  $\alpha = 0.56$ . Whilst this value is smaller than that reported in the original validation study ( $\alpha = 0.85$ ; Allison et al., 2012) it is consistent with more

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<sup>7</sup> The AQ-10 was not used to determine eligibility for the study as it is a brief screening measure with less than perfect sensitivity and specificity.



recent investigations of the AQ-10's psychometric properties (e.g., Taylor et al., 2020). Further, it should be noted that values of Cronbach's alpha are affected by scale length such that shorter scales will have lower values (e.g., Streiner, 2003).

### ***Camouflaging***

Camouflaging intent was measured using the *Camouflaging Autistic Traits Questionnaire* (CAT-Q; Hull et al., 2019). The CAT-Q is a 25-item self-report questionnaire measuring the use of camouflaging strategies and behaviors. Items are rated on a scale (from 1 = strongly disagree, to 7 = strongly agree). Total scores range from 25 to 175 with higher scores indicating greater levels of camouflaging. Given the intended longitudinal nature of the study, participants were asked to consider their experiences over the previous four weeks when answering each of the CAT-Q items (original instructions ask participants to consider their experiences without providing a timeframe). Internal consistency for the CAT-Q in our sample was  $\alpha = 0.91$ . The CAT-Q also produces three subscale scores (i.e., assimilation, compensation, and masking). In the current chapter the CAT-Q total score was used instead of the three subscales scores in the interest of simplicity given (1) the large number of dependent variables and (2) the three subscales correlate highly with the CAT-Q total score ( $r$  range = .71 — .87) and thus using each subscale as a predictor would provide little additional information over and above that generated by using the CAT-Q total score as a predictor. A copy of the CAT-Q is provided in Appendix F.

### ***Symptoms of Mental Health Difficulties***

The *Depression, Anxiety, and Stress Scale- 21 Items* (DASS-21; Lovibond & Lovibond, 1995) was used to assess symptoms of depression, anxiety, and stress experienced by participants during the previous week. The DASS-21 is comprised of three subscales measuring depression (7 items), anxiety (7 items), and stress (7 items) symptoms. Items are rated on a 4 point-scale from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). Subscale scores are calculated by summing the scores for relevant items. As the DASS-21 is a shortened version of the original DASS (42 items), subscales are then multiplied by 2 so as to be comparable to the original DASS score

(Antony et al., 1998; Lovibond & Lovibond, 1995). Total subscale scores thus range from 0 to 42 with higher scores indicating higher levels of depression, anxiety, and stress symptoms respectively. The DASS-21 has been validated for use in autistic populations (Park et al., 2020). Internal consistency for the DASS in my sample was  $\alpha = 0.93$ .

### ***Friendship Status and Length***

Friendship and relationship (see below) questions were modelled on prior research involving autistic adults (Jobe & Williams White, 2007; Mazurek, 2014). Participants were asked: “How many friends do you have right now?” and “Do you have a close or best friend (who is not a member of your family?” (response options = yes/no). Participants who reported having a close or best friend were asked: “How long have you been friends with your current best friend or close friend?” (response provided in years and months) and “Does your best friend or close friend have an autism diagnosis or self-identify as being on the autism spectrum?” (response options = yes/no/unknown). Finally, participants were asked to rate that extent to which they agreed with the following statement, “I desire to have friends,” on a rating scale (from 1 = strongly disagree to 5 = strongly agree).

### ***Relationship Status and Length***

Similarly, relationship status was assessed using one item: “Are you currently in a romantic relationship?” (response options = yes/no). Participants who reported being in a relationship were asked: “How long have you been in your current romantic relationship?” (response provided in years and months). These two questions were prefixed by the explanation: “The next questions are about romantic relationships. Romantic relationships can take many forms. A romantic relationship is often a relationship in which two people are emotionally intimate with each other and sexually active to some degree.”

### ***Social Isolation***

Social isolation was assessed based on a procedure developed by Orsmond and colleagues (2013). Specifically, participants were asked to think about the last 12 months and answer the

following questions: “How often have you met with your friends in person to complete an activity that involved socialising (e.g. meeting for coffee, seeing a movie, attending a festival, playing a board game)?”; “How often have friends called you on the phone?”; “How often have friends contacted you in other ways (e.g., via email, Facebook, Instagram, instant messaging, or text)?”; and “How often have friends invited you to complete an activity that involved socialising (e.g. meeting for coffee, seeing a movie, attending a festival, playing a board game)?” on 5-point scale (1 = once a day; 2= 3-5 days per week; 3 = 1-2 days per week; 4 = every few weeks; 5 = less than once per month). Internal consistency for these four items was  $\alpha = 0.72$ . In line with Orsmond and colleagues (2013), one dichotomous indicator of social isolation was then created, such that participants who scored 5 (less than once per month) on all questions were given a code of 0 (socially isolated) and participants who scored below 5 on at least one question were given a code of 1 (not socially isolated).

### ***Loneliness***

The *University College of California, Los Angeles Loneliness Scale Short Form* (ULS-8; Hays & DiMatteo, 1987) was used measure participants’ subjective feelings of loneliness and social isolation. The ULS-8 is an 8 item self-report measure of loneliness and social isolation used widely in both general and clinical populations. Items are rated on scale (from 1 = never to 4 = always). Total scores range from 8 to 32 points with higher scores indicating higher levels of loneliness. The ULS-8 demonstrates strong reliability and validity with general population samples (Hays & DiMatteo, 1987). The ULS-8 has been used in previous autism research (e.g., Ee et al., 2019; Hedley, Uljarevic, Wilmont, Richdale & Dissanayake, 2018, Lin & Huang, 2017; Mazurek, 2014). Internal consistency for the ULS-8 in my sample was  $\alpha = 0.80$ . A copy of the ULS-8 is provided in Appendix L.

### ***Employment Status and Length***

Employment status was assessed using one item: “Do you currently have a paid job?” (response options = yes/no). Participants who reported being in paid employment were asked: “How

long have you been in your current paid employment (job)?" (response provided in years and months).

### ***Preferred Terminology***

In order to determine how participants wished to be described in the current chapter, they were asked to indicate their preference for person first (i.e., person with autism, autistic), identity first (i.e., autistic person) or other terminology. These response options were model on prior research (Perry et al., 2021).

### **Procedure**

Ethical approval was obtained from University College London Research Ethics Committee (approval no: 14389/002; see Appendix K). Participants were recruited via adverts distributed through the Cambridge Autism Research Database (an existing database of formally diagnosed adults in the UK; <https://autismresearchcentre.net/>) and on social media. Participants accessed the survey by following a link in an advert asking autistic adults to complete an online survey about, 'social behaviours, relationships, and wellbeing'. Upon accessing the survey, participants read an information sheet and provided their informed written consent. Participants then completed the abovementioned measures. Participants completed the survey in their own time and were able to start and stop their response as they chose.

To be eligible to take part in the study participants needed to be over the age of 18 and identify as being autistic (either formally diagnosed or self-identifying).

### ***Additional Items, Time Points, and Data Not Analysed in This Chapter***

The data in this chapter was collected in collaboration with other researchers as a part of a larger project. Within this larger project, data were collected from both formally diagnosed and self-identifying autistic people. Participants were additionally asked about their camouflaging contexts as well as satisfaction with their close friendship, romantic relationships, and employment, their feelings of authenticity in their close friendship and romantic relationships and their past romantic and employment experiences. Participants were also re-contacted and completed a follow-up survey

containing some of the abovementioned questions as well as questions about their experiences of the COVID-19 pandemic. The citation for the peer-reviewed published paper based on the COVID-19 element of the data set are as follows:

Bundy, R., Mandy, W., Crane, L., Belcher, H., Bourne, L., Brede, J., Hull, L., Brinkert, J., & Cook, J. (2022). The impact of early stages of COVID-19 on the mental health of autistic adults in the United Kingdom: A longitudinal mixed-methods study. *Autism*. <https://doi.org/10.1177/13623613211065543>

Although I had access to data from both self-diagnosed and self-identifying autistic people and data from additional items, these were not included here because: (1) the focus of this thesis as a whole is on autistic people with formal diagnoses; (2) the characteristics and experiences of self-identified and formally diagnosed autistic people may differ in important ways, however, the additional testing and exploration needed to examine this was not achievable given the already extensive research included in the current thesis; (3) additional data collected via additional items was outside the scope and focus of this chapter. This additional data is intended to be reported elsewhere.

### **Researcher Positionality**

Of the six researchers (W.M., L.C., R.B., H.B., L.H. and myself) who collaborated on this chapter, one researcher identifies as an autistic person; five researchers do not. Similar to me, all researchers align with the social models as opposed to medical models of autism.

### **Participants**

A total of 730 people engaged with the survey; 537 (73.6%) of whom completed all questions. Three cases were removed during data cleaning because they did not meet the inclusion criteria of being aged 18 years or over. Thus, data from 534 eligible autistic adults were collected. Data from 430 formally diagnosed autistic adults were used in the current analyses.

Participants were British (n = 223; 51.86%), North American (n = 87; 20.23%), European (n = 65; 15.12%), Oceanian (n = 42; 9.77%), Asian (n = 7; 1.63%), Middle Eastern (n = 2; 0.47%), and

African (n = 2; 0.47%). Most participants reported that English was their primary language, that is, the language they usually use to communicate with others (n = 378; 87.9%).

Participants reported having received a diagnosis of autism (n = 208; 48.4%), Asperger syndrome (n = 197; 45.8%) or another autism spectrum condition, e.g., atypical autism, PDD-NOS, high functioning autism (n = 25; 5.8%). Participants were diagnosed by a clinical psychologist (n = 175; 40.7%), psychiatrist (n = 93; 21.6%), paediatrician (n = 14; 3.3%); team of some/all of the above (n = 105; 24.4%) or other health professionals, e.g., NHS autism specialist practitioner, neuropsychologist, psychologist, NHS diagnostician, speech and language therapist, staff at autism assessment centre (n = 43; 10.0%). With regards to terminology, participants used the following terms to describe themselves: autistic person (n = 268; 62.3%), person with autism (n = 49; 11.4%), autist (n = 30; 7.0%), or other terminology (e.g., Aspie, neurodivergent, on the spectrum; n = 83; 19.3%).

Table 10 shows the characteristics of study participants, based on the total sample and broken down by sex/gender. In the current study, three sex/gender categories were created: cisgender women, cisgender men, and sex/gender diverse people. Cisgender individuals (i.e., cisgender women and cisgender men) identified with a gender identical to their sex observed at birth whilst those in the sex/gender diverse category included those who were non-binary, gender neutral, transgender, used other gender terminology, and selected differing genders. Whilst I acknowledge this 'sex/gender diverse' category contains a heterogeneous range of sex/gender combinations, these were nonetheless combined into one unitary group because (1) people in this category share a commonality in that they fall outside of the binary cisgender women and cisgender men categories and in the context of current research this important owing to the likely relationship between marginalised or minority social status and camouflaging (Botha & Frost, 2020; Lai et al., 2020; Perry et al., 2021); (2) further subcategorization would have significantly reduced power; and (3) such practice is in line with current high quality research within similar fields (e.g., Cooper, 2020; McQuaid et al., 2021). Differences on demographic variables between cisgender women, cisgender

men, and those in the sex/gender diverse category were tested using Welch's F or Pearson's Chi-Square tests, as appropriate. There were some notable demographic differences between sex/genders with regard to age, living arrangements, and co-occurring conditions: cisgender men were significantly older than cisgender women and those with other gender identities; sex/gender diverse people were diagnosed at a significantly younger age than cisgender women and cisgender men; the odds of living in supported accommodation were higher for cisgender men relative to cisgender women; the odds of having a mental health condition were higher for sex/gender diverse people relative to cisgender men; the odds of having a physical disability were higher for sex/gender diverse people relative to both cisgender women and cisgender men; the odds of having a specific learning disability were higher for sex/gender diverse people relative to both cisgender women and cisgender men; the odds of having a genetic condition were higher for sex/gender diverse people relative to cisgender men; the odds of having other conditions were higher for sex/gender diverse people relative to both cisgender women and men. With regards to camouflaging, in line with prior research, cisgender women and sex/gender diverse people reported significantly higher levels of camouflaging intent than cisgender men.

**Table 10***Participant Characteristics*

	Total sample	Cisgender women	Cisgender men	Sex/gender diverse	Group comparison and significant post-hoc comparisons
N	430	248	90	92	
Age range (M; SD)	18-72 (40.44; 13.37)	19-69 (40.34; 12.68)	18-72 (44.58; 14.49)	19-71 (36.65; 13.04)	Welch $F(2, 176.63) = 7.49, p = .001$ . Post-hoc Games-Howell sig differences <b>cisgender men &gt; cisgender women</b> , mean difference = 4.24, $p = .04$ , 95% CI [.15, 8.33]; <b>cisgender men &gt; sex/gender diverse</b> , mean difference = 7.93, $p < .001$ , 95% CI [3.09, 12.76].
Age at autism diagnosis	1-68 (33.90; 15.06)	3-67 (35.48; 13.92)	1-68 (35.57; 17.79)	2-60 (28; 13.75)	Welch $F(2, 174.26) = 10.38, p < .001$ . Post-hoc Games-Howell sig differences <b>cisgender women &gt; sex/gender diverse</b> , mean difference = 7.48, $p < .001$ , 95% CI [3.49, 11.46]; <b>cisgender men &gt; sex/gender diverse</b> mean difference = 7.57, $p = .005$ , 95% CI [1.99, 13.15].
Highest level of education N (%)					
No schooling completed/Primary/elementary school	7 (1.6)	4 (1.6)	3 (3.3)	0	Pearson $\chi^2(10) = 12.58, p = .248$ .
Secondary/high school	89 (20.7)	42 (16.9)	23 (25.6)	24 (26.1)	
Technical school/trade school/apprenticeship	48 (11.2)	28 (11.3)	7 (7.8)	13 (14.1)	
Undergraduate university degree	119 (27.7)	70 (28.2)	21 (23.3)	28 (30.4)	
Postgraduate university degree	141 (32.8)	87 (35.1)	31 (34.4)	23 (25.0)	
Other	26 (6.0)	17 (6.9)	5 (5.6)	4 (4.3)	
Living arrangements N (%)					
At home with partner and/ or children	201 (46.7)	129 (52.0)	31 (34.4)	41 (44.6)	Lives in supported accommodation vs other living arrangements: Fischer's Exact Test = 7.27, $p = .02$ ; Significant post hoc odds ratios: <b>cisgender men relative to cisgender women</b> OR = 11.49, 95% CI [1.27, 104.21].



At home alone	102 (23.7)	60 (24.2)	27 (30.0)	15 (16.3)	
At home with parents, grandparents, or siblings	70 (16.3)	33 (13.3)	18 (20.0)	19 (20.7)	
At home with flatmates or friends	25 (5.8)	12 (4.8)	3 (3.3)	10 (10.9)	
In supported accommodation	5 (1.2)	1 (.4)	4 (4.4)	0	
Other	27 (6.3)	13 (5.2)	7 (7.8)	7 (7.6)	
<hr/>					
Study					
In part-time education	58 (13.5)	39 (15.7)	10 (11.1)	9 (9.8)	Studying vs not studying: Pearson $\chi^2(2) = 4.40, p = .11$ .
In full-time education	51 (11.9)	33 (13.3)	7 (7.8)	11 (12.0)	
Not in education	321 (74.7)	176 (71.0)	73 (81.1)	72 (78.3)	
<hr/>					
Employment					
In part-time paid employment	96 (22.3)	63 (25.4)	12 (13.3)	21 (22.8)	In paid employment vs not in paid employment: Pearson $\chi^2(2) = 1.54, p = .46$ .
In full-time paid employment	115 (26.7)	69 (27.8)	26 (28.9)	20 (21.7)	
In voluntary employment	22 (5.1)	9 (3.6)	7 (7.8)	6 (6.5)	
Not employed, looking for employment	35 (8.1)	16 (6.5)	13 (14.4)	6 (6.5)	
Not employed, not looking for employment	116 (27)	64 (25.8)	23 (25.6)	29 (31.5)	
Other	68 (15.8)	37 (14.9)	14 (15.6)	17 (18.5)	
<hr/>					
Co-occurring conditions N (%)					
Mental health condition	314 (73.0)	183 (73.8)	57 (63.3)	74 (80.4)	Pearson $\chi^2(2) = 6.93, p = .03$ . Significant post hoc odds ratios: <b>sex/gender diverse relative to cisgender men</b> OR = 2.38, 95% CI [1.22, 4.65].
Physical disability	82 (19.1)	41 (16.5)	12 (13.3)	29 (31.5)	Pearson $\chi^2(2) = 12.20, p = .002$ . Significant post hoc odds ratios: <b>sex/gender diverse relative to cisgender women</b> OR = 2.32, 95% CI [1.34, 4.04]; <b>sex/gender diverse relative to cisgender men</b> OR = 2.99, 95% CI [1.41, 6.34].
Learning disability	27 (6.3)	14 (5.6)	5 (5.6)	8 (8.7)	Pearson $\chi^2(2) = 1.16, p = .56$ .
Specific learning difficulties	98 (22.8)	53 (21.4)	12 (13.3)	33 (35.9)	Pearson $\chi^2(2) = 13.80, p = .001$ . Significant post hoc odds ratios: <b>sex/gender diverse relative to cisgender women</b> OR = 2.06 95% CI [1.22, 3.47]; <b>sex/gender</b>

Genetic condition	23 (5.3)	13 (5.2)	1 (1.1)	9 (9.8)	<p><b>diverse relative to cisgender men</b> <math>OR = 3.64</math>, 95% CI [1.73, 7.64].  Fisher's Exact Test = 6.76, <math>p = .03</math>. Significant post hoc odds ratios: <b>sex/gender diverse relative to cisgender men</b> <math>OR = 9.65</math>, 95% CI [1.20, 77.83].  Pearson <math>\chi^2(2) = 10.36</math>, <math>p = .005</math>. Significant post hoc odds ratios; <b>sex/gender diverse relative to cisgender women</b> <math>OR = 1.87</math>, 95% CI [1.10, 3.19]; <b>sex/gender diverse relative to cisgender men</b> <math>OR = 3.15</math>, 95% CI [1.49, 6.64]</p>
Other conditions	93 (21.6)	51 (20.6)	12 (13.3)	30 (32.6)	
<hr/>					
Autistic Traits					
AQ M (SD)	7.99 (1.73)	7.89 (1.68)	8.18 (1.75)	8.05 (1.83)	Welch $F(2, 178.49) = .99$ , $p = .37$ .
Below AQ cut off (%)	37 (8.6)	23 (9.3)	5 (5.6)	9 (9.8)	
Above AQ cut off (%)	393 (91.4)	225 (90.7)	85 (94.4)	83 (90.2)	
<hr/>					
Camouflaging					
CAT-Q M (SD)	126.10 (22.91)	129.51 (20.88)	116.33 (24.79)	126.46 (23.73)	Welch $F(2, 171.09) = 10.08$ , $p < .001$ . Post-hoc Games-Howell sig differences <b>cisgender women &gt; cisgender men</b> , mean difference = 13.17, $p < .001$ , 95% CI [6.23, 20.12]; <b>sex/gender diverse &gt; cisgender men</b> , mean difference = 10.12, $p = .02$ , 95% CI [1.62, 18.63].
<hr/>					
Social variables					
Friendship motivation M (SD)	3.98 (1.03)	3.97 (1.03)	3.87 (1.07)	4.11 (1.01)	Welch $F(2, 182.26) = 1.25$ , $p = .29$ .
Close friend is autistic (%)	40 (9.3)	24 (9.7)	7 (7.8)	9 (9.8)	Pearson $\chi^2(2) = 1.21$ , $p = .55$ .

Note. Employment categories not mutually exclusive. Co-occurring conditions not mutually exclusive. For continuous variables: Welch's F-tests was used as a robust alternative to one-way independent Analysis of Variance; significant (at  $p > .05$ ) Welch's F tests were followed up with Games-Howell procedure. Both Welch's F-tests and Games-Howell procedure are robust tests that do not rely on assumptions of normality or homogeneity, or require equal groups (Field, 2018). When categorical variables failed to meet expected cell count requirements, response categories were collapsed. Fisher's Exact test was used in instances where collapsed categories failed to meet expected cell count requirements. Significant Pearson  $\chi^2$  and Fisher's Exact tests were followed up via the calculation of odds ratios.

## Data Analysis

### Missing Data

Levels of missing data were low. 25 participants (5.8%) were missing some item scores on the CAT-Q, 10 participants (2.3%) were missing some items scores on the DASS-21, and 8 participants (1.9%) were missing some item scores on the ULS-8. There was no evidence to suggest a pattern to missing data based on Little's (1988) MCAR test ( $\chi^2(63, N = 430) = 54.94, p = .755$ ). Missing data were addressed using multiple imputation in order to reduce potential bias and maximise power (Newman, 2014).

### Outliers

Data were checked for univariate outliers (i.e., cases with standardised values greater than 3.29). Outliers were winsorized in line with recommendations of Tabachnick and Fidell (2013), such that each outlier value was replaced with a value that was one unit larger or smaller than the nearest non-outlier value. The number of cases winsorized was: one for each of AQ, number of friends, close friendship length; two for CAT-Q; and three for employment length.

### Analyses

#### *Regression Analyses*

A series of 11 hierarchical linear (for continuous dependent variables) and nested logistic (for dichotomous dependent variables) regressions were used to examine (a) the association between camouflaging intent and dependent variables and (b) the moderating effect of sex/gender on the association between camouflaging intent and dependent variables. In all models, I considered  $p < .005$  as significant and  $p$  values between .05 and .005 as suggestively significant (Ioannidis, 2018).

***Hierarchical Linear Regressions.*** Ordinary least square, hierarchical linear regressions were conducted following the procedures outlined by Field (2018) and Hayes (2017). Three step, hierarchical multiple linear regression models were conducted, predicting: number of friends, friendship length, relationship length, employment length, depressive symptoms, anxious symptoms, and stress symptoms. Camouflaging intent was a predictor, and various potential

confounders were controlled for. Firstly, two dummy codes were created for the multicategorical variable of sex/gender: 'cisgender women versus cisgender men' and 'cisgender women versus sex/gender diverse people', where 0 indicated cisgender women and 1 indicated cisgender men or sex/gender diverse people. Cisgender women were selected as the reference group owing to them being the largest group. Control variables were entered at Step 1, with camouflaging entered at Step 2, and two camouflaging\*gender interaction terms ('camouflaging\*cisgender women versus cisgender men' and 'camouflaging\*cisgender women versus sex/gender diverse people') were entered at Step 3. To examine the partial association of camouflaging on relevant dependent variables, significance test and interval estimation approaches were used to examine  $R^2$  change between Model 1 and Model 2 (evaluated via the  $F$  statistic) and the regression co-efficient of the CAT-Q in Model 2 (evaluated via  $t$  statistic). The regression co-efficient ( $B$ ) and standardised regression co-efficient ( $\beta$ ) were used as measures of effect size.

To examine if sex/gender moderated the association between camouflaging intent and each dependent variable, the significance test approach was used to examine the  $R^2$  change resulting from adding the two interaction terms at Step 3. In this instance, the  $R^2$  change represented the omnibus effects of the multicategorical interaction. Thus, a significant  $R^2$  change indicated that the relationship between camouflaging and the dependent variable was linearly related to sex/gender category (i.e., the relationship between camouflaging and the dependent variable was different between two or more levels of sex/gender). It should be noted that, in the case that the  $R^2$  change was significant, information regarding where differences lie was not fully available at Step 3 as it was currently specified, because the regression co-efficient of 'camouflaging\*cisgender women versus cisgender men' quantified the difference in the association between camouflaging and the dependent variable between cisgender women and cisgender men, and the co-efficient of 'camouflaging\*cis-women versus sex/gender diverse people' quantified the difference in the association between camouflaging and the dependent variable between cisgender women and sex/gender diverse people. Thus, in order to quantify the difference in the association between

camouflaging and the dependent variable between sex/gender diverse people and cisgender men, it would be necessary to (a) re-specify dummy codes to: 'sex/gender diverse people versus cisgender men' and 'sex/gender diverse people versus cisgender women' where 0 indicates sex/gender diverse people and 1 indicates cisgender men or cisgender women, before (b) re-running Step 3 using the interaction terms 'camouflaging\*sex/gender diverse people vs cisgender men' and 'camouflaging\*sex/gender diverse people vs cisgender women'. After this, it would be then necessary to probe interactions by examining the relationship between camouflaging and the dependent variables of interest for each sex/gender category.

Assumptions and bias in linear regression models were assessed and addressed in line with recommendations by Field (2018). Scatterplots were generated to confirm linearity between variables. Histograms and normal P-P plot for residuals were generated to confirm normality. Scatterplots of residuals against predicted/variables were inspected for evidence of heteroscedasticity. Cook's distances were inspected for evidence of influential cases. VIF and tolerance values were inspected for evidence of multi-collinearity. In four models (those predicting number of friends, friendship length, relationship length, and employment length), the assumption of homoscedasticity was violated. For these models, bootstrapping was used generate robust confidence intervals and significance tests of model parameters. All other assumptions were met.

**Logistic Regressions.** Maximum likelihood logistic regressions were conducted following the procedures outlined by Field (2018) and Osborne (2017). Four sets of three nested logistic regression models were conducted, predicting the presence of a close friendship, relationship, and paid employment as well as social isolation (coded 0 for not present and 1 for present) from camouflaging intent, whilst controlling for potential confounders. As above, two dummy codes were created for the multicategory variable of sex/gender category. For each dependent variable, control variables were added in Model 1, CAT-Q was added in Model 2, and two camouflaging\*sex/gender interaction terms were added in Model 3. To examine the partial association between the CAT-Q and various dependent variables, significance test and interval estimation approaches were used to

examine the change in -2LL between Model 1 and Model 2 (evaluated via Chi-square statistic) and the regression co-efficient in Model 2 (evaluated via the Wald statistic). Odds ratios were used as a measure of effect size.

Similar to the above linear regressions, in order to examine if sex/gender moderated the association between camouflaging and each dependent variable, the significance test approach was used to examine the change in -2LL (evaluated via the Chi-square statistic) between Model 2 and Model 3.

Assumptions in logistic regression models were assessed in line with recommendations from Field (2018). Predictor\*Ln(predictor) interactions terms were tested to confirm the linearity of the logit. VIF and tolerance values were inspected for evidence of multi-collinearity (when models were re-specified as linear). Cook's distances were inspected for evidence of influential cases. All assumptions were met.

### ***Selecting Control Variables***

One aim of using regression models containing control variables was to examine the overall association between the CAT-Q and dependent variables while mitigating against confounding bias in co-efficient estimates (as opposed to improving precision of estimates). When building such regression models, it was important to carefully select control variables so as to (1) avoid introducing or exacerbating bias, and (2) achieve parsimony (Field, 2018; Pearl & Mackenzie, 2018). Established principles of confounder variable selection suggest that sets of control variables entered into regressions to reduce bias should only include variables that are plausible antecedents or determinants of both the main independent variable of interest and the dependent variable (Bartram, 2021; Elwert & Winship, 2014). In contrast, variables that intervene (or mediate) between the main independent variable of interest and dependent variable should not be included because these will introduce or exacerbate bias. Similarly, variables that are determined by both the independent variable of interest and the dependent variable ('colliders') should not be included because these introduce or exacerbate bias. Finally, it is not necessary to include variables that are

antecedents of the dependent variable but not the main variable of interest, because these variables do not introduce bias (these would improve precision, but this is not the aim of our models).

Owing to a lack of prior research, the nature of the association between all variables in the current data set was unknown. Thus, I used a theoretically informed, data-driven approach in selecting control variables. Firstly, I controlled for age, gender, and autistic traits, as these have been associated with both camouflaging as well as social, employment, and mental health outcomes in similar samples (e.g., Hull et al., 2021; Perry et al., 2021; Sedgewick, Leppanen & Tchanturia, 2019; Scheeren et al., 2021; Taylor et al., 2015). Age at diagnosis was not controlled for even though it has been associated with camouflaging (Perry et al., 2021), and it is plausibly associated with social, employment and mental health outcomes, because it may be determined by rather than an antecedent of camouflaging (i.e., it may mediate the relationship between camouflaging and dependent variables).

I then selected additional control variables based on statistical relationships between variables within the current data set. Univariate analyses (correlations and chi-square tests) examined relationships between all variables (Table 11).

**Table 11**

*Univariate Associations Between All Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1. Age	—																												
2. Age at diagnosis	.85	—																											
3. Ciswomen vs cismen	.16	.06	—																										
4. Ciswomen vs sex/gender diverse	-.15	-.21	-.27	—																									
5. Education	.18	.16	-.03	-.09	—																								
6. Living arrangements	.09	.01	.16	-.06	-.08	—																							
7. Study	-.22	-.17	-.08	-.04	.02	-.01	—																						
8. Mental health	-.20	-.18	-.11	.09	-.04	.02	.04	—																					
9. Physical disability	-.01	-.03	-.08	.17	.04	-.05	.02	.14	—																				
10. Learning disability	-.04	-.13	-.02	.05	-.02	-.03	-.02	.07	.05	—																			
11. Specific learning difficulties	-.07	-.09	-.12	.16	.04	-.06	.04	.11	.19	.18	—																		
12. Genetic condition	.06	.05	-.10	.10	.07	-.03	-.07	.05	.31	-.02	.07	—																	
13. Other condition	-.02	-.01	-.10	.14	-.04	-.06	-.01	-.02	-.07	.00	-.03	-.05	—																
14. AQ	.01	.05	.06	.02	-.02	.03	-.01	.07	.03	.03	.01	-.02	.09	—															
15. CAT-Q	-.16	-.02	-.22	.01	.06	-.18	.04	.18	.08	-.06	.05	.11	.06	.11	—														
16. Friendship motivation	-.19	-.18	-.06	.07	.01	.04	.04	.01	.03	.00	.02	.04	.02	-.13	.00	—													
17. Friendship number	-.09	-.11	.01	.02	.14	-.01	.04	.02	.02	.11	-.01	-.01	.03	.00	-.05	.19	—												
18. Close friendship status	-.08	-.01	-.10	-.06	.10	-.03	.01	.08	.02	.06	.04	.09	-.05	-.07	.01	.09	.16	—											
19. Friendship length	.51	.43	.15	-.10	-.01	.01	-.14	-.11	.12	-.02	-.02	.11	-.04	-.07	-.05	-.03	-.05	°	—										
20. Social isolation	.15	.12	.14	-.05	-.04	.02	-.05	-.07	-.03	.00	-.05	-.01	.05	.03	-.01	-.11	-.13	-.30	.14	—									
21. Autistic friend	.07	.10	-.01	-.07	.19	.05	.05	-.05	.04	-.14	-.09	.13	-.11	.09	.06	.06	-.06	°	.12	-.06	—								
22. ULS	-.03	.01	.01	.05	-.08	.00	-.04	.17	.00	.09	.00	.02	.02	.03	.24	.17	-.25	-.23	.02	.20	.01	—							
23. Relationship status	.08	.18	-.15	.03	.07	-.11	-.07	-.02	.01	.01	.02	-.01	.04	.01	.15	-.06	-.05	.01	-.08	.03	.00	-.19	—						
24. Relationship length	.67	.59	.34	-.16	.11	°	.01	-.18	-.10	-.05	-.11	-.02	-.10	.09	-.16	-.17	.00	-.18	.22	.22	.13	.01	°	—					
25. Employment status	-.01	.02	-.04	-.04	.16	-.03	.05	-.16	-.11	-.05	-.03	.01	-.04	-.06	-.02	.02	.03	.11	-.02	-.10	-.06	-.15	.19	-.17	—				
26. Employment length	.48	.35	.09	.06	-.01	.13	-.11	-.08	-.05	-.01	-.08	.10	.07	.08	-.15	-.03	-.09	-.15	.09	.24	.10	.05	.08	.38	°	—			
27. DASS Depression	-.06	-.06	.05	-.02	-.08	.01	-.07	.29	.07	.03	.02	.02	-.01	.03	.19	.05	-.12	-.06	.01	.14	-.02	.52	-.19	-.16	-.12	-.03	—		
28. DASS Anxiety	-.15	-.12	-.14	.09	-.11	-.03	.01	.33	.10	.14	.19	.13	.04	.05	.39	-.04	-.03	.06	-.03	.00	-.05	.33	-.10	-.21	-.09	-.08	.53	—	
29. DASS Stress	-.12	-.09	-.06	.04	-.09	-.02	.02	.33	.08	.11	.14	.07	.05	.05	.37	.05	-.01	.05	-.09	-.01	-.05	.37	-.01	-.04	-.04	.04	.56	.70	—

	p > .10
	p < .10
	p < .05
	p < .001

Note: Pearson’s r calculated for associations between two continuous variables. Point-Biserial correlations calculated for associations between continuous and binary variables. Spearman Rho correlations calculated for associations between continuous and ordinal variables. Phi-coefficient calculated for associations between two binary variables.

° association cannot be calculated because one variable is constant i.e., relationship status and relationship length where every person with a value above 0 for relationship length will have relationship status value of 1.



Next, variables significantly related to both the CAT-Q and outcome of interest at  $p < .10$  were identified. The more liberal significance cut-off of  $p < .10$  was used because my aim was to identify potential variables to add to models rather than test a hypothesis (Ranganathan et al., 2017). Next, we sought to determine whether each of these variables was either: (1) an antecedent to camouflaging and the outcome; (2) an intermediate between camouflaging and the outcome; or (3) a collider between camouflaging and the outcome. For some variables, particularly demographic variables, there was no ambiguity regarding the nature of association. For example, physical disabilities or genetic conditions are antecedents of camouflaging; camouflaging cannot determine whether one has a physical disability or genetic condition. However, for many variables it was not possible to determine conclusively their status as either antecedents, intermediates, or colliders. Variables associated with the CAT-Q and outcomes of interest at  $p < .10$ , along with the decision regarding their status as either an (a) antecedent or (b) plausible antecedent/intermediate/collider, are displayed in Table 12.

**Table 12**

*Potential Additional Control Variables Identified as Being Associated with CAT-Q and Outcomes at  $p < .10$*

Outcome of interest	Antecedents	Plausible antecedent/intermediate/collider
Number of friends		ULS; DASS dep
Close friendship	Genetic condition	MH; ULS; Relationship length Employment length
Close friendship length	Genetic condition	MH; Relationship length
Social isolation		ULS; Relationship length; employment length; DASS dep
Loneliness		MH; Relationship status; DASS dep; DASS anx; DASS stress
Relationship		Living arrangements; ULS; DASS dep; DASS anx
Relationship length		Living arrangements; MH; employment length; DASS dep; DASS anx
In paid employment		MH; ULS; Relationship status Relationship length; DASS dep DASS anx
Employment length		Living arrangements; Relationship length
DASS depression		MH; ULS; Relationship status Relationship length; DASS anx; DASS stress
DASS anxiety	Genetic condition	MH; ULS; Relationship status Relationship length; DASS dep DASS stress
DASS Stress		MH; ULS; DASS dep; DASS anx

### ***Impact of COVID-19 on data***

Data were collected from February to April of 2020; a period that coincided with the early stages of the COVID-19 pandemic. Of the 430 participants who took part, 149 completed the survey after the UK (and many other countries) entered lockdown for the first time (23<sup>rd</sup> March, 2020). All regression analyses were re-run with these 149 participants excluded. Findings suggested a similar pattern of results, with similar direction and magnitude of effects (see Appendix M). Thus, to retain power, these participants were included in the final analyses below.

## Results

### Outcomes

Means and standard deviations, or frequencies and percentages, for all outcomes for the total sample (and broken down by sex/gender) are provided in Table 13.

**Table 13**

*Means, Standard Deviations, Frequencies, and Percentages for Outcomes*

	Total sample	Cisgender women	Cisgender men	Sex/gender diverse
N	430	248	90	92
Social outcomes				
Number of friends M (SD)	7.36 (17.00)	7.05 (15.73)	7.69 (21.62)	7.86 (15.28)
Has at least one close friend (%)	236 (54.9)	150 (60.5)	41 (45.6)	45 (48.9)
Close friendship length in years M (SD)	15.0 (11.59)	14.69 (11.52)	18.67 (13.02)	12.66 (9.75)
Social isolated (%)	61 (14.2)	30 (12.1)	21 (23.3)	10 (10.9)
ULS M (SD)	23.09 (4.52)	22.90 (4.49)	23.20 (4.41)	23.49 (4.71)
Relationship outcomes				
Currently in a relationship (%)	212 (49.3)	133 (53.6)	31 (34.4)	48 (52.2)
Relationship length in years M (SD)	13.26 (10.92)	12.37 (10.37)	22.07 (11.58)	10.05 (9.13)
Employment outcomes				
In paid employment (%)	230 (53.5)	139 (56.0)	45 (50.0)	46 (50.0)
Current employment length in years M (SD)	6.52 (7.06)	5.86 (6.41)	7.75 (8.12)	7.30 (7.70)
Mental ill-health outcomes				
DASS depression M (SD)	20.45 (12.08)	20.26 (11.71)	21.51 (12.82)	19.93 (12.37)
DASS anxiety M (SD)	15.10 (10.35)	15.45 (10.01)	12.38 (10.82)	16.83 (10.37)
DASS stress M (SD)	24.16 (9.93)	24.28 (9.70)	23.02 (11.12)	24.96 (9.29)

### Research Aim One: Camouflaging and Social and Employment Outcomes

Results of regression models are summarised in Tables 14-25. Camouflaging was not a significant (i.e.,  $p < .005$ ) or suggestive (i.e.,  $p$  values between .05 and .005) predictor of number of friends, close friendship status, social isolation, relationship length, employment status, or

employment length. Camouflaging was a suggestive predictor of relationship status; discussed below.

### ***Camouflaging and Relationship Status***

As indicated in Table 18, results of nested logistic regressions suggested that the overall fit for Model 1 with age, gender, and autistic traits included was significant,  $\chi^2(4, N = 430) = 15.23, p = .004$ . Overall model fit was suggestively improved when camouflaging was added to the model,  $\chi^2(1, N = 430) = 7.81, p = .005$ . The odds ratio indicated that for every one unit increase in camouflaging, the likelihood of being in a relationship increased by 1.3%, 95% CI [1.00, 1.02].

## **Research Aim Two: Camouflaging, Mental Health Outcomes, and Psychological Distress**

### ***Camouflaging and Depressive Symptoms***

Results of a hierarchical linear regression suggested that at Step 1, age, gender, and autistic traits did not contribute significantly to the model (see Table 22). At Step 2, the addition of camouflaging explained an additional 3.7% of the variance in depressive symptoms, which was a significant change,  $F(1, 424) = 16.41, p < .001$ . The regression slope indicated that a one unit increase in camouflaging was associated with a 0.11 unit increase in depressive symptoms, 95% CI [.06, .16].

### ***Camouflaging and Anxious Symptoms***

As can be seen in Table 23, a hierarchal linear regression showed that at Step 1, age, gender, autistic traits, and having a genetic condition contributed significantly to the model,  $F(5, 424) = 4.70, p < .001$ , accounting for 5.3% of the variation in anxious symptoms. At Step 2, the addition of camouflaging explained a further 11.8% of the variance in anxious symptoms, which was a significant change,  $F(1, 423) = 60.15, p < .001$ . The regression slope indicated that a one unit increase in camouflaging was associated with a 0.16 unit increase in anxious symptoms, 95% CI [0.12, 0.21].

### ***Camouflaging and Stress Symptoms***

Results of a hierarchical linear regression suggested that at Step 1, age, gender, and autistic traits did not significantly contribute to the model (see Table 24). The addition of camouflaging at

Step 2 explained an additional 12.2% of the variance in stress symptoms, which was a significant change,  $F(1, 424) = 60.27, p < .001$ . The regression slope indicated that a one unit increase in camouflaging was associated with a 0.16 unit increase in stress symptoms, 95% CI [0.12, 0.20].

### ***Camouflaging and Loneliness***

As can be seen in Table 25, results of a hierarchical linear regression suggested that at Step 1, age, gender, and autistic traits did not contribute significantly to the model. At Step 2, the addition of camouflaging explained an additional 6.1% of the variance in loneliness which was a significant change  $F(1, 424) = 27.72, p < .001$ . The regression slope indicated that a one unit increase in camouflaging was associated with a 0.05 unit increase in loneliness, 95% CI [0.03, 0.07].

### **Research Aim Three: Moderating Effects of Sex/Gender**

The interaction between camouflaging and sex/gender was not significant in any model. As a result, no additional follow up analyses were conducted to investigate sex/gender effects.

### **Summary of Results**

In sum, the results suggest that higher levels of camouflaging are associated with an increased likelihood of being in a relationship. However, the results do not suggest camouflaging is associated with number of friends, close friendship status, social isolation, relationship length, employment status, or employment length. Additionally, the results provide support for the hypothesis that higher levels of camouflaging are associated with higher levels of depressive, anxious, and stress symptoms and feelings of loneliness. These results also provide support for the hypothesis that sex/gender does not moderate the relationships between camouflaging and mental health outcomes.

**Table 14***Hierarchical Regression Predicting Number of Friends in the Total Sample (N = 430)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 425	0.92	.45	.01	-.001				
Age	-0.12	-0.29	0.01	0.06	-.09	.11									
Cisgender men	1.15	-2.64	6.52	2.11	.03	.67									
Sex/gender diverse people	0.39	-3.33	4.88	2.09	.01	.84									
AQ	-0.05	-0.70	0.59	0.48	-.01	.86									
Step 2							5, 424	1.06	.38	.01	.001	1, 424	1.61	.21	.004
Age	-0.13	-0.31	0.02	0.06	-.10	.11									
Cisgender men	0.55	-3.76	5.94	2.17	.01	.85									
Sex/gender diverse people	0.19	-3.88	4.88	2.10	.01	.93									
AQ	0.03	-0.60	0.66	0.48	.003	.91									
CAT-Q	-0.05	-0.15	0.04	0.04	-.06	.31									
Step 3							7, 422	1.45	.18	.02	.01	2, 422	2.43	.09	.01
Age	-0.12	-0.31	0.01	0.06	-.10	.12									
Cisgender men	-7.26	-31.53	14.03	10.98	-.17	.54									
Sex/gender diverse people	-25.33	-57.74	-2.31	11.77	-.61	.08									
AQ	-0.001	-0.63	0.61	0.48	.000	.997									
CAT-Q	-0.11	-0.27	0.002	0.05	-.15	.14									
CAT-Q x Cisgender men	0.06	-0.08	0.23	0.09	.17	.47									
CAT-Q x Sex/gender diverse people	0.20	0.03	0.44	0.09	.63	.09									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.

**Table 15***Logistic Regression Predicting Close Friendship Status in the Total Sample (N= 430)*

	Predictor Statistics					CI		Model statistics			Change statistics			
	B	SE	Wald	p	Odds Ratio	Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								5.00	15.52	.01	.05			
Age	-0.01	0.01	2.77	.10	0.99	0.97	1.00							
Cisgender men	-0.50	0.25	3.97	.05	0.61	0.37	0.99							
Sex/gender diverse people	-0.55	0.25	4.82	.03	0.58	0.35	0.94							
AQ	-0.07	0.06	1.36	.24	0.94	0.83	1.05							
Genetic condition	0.95	0.50	3.70	.05	2.59	0.98	6.84							
Model 2								6.00	15.96	.01	.49	1.00	0.44	.51
Age	-0.01	0.01	3.05	.08	0.99	0.97	1.00							
Cisgender men	-0.54	0.26	4.35	.04	0.58	0.35	0.97							
Sex/gender diverse people	-0.57	0.25	5.05	.03	0.57	0.34	0.93							
AQ	-0.06	0.06	1.13	.29	0.94	0.84	1.05							
Genetic condition	0.99	0.50	3.93	.05	2.69	1.01	7.14							
CAT-Q	-0.003	0.01	0.44	.51	1.00	0.99	1.01							
Model 3								8.00	19.13	.01	.06	2.00	3.17	.21
Age	-0.01	0.01	2.81	.09	0.99	0.97	1.00							
Cisgender men	-2.83	1.36	4.37	.04	0.06	0.004	0.84							
Sex/gender diverse people	-1.93	1.44	1.81	.18	0.15	0.01	2.42							
AQ	-0.06	0.06	1.15	.28	0.94	0.84	1.05							
Genetic condition	0.97	0.50	3.76	.05	2.64	0.99	7.03							
CAT-Q	-0.01	0.01	2.61	.11	0.99	0.98	1.00							
CAT-Q x Cisgender men	0.02	0.01	2.95	.09	1.02	1.00	1.04							
CAT-Q x Sex/gender diverse people	0.01	0.01	0.91	.34	1.01	0.99	1.03							

<sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 16**

*Hierarchical Regression Predicting Friendship Length in Those who had a Close Friendship (N = 236)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							5, 230	17.40	<.001	.27	.26				
Age	0.43	0.30	0.56	0.05	.49	.001									
Cisgender men	2.50	-1.07	6.18	1.78	.08	.18									
Sex/gender diverse people	0.23	-2.81	3.18	1.74	.01	.90									
AQ	-0.37	-0.99	0.22	0.36	-.06	.25									
Genetic condition	3.60	-1.05	8.70	2.55	.08	.13									
Step 2							6, 229	14.44	<.001	.28	.26	1, 229	0.02	.88	.00
Age	0.43	0.30	0.56	0.05	.49	.001									
Cisgender men	2.54	-1.06	6.43	1.80	.08	.18									
Sex/gender diverse people	0.24	-2.77	3.23	1.74	.01	.89									
AQ	-0.37	-1.03	0.25	0.36	-.06	.24									
Genetic condition	3.56	-1.10	8.58	2.57	.08	.15									
CAT-Q	0.01	-0.06	0.08	0.03	.01	.89									
Step 3							8, 227	10.87	<.001	.28	.25	2, 227	0.38	.68	.002
Age	0.43	0.30	0.56	0.05	.49	.001									
Cisgender men	1.53	-20.34	22.61	9.24	.05	.89									
Sex/gender diverse people	8.67	-10.78	32.32	10.68	.30	.41									
AQ	-0.37	-1.03	0.27	0.37	-.06	.25									
Genetic condition	3.88	-0.81	8.87	2.60	.09	.13									
CAT-Q	0.01	-0.07	0.10	0.04	.03	.78									
CAT-Q x Cisgender men	0.01	-0.17	0.20	0.07	.04	.93									
CAT-Q x Sex/gender diverse people	-0.07	-0.24	0.08	0.08	-.29	.40									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.



**Table 17***Logistic Regression Predicting Social Isolation in the Total Sample (N= 430)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								4.00	14.83	.01	.06			
Age	0.03	0.01	7.29	.01	1.03	1.01	1.05							
Cisgender men	0.66	0.32	4.19	.04	1.94	1.03	3.67							
Sex/gender diverse people	-0.03	0.39	0.01	.94	0.97	0.45	2.09							
AQ	0.04	0.09	0.27	.61	1.05	0.89	1.23							
Model 2								5.00	15.66	.01	.06	1.00	0.83	.36
Age	0.03	0.01	7.85	.01	1.03	1.01	1.05							
Cisgender men	0.74	0.34	4.87	.03	2.10	1.09	4.04							
Sex/gender diverse people	-0.002	0.39	0.000	.997	1.00	0.46	2.16							
AQ	0.04	0.09	0.16	.69	1.04	0.88	1.23							
CAT-Q	0.01	0.01	0.81	.37	1.01	0.99	1.02							
Model 3								7.00	17.01	.02	.07	2.00	1.34	.51
Age	0.03	0.01	7.83	.01	1.03	1.01	1.05							
Cisgender men	2.09	1.77	1.39	.24	8.07	0.25	261.21							
Sex/gender diverse people	-1.15	2.44	0.22	.64	0.32	0.003	38.04							
AQ	0.03	0.09	0.13	.72	1.03	0.87	1.22							
CAT-Q	0.01	0.01	0.75	.39	1.01	0.99	1.03							
CAT-Q x Cisgender men	-0.01	0.01	0.63	.43	0.99	0.96	1.02							
CAT-Q x Sex/gender diverse people	0.01	0.02	0.23	.63	1.01	0.97	1.05							

<sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 18***Logistic Regression Predicting Relationship Status in the Total Sample (N=430)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1														
Age	0.02	0.01	4.74	.03	1.02	1.00	1.03	4.00	15.23	.004	.05			
Cisgender men	-0.88	0.26	11.24	.001	0.42	0.25	0.70							
Sex/gender diverse people	-0.002	0.25	0.000	.99	1.00	0.61	1.62							
AQ	0.02	0.06	0.18	.67	1.03	0.92	1.15							
Model 2								5.00	23.05	<.001	.07	1.00	7.82	.01
Age	0.02	0.01	6.53	.01	1.02	1.01	1.04							
Cisgender men	-0.73	0.27	7.50	.01	0.48	0.28	0.81							
Sex/gender diverse people	0.05	0.25	0.04	.84	1.05	0.64	1.72							
AQ	0.004	0.06	0.004	.95	1.00	0.90	1.13							
CAT-Q	0.01	0.01	7.61	.01	1.01	1.00	1.02							
Model 3								7.00	25.31	.001	.08	2.00	2.26	.32
Age	0.02	0.01	6.32	.01	1.02	1.00	1.04							
Cisgender men	1.18	1.37	0.75	.39	3.25	0.22	47.21							
Sex/gender diverse people	0.04	1.45	0.001	.98	1.04	0.06	17.83							
AQ	0.001	0.06	0.000	.98	1.00	0.89	1.12							
CAT-Q	0.02	0.01	6.72	.01	1.02	1.00	1.03							
CAT-Q x Cisgender men	-0.02	0.01	2.05	.15	0.98	0.96	1.01							
CAT-Q x Sex/gender diverse people	0.000	0.01	0.000	.99	1.00	0.98	1.02							

<sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 19**

*Hierarchical Regression Predicting Relationship Length for Those in a Current Relationship (N = 212)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 207	43.31	< .001	.46	.45				
Age	0.55	0.42	0.67	0.05	.63	.001									
Cisgender men	2.94	-0.57	6.49	1.74	.10	.11									
Sex/gender diverse people	-0.40	-2.78	1.90	1.38	-.02	.72									
AQ	0.37	-0.24	1.02	0.34	.06	.22									
Step 2							5, 206	34.91	< .001	.46	.45	1, 206	1.16	.28	.003
Age	0.57	0.42	0.69	0.05	.64	.001									
Cisgender men	3.31	-0.31	6.93	1.77	.11	.09									
Sex/gender diverse people	-0.27	-2.63	2.04	1.39	-.01	.80									
AQ	0.34	-0.27	1.01	0.34	.05	.28									
CAT-Q	0.03	-0.02	0.08	0.03	.06	.25									
Step 3							7, 204	24.71	< .001	.46	.44	2, 204	0.03	.97	.000
Age	0.57	0.43	0.69	0.05	.64	.001									
Cisgender men	1.26	-14.34	15.05	8.54	.04	.89									
Sex/gender diverse people	-0.32	-14.99	16.08	8.70	-.01	.97									
AQ	0.35	-0.30	1.03	0.34	.05	.27									
CAT-Q	0.03	-0.04	0.10	0.04	.05	.48									
CAT-Q x Cisgender men	0.02	-0.11	0.18	0.07	.07	.80									
CAT-Q x Sex/gender diverse people	0.000	-0.13	0.12	0.07	.001	.999									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.

**Table 20***Logistic Regression Predicting Employment Status in the Total Sample (n = 430)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								4.00	2.82	.59	.01			
Age	-0.002	0.01	0.09	.76	1.00	.98	1.01							
Cisgender men	-0.22	0.25	0.76	.39	0.81	.49	1.31							
Sex/gender diverse people	-0.24	0.25	0.96	.33	0.79	.48	1.27							
AQ	-0.06	0.06	1.18	.28	0.94	.84	1.05							
Model 2														
Age	-0.003	0.01	0.13	.72	1.00	.98	1.01	5.00	3.04	.69	.01	1.00	0.22	.64
Cisgender men	-0.24	0.26	0.90	.34	0.78	.48	1.30							
Sex/gender diverse people	-0.25	0.25	1.03	.31	0.78	.48	1.26							
AQ	-0.06	0.06	1.03	.31	0.94	.84	1.06							
CAT-Q	-0.002	0.004	0.22	.64	1.00	.99	1.01							
Model 3								7.00	4.27	.75	.01	2.00	1.22	.54
Age	-0.002	0.01	0.11	.74	1.00	.98	1.01							
Cisgender men	-0.48	1.31	0.14	.71	0.62	.05	8.09							
Other gender identities	-1.75	1.41	1.53	.22	0.17	.01	2.77							
AQ	-0.06	0.06	1.12	.29	0.94	.84	1.05							
CAT-Q	-0.01	0.01	0.73	.39	1.00	.98	1.01							
CAT-Q x Cisgender men	0.002	0.01	0.03	.87	1.00	.98	1.02							
CAT-Q x Sex/gender diverse people	0.01	0.01	1.16	.28	1.01	.99	1.03							

<sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 21***Hierarchical Regression Predicting Job Length for Those Currently Employed (N = 230)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 225	18.28	< .001	.25	.23				
Age	0.28	0.19	0.36	0.03	.48	.001									
Cisgender men	0.57	-1.66	2.91	1.08	.03	.64									
Sex/gender diverse people	1.86	0.03	3.64	1.06	.11	.06									
AQ	0.33	-0.12	0.79	0.23	.08	.15									
Step 2							5, 224	14.79	< .001	.25	.23	1, 224	0.88	.35	.003
Age	0.27	0.18	0.36	0.03	.47	.001									
Cisgender men	0.35	-1.89	2.74	1.10	.02	.79									
Sex/gender diverse people	1.84	-0.07	3.62	1.06	.11	.07									
AQ	0.34	-0.12	0.82	0.23	.09	.13									
CAT-Q	-0.02	-0.06	0.02	0.02	-.06	.43									
Step 3							7, 222	10.52	< .001	.25	.23	2, 222	0.13	.88	.001
Age	0.27	0.18	0.36	0.03	.48	.001									
Cisgender men	0.03	-15.13	14.86	5.54	.002	.996									
Sex/gender diverse people	-1.18	-14.56	13.33	6.11	-.07	.86									
AQ	0.33	-0.13	0.83	0.24	.08	.15									
CAT-Q	-0.02	-0.09	0.04	0.03	-.07	.48									
CAT-Q x Cisgender men	0.002	-0.10	0.11	0.05	.01	.97									
CAT-Q x Sex/gender diverse people	0.02	-0.08	0.12	0.05	.18	.63									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.











## Discussion

The current chapter aimed to partially replicate, but also extend, camouflaging research by examining associations between camouflaging intent and multiple aspects of autistic people's lives. In a large sample of formally diagnosed autistic adults with a range of sex/genders, I examined (1) relationships between camouflaging intent and indicators of social and employment outcomes, (2) relationships between camouflaging intent and indicators of psychological distress (i.e., feelings of loneliness) and mental health difficulties (i.e., symptoms of depression, anxiety, and stress) and (3) sex/gender differences in these relationships.

The majority of the current sample was comprised of cisgender women who were middle aged, diagnosed in adulthood, university educated, and resided in the global north. Consistent with research involving similar samples, the current findings suggested participants faced many social, employment, and mental health challenges (e.g., Dewinter et al., 2017; Ee et al., 2019; Gotham et al., 2015; Park et al., 2020). To this end, approximately half of the sample did not have a close friend, relationship, and/or paid employment; average scores for depression, anxiety, and stress symptoms were in the moderate to severe range; and feelings of loneliness were prevalent. Such findings are concerning given that many autistic people desire social relationships and paid employment, and that social, employment, and mental health outcomes are often linked to quality of life (e.g., Hedley, Uljarevic, Spoor et al., 2018; Orsmond et al., 2013; Mason et al., 2018). However, it is important to acknowledge that the relationships between achievement of normative outcomes such as romantic relationships and employment may not improve mental health and quality of life for all autistic people and may even be detrimental in some cases (Bishop-Fitzpatrick et al., 2016; Howlin & Magiati, 2017). Equally subjective measures of social and employment outcomes are just as, if not more, important than objective measures of social and employment outcomes and they have not been measured here (beyond feelings of loneliness).

With regard to the study aims, overall, with the one exception of relationship status, camouflaging intent was not associated with indicators of friendship, relationship, and employment

outcomes. In contrast, camouflaging intent was associated with feelings of loneliness and symptoms of depression, anxiety, and stress. No moderating effects of sex/gender were found.

### **Camouflaging and Friendship, Relationship, and Employment Outcomes**

In the current chapter, camouflaging intent was not consistently associated with friendship, relationship, and employment outcomes. When age, autistic traits, and sex/gender were controlled for, camouflaging did not predict number of friends, close friendship status, close friendship length, social isolation, relationship length, employment status, or employment length. Camouflaging intent was a significant predictor of relationships status when age, autistic traits, and sex/gender were controlled for such that higher levels of camouflaging intent were associated with an increased likelihood of being in a relationship. The strength of this relationship was however modest.

Whilst the relationship between camouflaging and the achievement of social and employment outcomes has not previously been directly examined, autistic people commonly report engaging in camouflaging in order to develop and maintain friendships and relationships and secure employment (Cage & Troxel-Whitman, 2019; Hull et al., 2017; Livingston, Shah, & Happé, 2019). My finding that camouflaging intent positively predicted relationship status is in line with such lived experience. However, due to the cross-sectional nature of the data it was not possible to determine the direction of this relationship. It may be that autistic people who engage in higher levels of camouflaging are more likely to develop romantic relationships or vice versa autistic people engage in more camouflaging in response to being in a romantic relationship.

My finding that camouflaging intent was positively related to romantic relationship status but unrelated to other social and employment outcomes requires further exploration. There is evidence to suggest that stigmatisation towards autistic people is greater when interactions involve romantic relationships compared to friendship, employment, or more general acquaintance relationships (Gillespie-Lynch, 2015; Someki et al, 2018). Thus, for autistic people, camouflaging may be more integral in securing and maintaining romantic relationships compared to friendships or

employment. Conversely, it may be that higher camouflaging intent relates to increased self-awareness, social monitoring and/or responsiveness; all of which may be more central to romantic relationships rather than friendship or employment (Collins & Ford, 2010; Sened et al., 2017). An alternative possibility is that camouflaging intent does not similarly translate into camouflaging efficacy (i.e., observable behaviour) across different relationships and environments with varying social demands and norms and in turn differentially facilitates social and employment outcomes. Whilst to date, little research has examined the relationship between camouflaging intent and efficacy, emerging evidence suggests that in experimental settings, higher camouflaging intent does not improve first impressions (Belcher et al., 2021).

### **Camouflaging, Mental Health Difficulties and Psychological Distress**

Camouflaging intent was consistently associated with indicators of mental health difficulties and psychological distress. As hypothesised, camouflaging intent predicted depressive, anxious, and stress symptoms, after controlling for age, sex/gender, and autistic traits. Additionally, camouflaging intent predicted feelings of loneliness after controlling for age, sex/gender, and autistic traits. The strongest relationships were found for stress and anxiety, however, these were still relatively modest. Such findings are in line with previous research demonstrating that camouflaging intent is associated with increased social anxiety, general anxiety, and depressive symptoms (Beck et al., 2020; Hull et al., 2019; Hull, Levy, et al., 2021) suicidality (Cassidy et al., 2018), and feelings of thwarted belonging (Cassidy et al., 2020) and provide further evidence that camouflaging is detrimental to the mental health of autistic people. However, owing to the cross-sectional nature of the research to date, the direction of these relationships cannot be determined.

There may be several potential mechanisms through which camouflaging, indicators of mental health difficulties, and psychological distress are related. It may be that the act of engaging in camouflaging behaviours and strategies increases symptoms of depression, anxiety, and stress as well as feelings of loneliness. Autistic people consistently report that camouflaging is cognitive taxing, anxiety provoking, and limits authenticity and interpersonal closeness. Similarly,

experimental research outside the field of autism suggests that for stigmatised individuals engagement in stigma concealing behaviours during social interactions is associated with decreased cognitive resources (Critcher & Ferguson, 2014; Smart & Wegner, 1999), decreased feelings of belonging and authenticity (Newheiser & Barreto, 2014), and increased emotional strain (Barreto et al., 2006), whilst for socially anxious individuals the use of safety behaviours (some of which are akin to camouflaging) is associated with increased anxiety and belief in social fears (McManus et al., 2008). Over time, the cognitive and emotional costs of frequent camouflaging may thus lead to or exacerbate feelings of social isolation and mental health difficulties (Hull, Levy, et al., 2021).

Another potential explanation is that camouflaging attempts are at least in part, a response to feelings of loneliness or mental health difficulties. Rates of loneliness and social isolation are high among the autistic population and some of the key reasons cited by autistic people for camouflaging (i.e., to develop friendship and relationships) appear to be motivated by a desire for increased social connection. Additionally, as described in Chapter 5, non-autistic people with stigmatised identities (including those with mental health difficulties) use camouflaging type behaviours to reduce the impact of their stigmatised characteristic on others' perceptions of them (Miller & Kaiser, 2006). Similarly, socially anxious people fearing negative evaluation use camouflaging type behaviours to protect or enhance their social impression (Leary & Jongman-Sereno, 2014). Thus, in managing multiple minority identities autistic individuals with mental health difficulties may utilise more camouflaging behaviours. Similarly, those with social anxiety specifically may engage in more camouflaging behaviours as a function of their anxiety symptomology.

Finally, negative social experiences including experiences of stigma and discrimination may contribute to camouflaging as well as mental health difficulties and feelings of loneliness. Experiences of devaluation, discrimination, rejection, and internalised stigma are common among autistic people and predict lower levels of wellbeing and higher levels of psychological distress (Botha & Frost, 2020). Additionally, autistic people report engaging in camouflaging in an effort to avoid devaluation, bullying, and victimisation (Cage & Troxell-Whitman, 2019; Hull et al., 2017), and

autism related stigma and acceptance (or lack thereof) is associated with both camouflaging as well as lower wellbeing (Perry et al., 2021) and depression and stress (Cage et al., 2019).

In reality, relationships between camouflaging and various indicators of psychological distress and mental health difficulties are likely to be complex and bi-directional.

### **Camouflaging and Sex/Gender**

There was no difference in camouflaging intent between cisgender women and sex/gender diverse people, but both cisgender women and sex/gender diverse people reported higher camouflaging intent than cisgender men. Sex/gender also predicted various outcomes but in regard to the significant associations described above (relationships status, feelings of loneliness, and symptoms of depression, anxiety, and stress), not being a cisgender man positively predicted relationship status only. No significant interactions between camouflaging intent and sex/gender were found for any social or employment outcome or indicator of mental health difficulties/psychological distress. Taken together, these results suggest (1) the relationship between camouflaging intent and social and employment outcomes as well as indicators of mental health difficulties/psychological distress do not differ between sex/genders; (2) differences in camouflaging intent between sex/genders may relate to differences in relationship status because cisgender women and sex/gender diverse people were more likely to be in a romantic relationship and more likely to engage in camouflaging (3) differences in camouflaging intent between sex/genders do not appear to translate into differences in feelings of loneliness and depressive, anxious, and stress symptoms.

These findings are largely in keeping with previous research examining sex/gender differences in camouflaging. Previous research suggests that those who identify as women or a non-binary gender identity report higher engagement in camouflaging intent than those identifying as men (Hull, Lai, et al., 2020; Perry et al., 2021; but see Cage and Troxel-Whitman, 2019). It may be that such differences relate to: (a) differing social expectations and pressures (Bargiela et al., 2016); (b) management of multiple marginalised identities; and (c) sex specific neural mechanisms (Lai et

al., 2019). However, given the small-to-moderate effect sizes for sex/gender differences, the real-life camouflaging experiences of these groups may be broadly similar.

Indeed, similar to the current chapter, the only other study examining the interactive effects of sex/gender and camouflaging on mental health difficulties found sex/gender did not moderate the relationship between camouflaging and depressive, social anxiety, and general anxiety symptoms (Hull, Levy, et al., 2021). Thus, our findings add to emerging evidence suggesting the real-life implications of camouflaging in terms of mental health difficulties are broadly similar across sex/genders. In contrast, the potential relationship between sex/gender, camouflaging and relationships status requires further investigation.

### **Clinical Implications**

The findings of the current chapter have important clinical implications. Rates of friendship, romantic relationships, and employment are relatively low in the autistic population. Despite this, many autistic people desire friendships, romantic relationships, and employment and use camouflaging in pursuing these. Camouflaging may lead to limited benefit in regard to social and employment outcomes and be detrimental to mental health. However, it is not clear from the current chapter if specific camouflaging behaviours or strategies differentially promote psychosocial and mental health outcomes.

Nevertheless, social interventions explicitly teaching or promoting camouflaging type behaviours and strategies may not help autistic people to achieve their psychosocial goals or promote their wellbeing. Rather, autistic people may benefit from interventions focused on identifying personally harmful social coping strategies as well as exploring and building upon personally beneficial coping strategies. Moreover, mental health interventions should assist autistic people to explore the potential contributing role of camouflaging in the development and maintenance of their mental health difficulties by, for example, exploring camouflaging behaviours and strategies that trigger or exacerbate feelings of loneliness or symptoms of depression, anxiety

and stress. Equally, systemic interventions are needed to increase acceptance and understanding among non-autistic people and decrease the pressure felt by autistic people to camouflage.

### **Strengths and Limitations**

The online format of data collection was both a strength and limitation of the current chapter. Online surveys are endorsed by members of the autistic community and enable individuals to complete data collection in their own time within familiar and comfortable surroundings of their choosing (Bradley et al., 2021). Additionally, compared to face-to-face data collection techniques, online surveys often enable a larger number of people with a wider range of experiences to participate. Indeed, using this format we recruited one of the largest samples of autistic people with non-cisgender identities in camouflaging research to date.

However, as is unfortunately common in camouflaging research, my sample was not fully representative of the autistic population because, as previously discussed, most participants were cisgender women, middle aged, diagnosed with autism in adulthood, university educated and resided in the global north. As such, there is evidence to suggest the online advertisements methods used here and in past research (i.e., Facebook, Twitter, CARD, and UK based autism charities), are limited in recruiting people outside of this very specific subset of the autistic community. Moreover, the format of online surveys likely presents a barrier to participation for some members of the autistic community. Diversification in terms of recruitment and data collection methods is needed in future research in order to attain more representative samples and generalisable results.

This chapter is strengthened by my theoretically informed data driven approach to selecting control variables. I considered a wide range of potential confounding variables by using univariate analyses to examine relationships between all variables and identify variables statistically related to both the CAT-Q and outcomes of interest. In this way, I enhanced the robustness of my findings and investigated the effect of many potential confounders (e.g., level of education, social motivation, and co-occurring conditions) not previously included in prior camouflaging research.



Further, this chapter is strengthened by a collaboration with an autistic research colleague who conducts research in the area of camouflaging. The tangible benefits of this collaboration were manifold and related to all aspects of the study. For example, collaboration promoted the selection of variables with real world significance; improved the accessibility of the survey; enabled access to additional recruitment channels; and ensured results (will be) disseminated in an ethical, respectful, and accessible manner. However, it is also important to acknowledge that in seeking to utilise inclusive, community engaged practices in line with participatory research frameworks, collaboration with a range of members of the autistic community is best practice (Cargo & Mercer, 2008; Fletcher-Watson et al., 2021) and the current chapter is limited in this regard.

To the best of my knowledge, this is the first study to examine the relationship between camouflaging and achievement of social and employment outcomes. Due to the novel and exploratory nature of the study, measures of both camouflaging and social and employment outcomes were intentionally broad. However, the relationship between camouflaging and social and employment outcomes may be more nuanced and related to mechanisms not measured here such as camouflaging intent within differing contexts, social skills, friendship, or relationships satisfaction and past employment experiences. Thus, whilst the results reported here provide initial insights, more research is needed to fully understand the impact of camouflaging on social and employment functioning.

Finally, although the intention was to conduct a longitudinal study, this was not possible due to the impact of Covid-19 and a cross-sectional design was used instead. Thus, important insights regarding causality or changes over time were unfortunately not generated.

## **Conclusions**

The results presented here further the current understanding of camouflaging by demonstrating that camouflaging is differentially associated with social, employment, psychological distress and mental health outcomes. Whilst currently unknown, the mechanism through which

these differential associations occur are likely to be complex and bi-directional. Further research is needed in this regard.

## **Chapter 7: Losing the Camouflage: It Takes Two**

### **Abstract**

Prior research suggests that autistic people sometimes associate interpersonal actions characterised by a reduction or absence of camouflaging with subjective feelings of authenticity as well as stronger positive and weaker negative affect (Chapter 4). To date, this aspect of autistic people's experience has rarely been explored. Using an online qualitative survey, the current chapter examined 133 autistic people's experiences and perspectives of socialising in ways that felt authentic to them, with a particular focus on cross-neurotype interactions and the role of non-autistic people. Using reflexive thematic analysis four themes were generated: (i) embracing diverse communication styles, interests, and perspectives; (ii) creating a more inclusive cross-neurotype social environment together; (iii) minimising and managing cross-neurotype miscommunication in mutually beneficial ways; and (iv) enjoyable interactions involving reduced anxiety and exhaustion as well as genuine connection and rapport. These findings are discussed with reference to theory and research involving the construct of authenticity both in and outside the field of autism. The knowledge generated in this chapter illuminates a previously under explored aspect of autistic people's experience and elucidates potential avenues through which to improve the social experiences and wellbeing of this group.

## Introduction

As discussed in previous chapters, camouflaging is one social coping strategy used by autistic people in an attempt to achieve social acceptance from and connection with others; often despite great personal costs to their psychological wellbeing. Authenticity is a psychological construct that may relate to both camouflaging and psychological wellbeing. Qualitative research about autistic experience indicates that camouflaging is sometimes associated with subjective perceptions of inauthenticity and, in turn, negative self-directed emotions and judgements, mental exhaustion, and difficult experiences (e.g., Hull et al., 2017). In contrast, autistic experience also suggests that interpersonal actions characterised by a reduction or absence of camouflaging are sometimes associated with subjective perceptions of authenticity as well as increased positive and decreased negative affect (Chapter 4). To date, little research exists exploring the latter of these experiences. Thus, using qualitative methodology, the current chapter presents an exploration of autistic people's experiences of socialising in ways that feel authentic to them, with a particular focus on autistic people's perspectives of cross-neurotype interactions as well as the role of non-autistic social partners.

Broadly speaking, authenticity refers to the degree to which individuals' behaviours or actions align with their 'true self' (where 'true self' is defined as one's innate tendencies and inclinations as reflected in their beliefs, values, motives, feelings, self-perception, and world view; Kernis & Goldman, 2006; Jongman-Sereno & Leary, 2018; Leary, 2003; Wood et al., 2008). Traditionally, authenticity was conceptualised as a trait, that is, a person's general disposition towards self-congruent behaviour in their daily life (Kernis & Goldman, 2006; Wood et al., 2008). However, more recent research suggests that people commonly vary their behaviour from situation to situation and, at times, act in ways that feel incongruent with their true self (Lenton et al., 2013). Thus, increasingly, authenticity is viewed as a fluctuating state-level variable. Both trait and state authenticity are associated with multiple indicators of psychological health and social functioning including positive affect, wellbeing, self-esteem, life satisfaction, and relationship quality (e.g.,

Brunell, 2010; Heppner et al., 2008; Lenton et al., 2013; Thomaes et al., 2017; Rathi & Lee, 2021). Owing to these positive associations, considerable literature explores intrapersonal (e.g., self-awareness; Kernis & Goldman, 2006) as well as interpersonal (e.g., social approval; Leary, 2003) factors thought to promote authenticity.

Qualitative research about autistic experience indicates that camouflaging is associated with subjective perceptions of inauthenticity and, in turn, negative intrapersonal consequences. Some autistic people describe differences between their 'true' or 'automatic' behaviours and their camouflaging behaviour, likening the latter to acting, performing, or playing a role (Hull et al., 2017; Livingston, Shah, & Happé, 2019). Some autistic people also feel that, over time, camouflaging interferes with identity formation and results in an uncertain or unstable sense of self (Bargiela et al., 2016; Livingston, Shah, & Happé, 2019; Miller et al., 2021). Others report that camouflaging threatens their self-perception and results in negative self-directed emotions and attitudes related to feeling fake or deceptive (Hull et al., 2017). Similarly, camouflaging is sometimes described as limiting one's own sense of connection and closeness in social relationships and, as a result, exacerbating feelings of social isolation and loneliness (Hull et al., 2017; see also Chapter 4). Despite these negative consequences, camouflaging is often described as necessary in gaining social connection and avoiding social rejection and punishment.

At the same time, camouflaging is also framed as fluctuating or context specific (Cage & Troxell-Whitman; Hull et al., 2017; Livingston, Shah, & Happé, 2019). For example, in a qualitative survey study of autistic adults and adults with self-reported social difficulties, some participants reported that their engagement in camouflaging fluctuated over their lifespan such that they camouflaged less with age (Livingston, Shah, & Happé, 2019). Additionally, in two studies exploring friendship and communication (one interview and one qualitative survey study), some autistic people explained that camouflaging was not necessary when communicating with autistic people (Crompton, Hallett, et al., 2020; Howard & Sedgewick, 2021) or accepting non-autistic people

(Howard & Sedgewick, 2021). Similarly, in another qualitative survey, participants reported camouflaging in initial stages of social relationships but feeling more comfortable revealing their 'true' selves once a connection was established (Hull et al., 2017). Finally, in a quantitative study, some participants reported camouflaging in both formal (e.g., in employment or educational settings) and interpersonal (e.g., with friends and family members) contexts whilst others reported camouflaging only in formal or interpersonal contexts (Cage & Troxell-Whitman, 2019).

Furthermore, in Chapter 4 of the current thesis, some participants reported that their engagement in camouflaging was fluctuating or context-specific and, additionally, described an experience of socialising that they explicitly characterised by a reduction in or absence of camouflaging. Specifically, these participants described enacting an interpersonal style that felt more authentic to them. Participants reflected on the role of their self-awareness and acceptance in enabling this interpersonal style yet also emphasised the importance of interacting with understanding and accepting social partners. Importantly, participants associated these social experiences with increased positive affect and decreased negative affect. These findings suggest that, similar to non-autistic people, autistic people may gain important benefits when socialising in ways that feel authentic to themselves. However, owing to the initial nature of these findings and a lack of existing research specifically focused on authenticity, further, more targeted, exploration is required.

In exploring autistic people's experience of socialising in ways that feel authentic to them, it is important to consider cross-neurotype interactions and the role of non-autistic social partners. Interpersonal perspectives of authenticity suggest that the degree to which an individual feels free to act authentically in a particular context reflects the degree to which they feel others within that context value and accept their true self (Leary, 2003). Thus, it is important to specifically explore cross-neurotype contexts, given that autistic people are a minority group and as such many of their everyday social experiences involve cross-neurotype interactions. Further, as outlined by the double

empathy problem, non-autistic people experience difficulties understanding and communicating with autistic people and form more negative judgements about and less positive behavioural intentions towards autistic people (Milton, 2012). Such issues likely influence the degree to which autistic people feel free to engage in ways that feel authentic to them during cross-neurotype interactions. Thus, the current chapter explores autistic people's experiences of socialising in ways that feel authentic to them, with a particular focus on autistic people's perspectives on cross-neurotype interactions as well as the role of non-autistic social partners.

### **Reflection on Terminology**

The language used by researchers can powerfully shape people's beliefs, understanding, and position on a topic in both helpful and unhelpful ways (Lawson, 2020). Thus, in presenting this previously under researched aspect of autistic people's experience, it is important to make explicit my position and decision making regarding the use of the term 'authenticity'. Autistic people have been, and continue to be, harmed by unhelpful stereotyped views of what autism "looks like" (e.g., Bargiela et al., 2016; Pearson & Rose, 2021). In this chapter, I do not mean to imply there is a correct, valid, or authentic way of being *autistic*. Rather this chapter presents an exploration of individuals' experiences of socialising in ways that feel authentic to *them* as individuals. The term authentic was chosen for several reasons. First, this is the term used in psychological literature to describe a subjective experience of congruence between one's actions and true self. Second, within qualitative research and autistic people's writings (e.g., Blackwater, 2022; Wiltshire, 2021), this term has been used to describe a social experience that contrasts camouflaging. Finally, a subset of participants in the current study were consulted and provided positive feedback regarding the appropriateness of this term. However, given the early stage of this research field, I acknowledge it is important to continue to learn from the autistic community regarding the usefulness and appropriateness of this terminology.

## Method

### Participants and Recruitment

Participants were recruited via the Cambridge Autism Research Database (an existing database of formally diagnosed autistic adults in the UK; <https://www.autismresearchcentre.net/>). Individuals were eligible to take part in the study if they meet the following inclusion criteria: (1) aged over 18 years; (2) formally diagnosed with autism by a health care professional and/or multidisciplinary team; (3) living in the UK.

One hundred and seventy-eight people engaged with the survey; 133 (74.7%) completed all questions forming the current sample. Fifty-eight (43.6%) participants identified as women, 57 (42.9%) as men, 12 (9%) as non-binary or used other gender terminology, and 6 (4.5%) preferred not say. Of those who reported both their sex and gender, 15 (11.3%) identified with a gender that differed from their sex designated at birth. Participants' ages ranged from 18 to 68 years ( $M = 46.15$ ,  $SD = 15.67$ ) whilst age at diagnosis ranged from 3 to 68 years ( $M = 38.55$ ,  $SD = 16.93$ ). The AQ-10<sup>8</sup> was used to give an estimation of autistic traits within the sample (AQ; Allison et al., 2012). Most ( $n = 118$ ; 88.7%) participants scored above the clinical cut off ( $M = 8.08$ ,  $SD = 1.97$ ). Further characterisation of the sample is provided in Table 26. The majority of the sample was white, university educated, and currently engaged in employment or study. The majority of the sample indicated a preference for identity-first language but a sizeable minority ( $n = 50$ ; 36.1 %) preferred person-first language or other terminology. Endorsement of co-occurring conditions or mental health diagnoses was common.

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<sup>8</sup> The AQ-10 was not used to determine eligibility for the study as it is a brief screening measure with less than perfect sensitivity and specificity.



**Table 26***Participant Characteristics*

	<i>N (%)</i>
<b>Ethnicity</b>	
White	119 (89.5)
Black	1 (.8)
Asian	1 (.8)
Mixed	10 (7.5)
Other	2 (1.5)
<b>Education</b>	
No qualifications	4 (3.0)
GCSE (school based 14-16 years)	8 (6.0)
A levels (school based 16-19 years)/level 3 or 4 diploma/foundational degree	25 (18.8)
University education (undergraduate or postgraduate)	91 (68.4)
Other	5 (3.8)
<b>Occupation</b>	
In paid employment (full or part time)	59 (44.4)
In voluntary employment	7 (5.3)
Not employed but looking for employment	10 (7.5)
Unable to work due to disability or illness	21 (15.8)
Full time carer	3 (2.3)
Retired	15 (11.3)
Studying	8 (6.0)
Other	10 (7.5)
<b>Co-occurring conditions (lifetime)</b>	
Intellectual or learning disability	16 (12)
ADHD	28 (21.1)
Hearing impairment	13 (9.8)
Vision impairment	12 (9.0)
Physical disability	12 (9.0)
Medical or chronic health condition	27 (20.3)
Genetic condition	8 (6.0)
Other condition	23 (17.3)

**Table 26 Con't,**

## Participant Characteristics

	<i>N</i> (%)
Mental health diagnoses (lifetime)	
Mood disorder	64 (48.1)
Anxiety disorder	66 (49.6)
Addictive disorder	2 (1.5)
Eating disorder	17 (12.8)
Personality disorder	13 (9.8)
Schizophrenia	2 (1.5)
Other mental health condition	10 (7.5)
Terminology Preference	
Autistic person	83 (62.4)
Person with autism	29 (21.8)
Other terminology	19 (14.3)
Preferred not say	2 (1.5)

*Note.* Percentages may not sum to 100% because of rounding. Co-occurring conditions, and mental health diagnoses categories are not mutually exclusive. Other terminology included terminology such as, “Asperger,” “Aspie,” and “neurodivergent.”

**Survey Development**

Participants completed an online, qualitative survey. This method was chosen because, similar to other forms of qualitative methods, qualitative surveys yield rich and in depth accounts of participants’ experiences and perspectives (Braun & Clarke, 2013). Further, compared to other forms of qualitative data collection, online surveys have several advantages. First, online qualitative surveys provide a ‘wide-angle’ lens on a topic by capturing a diverse range of accounts (Toerien & Wilkinson, 2004); especially useful in instances like the current chapter in which the population of interest is diverse and little is known about the research topic (Braun et al., 2021). Second, online qualitative surveys are accessible for autistic people, particularly those who may find intensive face-to-face research prohibitive due to social, time, travel, or other demands. Third, online qualitative surveys allow people to complete data collection in their own time within familiar and comfortable surroundings of their choice (Terry & Braun, 2017). Fourth, the relatively anonymous mode of responding to online qualitative surveys may assist in empowering autistic people, who as a group have experienced significant social marginalisation within the research world, to express views that challenge the research and researchers (e.g., views on the survey design, question wording, or the

perceived research agenda; Braun et al., 2017, 2021; Terry & Braun, 2017). Fifth, the use of online surveys has been endorsed by members of the autistic community (Bradley et al., 2021).

I developed the qualitative survey in consultation with members of the autistic community. Initially, one autistic community member provided their opinion regarding the proposed study including research aims, questions, and methods. I then developed an initial set of questions. An autistic research colleague of mine then provided informal feedback on these questions. Next, these questions were further developed and refined based on information gathered during semi-structured cognitive interviews with six autistic people (four women and two men). Cognitive interviewing is a qualitative methodology used in survey design to examine how people interpret and respond to questions with respect to their idiosyncratic lives, experiences, and knowledge (Miller, 2014). In doing so, the aim of cognitive interviewing is to identify and rectify any problems associated with a survey by exploring: (1) constructs considered by participants in answering questions, (2) if and why participants experience difficulties answering questions and, (3) if and why particular participants interpret questions differently. The use of cognitive interviewing in developing the current survey was considered important in ensuring the quality of data collected. Whilst the use of online surveys with autistic people is recommended (Crane, Sesterka, et al., 2021; Nicolaidis et al., 2019), in practice the use of online qualitative questionnaires is relatively novel, and thus little is known regarding the ways in which autistic people interpret and respond to qualitative questions presented in this format.

The protocol for cognitive interviews used in the current study was developed based on prior research with non-autistic adults (Willis, 2005). I interviewed each participant individually via Microsoft Teams for approximately 90 minutes. Using screen share, participants were shown each survey instruction and question in turn. They were instructed to read each instruction or question silently and then answer the question aloud. Based on their responses, participants were asked a range of follow-up questions to identify potential problems with the survey as well as solutions to problems. For example, if a participant's response indicated the question was not readily

comprehensible, they were asked, “How would you word this question?” or “How would you improve this question?” After each interview, based on the feedback provided, questions were reworked and refined before being presented to the next participant. Each autistic person interviewed was reimbursed for their time (via a voucher). Supplementary information regarding the cognitive interview protocol is provided in Appendix N.

The final survey consisted of open and closed-ended questions regarding participants’ experiences of socialising in ways that felt more or less authentic to them. Given the abstract nature of the study topic, and on the basis of feedback, a small number of initial questions focused on participants’ experiences of socialising in ways that felt less authentic to them (i.e., experiences of camouflaging). The remaining questions then focused on participants’ experiences of engaging in ways that felt authentic to them. These questions related to experiences and descriptions of socialising that felt authentic, benefits and risks associated with authentic-feeling socialising, and enabling factors and contexts for authentic-feeling socialising. See Appendix O, for a full list of questions.

The survey additionally included closed-ended questions to collect participant demographics, as well as the ten-item AQ (Allison et al., 2012). Additional space was provided after each closed-ended question for participants to provide more detailed responses or clarifying information, should they wish. Additionally, to enhance transparency, de-brief information was provided at the end of the survey explaining the rationale behind collecting particular demographic information and using a standardised measure.

### **Procedure**

Ethical approval was obtained from University College London Research Ethics Committee (approval ID number:14839/003 see Appendix P). Individuals on the CARD were invited to take part via an email containing relevant information about the study as well as a link to the online survey (entitled ‘Survey of Autistic People’s Social Experiences’). Upon following the link, participants read a

participant information sheet, provided informed written consent, and completed the survey. After completing the survey, participants could choose to enter a draw to win an iPad.

### **Data Analysis**

Survey responses were analysed thematically within a critical realist framework (Maxwell, 2012) following the reflexive thematic analysis approach developed by Braun and Clarke (2006, 2013, 2019; Terry et al., 2017). Thematic analysis was chosen because it offers the possibility of an inductively developed analysis involving both semantic (surface) and latent (implicit) meaning in the data set; important in examining a complex social phenomenon that is located within a wider social system yet also arises from and impacts upon an individual's internal experiences. Further, given its theoretical flexibility, the reflexive thematic analysis approach allows for analysis to be informed by critical realism.

The analytic process was recursive and involved data familiarisation, coding, theme development, and review. I read and re-read all survey responses, noting down and reflecting on my initial thoughts and reactions. Next, using NVivo 12 I generated codes based on similarities, contradictions and disputations in the data. I then conducted a second coding of the data set, through which initial codes were revised. In collaboration with LC and WM, I then grouped codes together to form candidate themes. Next, candidate themes were recursively returned to, check against coded data, and revised four times. Final themes were refined, defined, and named. Examples of the reflexive thematic analysis process are provided in Appendix Q.

WM, LC, and I engaged in various forms of reflective practice throughout the study. We met regularly throughout the conception/survey development stages, data collection, data analysis, and writing phases of the study to track and reflect upon the manner in which our knowledge, experiences, and assumptions shaped the study. With regard to data analysis specifically, we conducted a bracketing interview (Fischer, 2009) prior to the data analysis, in which we reflected upon: our knowledge and assumptions about camouflaging; what we did and did not expect to find in the data; and our prior knowledge and experiences that lead us to develop these

expectations. We then recursively returned to and reflected upon these questions throughout data analysis in order to interrogate the meanings we placed on data.

Additionally, I completed reflexive journaling throughout the study. Through this journaling I reflected on my role in the research process and the manner in which way my prior knowledge, assumptions, and experiences shaped the study. Additionally, specifically in relation to data analysis, I noted my responses to and understanding of the data; interrogated the manner in which my prior knowledge, assumptions, and experiences shaped these responses and understanding; and then revisited my understandings and interpretation of the data. Illustrative extracts of this reflexive journal are provided in Appendix Q.

### **Member Reflections**

To ensure results were reported in an ethical and respectful manner (Braun & Clarke, 2022), ten participants provided feedback on a version of the below themes (written in layperson language). These participants were reimbursed for their time (via a voucher). On the basis of this feedback, one synonym for the term 'authentic' was removed from the results because one participant felt it could potentially be associated with harmful stereotypes about autism.

### **Results**

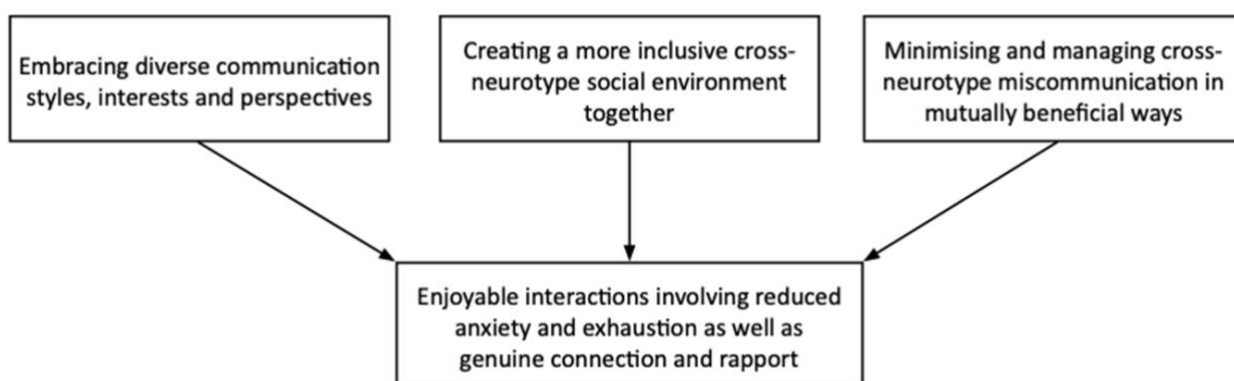
The aim of the current analysis was to explore autistic people's experiences of socialising in ways that feel authentic to them with a particular focus on autistic people's perspectives on cross-neurotype interactions as well as the role of non-autistic social partners. Results demonstrated that the degree to which participants felt they could safely and enjoyably engage in a manner that felt authentic to them was related to the interpersonal behaviour of their social partners. Most participants had been "rejected," or worse "bullied," and "attacked" by non-autistic others for being their true selves. And yet, within some social relationships, usually with understanding and accepting autistic and non-autistic friends, family, or romantic partners, the majority of (but not all) participants described experiencing enjoyable and satisfying interactions in which they engaged in ways that felt authentic to them. Participants described behaviours non-autistic people used (or

should use) in facilitating the kind of safe, comfortable, and enjoyable cross-neurotype context required for them to socialise in ways that felt authentic. In this way, participants' experiences of socialising in ways that felt authentic to them appeared to be best understood as an interpersonal process, dependent on the actions of all social partners involved.

In the following four themes, I explore participants' perspectives of socialising in ways that felt authentic to them, within the context of safe, comfortable, and enjoyable interactions. As can be seen in Figure 3, these themes relate to: (i) embracing diverse communication styles, interests, and perspectives; (ii) creating a more inclusive cross-neurotype social environment together; (iii) minimising and managing cross-neurotype miscommunication in mutually beneficial ways; and (iv) enjoyable interactions involving reduced anxiety and exhaustion as well as genuine connection and rapport. Illustrative quotes for each theme are provided in the text. Participants are identified via a number included after quotes.

**Figure 3**

*Overview of Themes*



### **Embracing Diverse Communication Styles, Interests, and Perspectives**

Participants described being aware that their communication styles, interests, and perspectives were often different from their peers beginning in childhood or adolescence. Self-acceptance of one's differences was often associated with feeling "allowed" or "permitted" to engage in ways that felt more authentic: "I started accepting myself more which translated into allowing myself to be myself more." (65)

Diagnosis was often described in relation to increasing self-acceptance. Before having an autism diagnosis, some participants viewed their autistic characteristics and traits as indicative of personal failure or even flawed character. The validation and explanation for their differences, provided by a diagnosis, allowed some participants to challenge these negative self-conceptualisations and in turn improve their self-acceptance and confidence: "Since my diagnosis I feel like I am not bad or stupid or an alien so I should just be me." (45)

However, it appeared self-acceptance alone was not sufficient in enabling interactions that felt authentic. Rather, a mutual understanding that multiple, valid communication styles exist was seen as essential in enabling authentic-feeling interactions. Participants spoke of wanting non-autistic social partners specifically to understand and accept differences in autistic and non-autistic communication and to refrain from applying non-autistic interpretations to autistic communication. Participants valued non-autistic social partners who refrained from criticising, commenting on, or making fun of autistic communication: "Accept there are a multitude of communication 'styles,' that their's [non-autistic people's] is not the default, and that that people that may deviate from their's are not, automatically, without doubt, being rude." (11)

Participants spoke of the importance of non-autistic social partners not explicitly or implicitly "encouraging", "expecting," or "insisting" autistic people use non-autistic social behaviours. For example, one participant explained: "do not demand eye contact even in non-verbal ways." (84)



Participants reflected that with such mutual understanding and acceptance (within same or cross-neurotype contexts), they reduced the extent to which they monitored and censored themselves in interactions. Instead, they engaged in a more “spontaneous,” “open,” and “free” manner and used more comfortable of eye contact, directness (e.g., “shorter, more direct responses to questions” [11]), reciprocity (e.g., “talk as or when I want” [110]) or repetitive movements (e.g., “stim by making noises, tapping my fingers on my hand or fidgeting” [13]). As one participant explained:

“It allows me some (not total) relaxation of the self-monitoring, such that I am able to let out all the stuff that I have been actively restraining under tight-laced ‘suitable behaviour’ corsets, often for a period of several, or many weeks.” (4)

A mutual openness to and acceptance of differing interests, perspectives, and sense of humour was additionally viewed as essential in enabling socialising that felt authentic. With such openness and acceptance (within same or cross-neurotype contexts), participants spoke more freely about their interests and hobbies, shared their opinions, and showed their sense of humour: “I talk more about things I am interested in, which I might be too embarrassed to do with other people and I make really bad jokes.” (48)

### **Creating a More Inclusive Cross-Neurotype Social Environment Together**

Many participants possessed a strong awareness of their distinctive social needs and preferences as well as the manner in which predominately non-autistic environments could be accordingly adapted to better suit these. As in the previous theme, gaining an autism diagnosis increased some people’s understanding and acceptance of their social needs and preferences as well as potentially helpful and unhelpful coping strategies. However, a small number of participants described difficulties engaging in ways that felt authentic or natural to them owing to a perceived lack of awareness of their needs:

“The trouble is that I am so used to doing what others want that I nearly (98%) go along with what others want. For them to start considering me and what I want would leave me at a loss as I am no longer sure what I would want.” (34)

Many participants considered and arranged environmental adaptations they required prior to cross-neurotype social interactions. For example, participants described asserting their social needs and preferences by choosing to socialise in certain environments, with a certain number of people, for a certain length of time: “In my social life, I keep meetings on my terms- places I feel relaxed, quiet, comfortable- I plan everything.” (41)

Participants also communicated or asserted their social needs and preferences during cross-neurotype social interactions as necessary.

“I ask for sounds to be turned down, for example my partner’s mum always has the radio on when we visit and I always ask for it to be turned down or I can’t engage because it bothers me to have noise in the background.” (3)

In creating an inclusive cross-neurotype social environment, participants emphasised the importance of non-autistic social partners understanding and accepting autistic ways of being in, and experiencing, the world. Participants valued non-autistic social partners who listened to and empathised with their experiences, especially their unique difficulties: “Listen, and let me explain. Accept my explanation.” (109)

Participants also wanted non-autistic people to actively participate in this process by asking participants about their difficulties and needs: “Ask me what I need. Ask what they [non-autistic social partners] can do to help.” (15). Additionally, participants spoke of the importance of non-autistic social partners respecting boundaries. Participants wanted non-autistic people to refrain from “persuading,” “pushing,” or “cajoling” them to go beyond their limits: “Accept it if I say I’m tired and should go home at 10pm, instead of trying to talk me out of it.” (47)

### **Minimising and Managing Cross-Neurotype Miscommunication in Mutually Beneficial Ways**

Participants' spoke of their difficulties understanding the social communication and expectations of non-autistic social partners. Often, when engaging in ways that felt authentic to them, participants sought to gain understanding immediately by asking non-autistic others for clarification or feedback: "I'm able to say if I don't understand something that's happened, or if they're making a facial expression that doesn't make sense to me, or if I don't get a joke." (105)

In responding to such requests, participants highlighted the importance of non-autistic social partners being amenable to providing additional or alternative explanations: "Be generous with your time and information if I ask please to explain things." (75) Participants further reflected that their challenges in understanding non-autistic social partners were reduced when non-autistic social partners were clear and explicit in communicating their thoughts, feelings, and intentions. For example, one participant explained that non-autistic social partners should avoid, "using unclear language or relying solely on body language to get a message across." (78)

At the same time, participants' accounts suggested that non-autistic social partners also experienced difficulties understanding participants' social expectations and communication. In these instances, participants felt it was important that non-autistic social partners held them in positive regard if feeling confused by their specific behaviours:

"Take my interactions at face value and work with the default assumption I am honest and will-intentioned, not that there is a hidden meaning to anything I say, or that I am deliberately rude or [I] think badly of them if I don't react in the way they necessarily expect."(91)

Participants also reported that it was helpful for non-autistic social partners to avoid making assumptions and instead ask for clarification: "Ask me for clarification if something I say or do doesn't make sense to them, instead of making assumptions that might hurt our relationship." (72)

### **Enjoyable Interactions Involving Reduced Anxiety and Exhaustion as well as Genuine Connection and Rapport**

Authentic-feeling social interactions within the context of safe, comfortable, understanding and accepting same or cross-neurotype contexts, were described as positive experiences that participants enjoyed rather than “endured”: “Its like being set free, in a way. Not having to pretend. Sometimes, one can even have fun!” (70)

When engaging in ways that felt more authentic to them, participants also described feeling, “more relaxed,” and “less anxious” or “less stressed”. Participants associated these emotional improvements with a reductions in: the sense of pressure and expectation they felt to conform socially (e.g., “less stress and anxiety to try to conform and fit in” [28]); their use of camouflaging behaviours; and fears they held about being exposed as a social outsider (e.g., “being more relaxed and not being scared that the camouflage will be lifted somehow” [109]).

However, a few participants spoke of continuing to experience anxiety when engaging in ways that felt more authentic to them, owing to fears of negative interpersonal outcomes. In this way, these participants appeared to be particularly attuned to risks of socialising in ways that felt authentic to them. As one participant explained, “[I] worry at times afterwards about how I appeared” (52).

Socialising in ways that felt authentic was described as being less cognitively demanding and exhausting than camouflaging: “It doesn’t require constant concentration and high levels of energy.” (65) As a result, when engaging in ways that felt more authentic to them, some participants felt they had increased capacity to focus and engage.

“I’m able to devote more of my mental energy to whatever I am supposed to be doing rather than spending most of my time thinking about how autistic I appear so I’m able to perform better in academic contexts and to listen better and respond more fully in social contexts.” (108)

Other participants described an increased capacity to cope with day-to-day challenges or difficulties that arose: “When not masking, I am able to deal better with challenges such as something unexpected. I attribute this to having spare brain power to do so.” (45) Authentic socialising also appeared to strengthen participants’ personal relationships. Participants described authentic-feeling socialising as improving their ability to form more “genuine” connections and rapport with others who appreciated and valued them for their true selves.

“Being authentic also gives me a sense of connectedness and helps to foster friendships because I am revealing my true self rather than a boring mask, so the people who like the real me with gravitate towards me.” (66)

### **Discussion**

Authenticity is a subjective feeling of congruence between one’s actions and true self (where true self is defined as one’s innate tendencies and inclinations as reflected in their beliefs, values, motives, feelings, self-perception, and world view; Kernis & Goldman, 2006; Jongman-Sereno & Leary, 2018; Leary, 2003; Wood et al., 2008), which positively relates to indicators of psychological health including subjective wellbeing, life satisfaction, meaning in life, and self-esteem (e.g., Brunnel, 2010; Heppner et al., 2008; Lenton et al., 2013; Thomaes et al., 2017; Rathi & Lee, 2021). Prior research suggests that some autistic people associate camouflaging with subjective feelings of inauthenticity and, in turn, negative emotions and experiences (Hull et al., 2017). In contrast, some autistic people associate interpersonal actions characterised by a reduction or absence of camouflaging with subjective feelings of authenticity as well as positive emotions and experiences (see Chapter 4). To date, research in this area has predominately focused on autistic people’s experiences of camouflaging. Here, in contrast, I present an exploration of autistic people’s experiences and perspectives of socialising in ways that feel authentic to them, with a particular focus on cross-neurotype interactions as well as the role of non-autistic social partners.

### What Feels Authentic?

In recounting their experiences of socialising in ways that felt authentic to them, participants commonly described engaging in specific behaviours or processes; many of which appeared to contrast camouflaging. Of note, participants described decreasing their self-monitoring and censoring; increasing their self-disclosure; enacting more comfortable (and seemingly autistic) levels of eye contact, directness, reciprocity, and repetitive movements; and actively communicating and asserting their social needs and preferences. These findings echo descriptions of authentic-feeling behaviours found within previous qualitative research examining autistic people's experiences of camouflaging, communication, and friendship (Crompton, Hallett, et al., 2020; Howard & Sedgewick, 2021; Schneid & Raz, 2020; see also Chapter 4). Moreover, participants' experiences are consistent with broader research on felt authenticity which demonstrates that for people with stigmatised identities, identity enactment (i.e., engaging in identity-congruent behaviours) facilitates felt authenticity whereas identity concealment (i.e., hiding one's identity) reduces self-disclosure and impedes felt authenticity (Crabtree & Pillow, 2020; Newheiser & Barreto, 2014). Similarly, participants' experiences align with experimental research involving people with social anxiety, which suggests that reductions in the use of safety behaviours (e.g., avoiding self-disclosure, suppressing emotions, or presenting an alternative self - perceived to be more socially acceptable) increases felt authenticity (Plasencia et al., 2016).

Interestingly, authentic-feeling social behaviours involving self-disclosure (i.e., talking about one's interests, sharing opinions, and showing one's sense of humour) parallel several Active Self-Presentation *camouflaging* behaviours described in Chapter 5 of this thesis (e.g., disclosing personal information, using jokes, and humorous anecdotes). Such a finding is not necessarily contradictory, rather it may indicate that different autistic individuals or even the same individual can use the same social behaviour to achieve different goals in different contexts for different reasons; an issue also highlighted in broader interpersonal literature (McManus et al., 2008). For example, depending on the context and the individual, the behaviour of sharing information about a particular hobby could

be used primarily to signal proximity to neurotypicality or to reveal an aspect of one's identity. Consequently, this finding highlights the importance of considering motivation in the relationship between enacted social behaviours and intrapersonal consequences for autistic people. Moreover, this finding suggests limitations in self-report measures of camouflaging that rely (in part) on people endorsing specific behaviours (e.g., CAT-Q, sample item; "When in social situations, I try to find ways to avoid interacting with people") without consideration to their context or motivations (Hull et al., 2019).

### **Benefits of Socialising in Ways That Feel Authentic**

Participants reported that within the context of comfortable and accepting interactions, socialising in ways that felt more authentic to them was associated with more positive interpersonal and intrapersonal consequences than camouflaging. Specifically, social behaviours that felt authentic were associated with increased feelings of relaxation and decreased feelings of anxiety and stress; reduced feelings of cognitive exhaustion and, in turn, an increased capacity to focus, engage, and manage day-to-day stressors; and increased feelings of interpersonal connection and rapport. These findings are consistent with qualitative research on autistic experience that suggests authentic-feeling social behaviours occur within same-neurotype or understanding cross-neurotype relationships and that such relationships are associated with beneficial consequences (Crompton, Hallett, et al., 2020; Howard & Sedgewick, 2021; see also Chapter 4). Further, these findings align with extant literature outside the field of autism research, demonstrating that felt authenticity is positively associated with positive emotions (particularly contentment and relaxation; Lenton, et al., 2013) and more satisfying, higher quality, social relationships (Brunell et al., 2010; Le & Impett, 2013; Peets & Hodges, 2017). Authenticity is also negatively associated with mental exhaustion (Huppertz et al., 2020; Van den Bosch & Taris, 2014, 2018). Thus, enabling autistic people to engage in ways that feel authentic to them may, in turn, lead to improved social experiences and psychological wellbeing. In this regard, the current findings suggest both intrapersonal and interpersonal factors may be important.

### **Intrapersonal Factors Associated with Authentic-Feeling Socialising**

Prominent psychological theories suggest self-awareness and acceptance foster authenticity, which, in turn, facilitates wellbeing (Kernis & Goldman, 2006 see also Wood et al., 2008). Consistent with these theories, participants' accounts suggested that having an awareness and acceptance of their social needs and preferences, along with skills in effectively communicating and asserting these needs and preferences, was central in enabling them to socialise in ways that felt authentic. Thus, autistic people may benefit from interventions that target these skills using, for example, self-advocacy, self-compassion, or mindfulness frameworks. Such interventions may provide an alternative to social skills programs; commonly implemented to improve the quality of autistic people's social experiences and wellbeing despite attracting criticism for attempting to 'normalise' autistic people (Bottema-Beutel, 2018) and because they demonstrate limited effectiveness (Lorenc et al., 2018).

Additionally, for some but not all participants, gaining an autism diagnosis was seen as enhancing the development of their self-awareness and acceptance as well as their self-advocacy skills. However, it is important to note that it was often unclear if such positive effects related to the provision of a diagnostic label (and, in turn, access to information, support and community, for example) or the actual diagnostic process per se, and that prior research suggests autistic people are often dissatisfied with the later (e.g., Crane et al., 2018; Jones et al., 2014; Lewis, 2017). Regardless, these insights add to extant literature demonstrating the importance of access to timely diagnosis in improving the lives of autistic people, especially those who may be at particular risk of camouflaging their innate autistic characteristics and difficulties, including girls and women, people from minority ethnic groups, and other marginalised people (Bargiela et al., 2016; Crane et al., 2018; Huang et al., 2020; Lilley et al., 2021; Mandy et al., 2022; Zuckerman et al., 2014). Moreover, these findings suggest that the point of diagnosis may be a particularly helpful time to implement interventions discussed above, beginning during the diagnosis process (i.e., via diagnostic feedback) and continuing via post-diagnosis support.



### **Interpersonal Factors Associated with Authentic-Feeling Socialising**

Alternative, equally prominent interpersonal perspectives on authenticity differentially emphasise the role of interpersonal factors in facilitating authenticity and wellbeing (see Leary 2003, see also Wallace et al., 2012). Specifically, interpersonal theories of authenticity suggest that people behave in inauthentic (as opposed to authentic) ways because they are concerned about achieving social belonging, value and acceptance; and when they believe that within their current context, their true self will result in disapproval, rejection, or punishment from others (Leary, 2003). Accordingly, another reason authenticity positively relates to psychological wellbeing is because individuals who feel able to behave authentically are (more likely) located within interpersonal contexts in which they can achieve belonging and acceptance from others by simply being themselves.

In line with interpersonal perspectives, many participants' accounts suggested that they only felt able to engage in ways that felt authentic to them within the context of safe, comfortable, understanding, and accepting relationships. Consequently, improvements in the social experiences and wellbeing of autistic people will likely be facilitated via access to social contexts that value neuro- and other forms of diversity. In this regard, programs utilising peer-support or mentoring frameworks may be particularly effective (Crompton et al., 2022; Lemmi et al., 2017; Lorenc et al., 2018). Equally, interventions targeting non-autistic people, aimed at reducing autism-related stigma will likely be beneficial at improving the wider, overarching societal context (Gillespie-Lynch et al., 2015; Jones et al., 2021).

Participants described interpersonal communication behaviours that they felt non-autistic people should utilise in creating the kind of safe, comfortable, understanding and accepting relationships required to cultivate authenticity. Specifically, participants described the importance of non-autistic people being able to seek information about other people's communication styles, needs and preferences (e.g., asking questions, active listening); non-autistic people understanding their own social communication style, needs and preferences and perceiving the impact of these

upon others (e.g., reflection, monitoring); and non-autistic people adapting their communication accordingly (e.g., being more explicit or reducing reliance on non-verbal communication). These accounts highlight the influence of bi-directional differences in social communication style and reciprocal challenges in understanding on the quality of cross-neurotype interactions (i.e., the double empathy problem; Milton, 2012). Additionally, whilst a dearth of research examines cross-neurotype communication skills required by non-autistic people in facilitating mutually satisfying interactions with autistic people, the current findings are in line with a small body of qualitative research suggesting autistic people view non-autistic people's ability to use direct, open and clear communication as important factors (Brownlow et al., 2021). Consequently, the current findings also suggest that, in ensuring autistic people can access supportive environments that promote authenticity and wellbeing, there may additionally be a need for interventions aimed at improving non-autistic people's ability to effectively communicate with autistic people. Exploring existing frameworks and interventions that aim to improve communication between different cultural and other social groups may be useful in developing such interventions (e.g., Arasaratnam, 2012; Hagqvist et al., 2020; Rasmussen & Sieck, 2015).

### **Strengths and Limitations**

The method of data collection used in the current chapter represents both a strength and limitation. Foremost, the potential of online qualitative survey method (discussed in the methods), was realised, such that high quality, in-depth and rich data about a range of experiences and perspectives was produced. However, owing to the fixed format of surveys, aspects of the data could not be further explored or clarified via the use of follow-up questions (as in face-to-face research).

Additionally, similar to Chapter 6, the current sample was mostly white, university educated, engaged in employment or study, and diagnosed in adulthood. Given that men are often underrepresented in camouflaging research, I advertised the study via the CARD only (and not Facebook, Twitter, and UK based autism charities, as in Chapter 6) in an effort to increase the

number of participants who were men. Whilst this strategy was successful, with an approximately even number of men and women taking part, diversity in other respects remained limited. Due to this lack of diversity, the current sample was not representative of the wide spectrum of people who identify as autistic.

The rigour of the current chapter is strengthened by the inclusion of multiple autistic perspectives. The use of qualitative methodology centred autistic perspectives. Importantly, autistic people were also consulted at multiple stages of the project including during formation and design of the study, as well as prior to dissemination. The tangible benefit of consultation included improvement in: the real-world relevance and validity of the project and findings; research methods; and ethical, respectful, and effective dissemination. Of note, consultation during the formulation of the study alerted me to the care and sensitivity with which the term 'authentic' needed to be used as well as potential dangers of combining the words authentic and autistic. Further engagement with autistic people during the design phase, and prior to dissemination, increased the likelihood that my final terminology was accurate, interpretable, and respectful in both academic, autistic, autism, and general community contexts. Additionally, consultation during survey development yielded important insights into the ways autistic people interpret and respond to qualitative questions presented in an online format. This is also allowed me to identify and rectify problems with the survey and, in turn, improve the quality of data collected. Finally, consultation prior to dissemination limited the potential for my results to cause harm to the autistic community. Moreover, this consultation yielded important insights into real world usefulness and validity of our findings. In this regard, the sentiment towards the study results as well as the entire study process was generally positive. In noting this, I acknowledge there is always a power imbalance between participants and researchers, and some participants may have felt compelled to provide positive feedback.

The limitations of this chapter include the absence of autistic academic co-investigators. A lack of autistic input during data analysis is of particular note. The quality of the thematic analysis was ensured via considered, reflexive, immersive and extended engagement with the data (Braun &

Clarke, 2022). Specifically, analysis was conducted over an extended period of four months; the ways in which my (as well as LC's and WM's) prior knowledge, assumptions and experiences influenced the analysis were interrogated via reflexive journaling, a bracketing interviewing and group discussion; and although I led analysis, interpretation was deepened via our collaborative engagement in analysis. However, involving an autistic collaborator would have illuminated an additional and important perspective on these data, thereby deepening the interpretation further.

### **Conclusions**

The current chapter details autistic people's experiences and perspectives of socialising in ways that feel authentic to them, within the context of safe, comfortable and enjoyable interactions. Participants described a more authentic-feeling interpersonal style characterised by a reduction or absence of camouflaging, which they associated with increased positive affect and decreased negative affect. Having an awareness and acceptance of one's social needs and preferences, as well as skills in effectively communicating these, enabled participants to socialise in ways that felt authentic to them. However, the degree to which participants felt free to engage in ways that felt authentic to them was related to the interpersonal behaviours of their social partners. These findings resonate with existing theories and research on authenticity as well as the double empathy problem. Taken together, insights generated here make a significant contribution to a previously under-researched aspect of autistic people's experience and illuminate a potential avenue through which to improve the social experiences and wellbeing of this group.

## Chapter 8: General Discussion

Increasingly, disability in relation to autism is conceptualised as the result of a complex interplay between an individual and society, that is, a poor fit between the characteristics of a neurodivergent person and an unaccommodating, predominately non-autistic sociocultural environment (Lai et al., 2020). One line of research that emerged from this perspective and aligns with the autistic community's research priorities is that of social coping, that is, strategies and behaviours used by autistic adults to adjust to, cope within, and influence the predominately non-autistic social environment, encompassing elements of both camouflaging and authentic-feeling socialising. Prior to this thesis, most of this research examined camouflaging, i.e., strategies and behaviours that may enable autistic people to (consciously or unconsciously) present a seemingly non-autistic social style, hide autistic characteristics, and/or minimise the visibility of social difficulties and thereby adapt to, cope within, and influence the predominately non-autistic social world (Hull et al., 2017; Lai et al., 2011; Lawson et al., 2020; Livingston, Shah, & Happé, 2019). Given the emerging nature of this field, conceptualisations and operationalisations of camouflaging are in infancy. Moreover, a lack of consensus exists regarding important issues including the consequences of camouflaging for autistic people. The current thesis aimed to further current understanding of social coping in autistic people by: (1) providing a comprehensive and critical evaluation of the current quantitative camouflaging research base; (2) refining the conceptualisation of camouflaging; (3) investigating the consequences of camouflaging with regard to social and employment outcomes, psychological distress, and mental health difficulties; and (4) exploring an alternative to camouflaging, that is, autistic people's experiences of socialising in ways that feel authentic to them. This chapter presents an overview of key findings of the thesis in relation to these aims. A discussion of strengths and limitations is also presented along with implications of findings and avenues for future research.

### **Conceptualisation of Camouflaging**

During the course of this thesis, discussions and commentaries suggested weaknesses and variations in operationalisations and measurements of camouflaging, making comparisons between, and drawing conclusions across, studies difficult (Fombonne, 2020; Lai et al., 2020; Williams, 2020). The systematic review in Chapter 4 revealed that camouflaging was differentially operationalised throughout the research as: a discrepancy between observed social communication difficulties and autistic traits/social cognition abilities; motivation to engage in camouflaging; specific behaviours and strategies used in camouflaging; and the frequency or pervasiveness of camouflaging in various social contexts. Consequently, I was not able to aggregate data across studies via meta-analytic techniques. Given that the current understanding of camouflaging is still emerging, there was a need to refine not only camouflaging measures but also the construct itself by clearly differentiating related but separate aspects of camouflaging. Subsequent examination of each of these distinct elements of camouflaging with respect to more established constructs such as social anxiety, impression management, and stigma management was also required in order to further the conceptualisation of camouflaging and help in distinguishing autism-specific elements of camouflaging.

Prior qualitative research had provided valuable insights into the process, motivations, behaviours, and strategies of camouflaging via interviews and surveys of autistic adolescents and adults (e.g., Bargiela et al., 2019; Hull et al., 2017; Livingston, Shah, Happé, 2019). However, such research, which retrospectively explored autistic people's experiences of camouflaging, days, weeks, months, or even years after such experiences occurred, was limited in yielding the detailed and precise information required to develop a more comprehensive understanding of the phenomenon. Through the novel use of Interpersonal Process Recall (IPR) methodology in Chapters 4 and 5, these limitations were addressed, resulting in detailed descriptions of the development, process, and behaviours of camouflaging grounded in an immediate and specific quasi-everyday social experience.

Specifically, for the first time in autism research, Chapter 4 detailed the process of camouflaging. Findings suggested participants commonly encountered negative social experiences and responses from others because of their autistic characteristics and behaviours. As a result of others' reactions, and driven by their need for social connection, participants attempted to modify their innate social behaviours so as to augment these social experiences and responses. Over time, reinforced by the actions of others, participants developed a belief that in certain contexts they must change their interpersonal presentation in order to achieve acceptance and connection as well as the ability to camouflage. Upon entering these particular social contexts, they engaged in a dynamic camouflaging process involving: enacting camouflaging behaviours; monitoring personal social performance; and evaluating other's interpersonal cues.

In Chapter 5, camouflaging behaviours reported by participants were described further and grouped into four categories based on the manner in which they operated within interactions: masking (i.e., hiding particular behaviours and/or aspects of one's identity); innocuous engagement (i.e., facilitating passive, cautious, and superficial engagement in social interactions); neurotypical communication (i.e., communicating in line with non-autistic norms and preferences); and active self-presentation (i.e., facilitating active, open, and reciprocal participation in social interactions).

My findings suggested that, similar to other social phenomenon, camouflaging is not a construct located solely within an individual, rather it develops and operates within social interactions that exist within a broader social environment (Jaswal & Akhtar, 2019). Moreover, in line with previous literature, my findings also highlighted similarities between camouflaging and other more widely researched social phenomenon including stigma management and social anxiety (Fombonne, 2020; Lai et al., 2020; Schneid & Raz, 2020). As such, I discussed my findings with regards to literature concerning interpersonal research as well as theory both in and outside the field of autism, resulting in the development of a broader understanding of camouflaging.

Of note, I suggested that using a self-presentation framework, camouflaging could be conceptualised as a repertoire of self-presentation behaviours used by autistic people to (a)

minimise the impact of their stigmatised characteristic on other's perception of them; (b) achieve a desirable social image; and (c) promote positive reactions from others. This repertoire includes a wide range of social behaviours, some of which involve hiding or compensating for autistic differences or difficulties and some of which involve autistic strengths as well as open self-disclosure.

I further suggested that self-presentation frameworks assist in understanding commonalities and differences in the social behaviours of autistic and non-autistic people. Specifically, autistic and non-autistic people existing within a predominately non-autistic social context are likely motivated to make similar desirable normative impressions and avoid similar undesirable normative impressions because they are similarly rewarded by the reactions and treatment of others for doing so. Thus, a degree of overlap exists between the self-presentation behaviours used by autistic and non-autistic people in achieving desirable impressions as well those used by autistic, other stigmatised, and socially anxious individuals in avoiding anticipated undesirable impressions. At the same time, some camouflaging behaviours are specific to autistic people because these minimise autism-specific threats to creating a desirable, normative impression. In research involving non-autistic people, distinct subtypes of interpersonal behaviours are associated with different interpersonal and intrapersonal consequences. However, it remained unclear to what extent specific camouflaging behaviours differentially facilitate social, functional, or mental health outcomes within the autistic population.

### **Consequences of Camouflaging**

Autistic people report using camouflaging strategies to gain employment and education, develop friendships and romantic relationships, and avoid discrimination (Cage & Troxell-Whitman, 2019; Hull et al., 2017). Prior to this thesis, the benefits of using camouflaging, and the extent to which camouflaging strategies assisted autistic individuals to achieve these aims, were not well understood. At the same time, prior qualitative research suggested autistic people additionally linked camouflaging to a range of negative personal consequences including misdiagnosis, lack of



appropriate support, identity confusion, and mental health difficulties (e.g., Bargiela et al., 2016; Cassidy, et al., 2018; Hull et al., 2019; Tierney et al., 2016). Building on this qualitative work, an emerging body of quantitative research examined the association between camouflaging and mental health; yet a review of the literature suggested a lack of consensus amongst researchers regarding this association. Thus, further examination was warranted to examine the consequences of camouflaging.

Via the novel use of interpersonal process recall (IPR) methodology, Chapter 4 detailed the in-situ consequences of camouflaging. Participants identified specific camouflaging strategies and components as difficult or taxing to perform. Feelings of anxiety whilst camouflaging were similarly common and often triggered by perceived threats to participants' self-presentation goals. Further, camouflaging was paradoxically described as interfering with participants' ability to fully engage and effectively communicate during interactions, make certain desired impressions, and limiting authenticity and closeness in social relationships.

With regard to longer-term consequences, findings from Chapter 5 suggested that camouflaging may lead to limited benefit in regard to social and employment outcomes such that camouflaging did not predict number of friends, close friendship status, close friendship length, social isolation, relationship length, employment status, or employment length. However, camouflaging did suggestively predict relationships status. Within this cross-sectional data set, it is not possible to determine the direction of the relationship between camouflaging and relationships status, yet as mentioned above, some autistic people report engaging in camouflaging in order to develop relationships (e.g., Hull et al., 2017). Additionally, it is not clear why camouflaging intent is positively related to relationship status but unrelated to other social and employment outcomes. Moreover, it is also important to acknowledge that these findings relate only to objective indicators of social and employment outcomes but not other equally, if not more, important subjective outcomes (e.g., relationship quality, employment satisfaction).

At the same time, the findings of this thesis suggested camouflaging is consistently associated with symptoms of mental health difficulties and psychological distress. In Chapter 6, higher levels of camouflaging intent predicted higher levels of depressive, anxious, and stress symptoms as well as increased feelings of loneliness. These relationships were not moderated by sex/gender. These results echoed the findings of the systematic review presented in Chapter 3, which suggested that higher camouflaging intent was consistently associated with symptoms of mental health difficulties throughout the current camouflaging research base. It is not possible to demonstrate the direction of these relationships using cross-sectional data. However, the lived experience of autistic people, documented in qualitative research, suggests camouflaging contributes to mental health difficulties (e.g., Bradley et al., 2021).

In sum, the results presented here further current understanding of camouflaging by demonstrating the complicated relationship which exists between camouflaging and social, employment, and mental health outcomes.

### **Authentic-Feeling Socialising**

Prior to the research presented in this thesis, research on cross-neurotype interactions or social coping in autistic people tended to focus on camouflaging. Yet, throughout this research, there were multiple instances of autistic people describing their engagement in camouflaging as fluctuating or context specific (see also Cage & Troxell-Whitman, 2019; Hull et al., 2017; Livingston, Shah & Happé, 2019). Similarly, in Chapter 4, I was surprised to discover that in addition to describing camouflaging, some participants described an experience of socialising explicitly characterised by a reduction in or absence of camouflaging. Of note, participants described a more authentic-feeling interpersonal style that they associated with increased positive affect and decreased negative affect. Given these positive associations, further investigation was warranted.

Thus, Chapter 7 provided an in-depth exploration of autistic people's experiences and perceptions of socialising in ways that felt more authentic to them. Findings suggested that most participants had been mistreated by non-autistic people for being their authentic or true selves. And

yet, within some relationships, usually with understanding and accepting (autistic and non-autistic) friends, family, or romantic partners some participants described experiencing enjoyable and satisfying interactions in which they engaged in ways that felt authentic to them. This authentic-feeling socialising involved reductions in self-monitoring and censoring, more comfortable social behaviours, open self-disclosure, and actively communicating and asserting social needs and preferences. Compared to camouflaging, socialising in ways that felt authentic was associated with more positive interpersonal and intrapersonal consequences including: increased feelings of relaxation; decreased feelings of stress, anxiety, and mental exhaustion; increased ability to focus, engage and manage day-to-day stress; and strengthened relationships and connections. Having an awareness and acceptance of one's social needs and preferences and skills in effectively communicating and asserting these needs and preferences appeared to be central in enabling participants to socialise in ways that felt authentic to them. However, importantly, the degree to which participants felt they could engage authentically was related to the interpersonal behaviours of their social partners (i.e., the social environment). Thus, similar to camouflaging, authentic-feeling socialising also appeared to be best understood as an interpersonal process dependent upon the social environment.

I discussed my findings with regard to authenticity literature and theory from both in and outside the field of autism research. My findings echoed extant literature demonstrating the multiple benefits of socialising in ways that feel authentic to oneself (within supportive environments; e.g., Crompton, Hallett, et al., 2020; Lenton et al., 2013; Huppertz et al., 2020). Additionally, my findings aligned with prominent psychological theories that emphasise the importance of the social environment (Leary, 2003 see also Wallace et al., 2021) as well as person-environment interplay (Kernis & Goldman, 2005 see also Wood et al., 2008) in facilitating authenticity and psychological wellbeing.

My findings additionally highlighted the influence of bi-directional differences in social communication style and reciprocal challenges in understanding on the quality of cross-neurotype interactions (i.e., the double empathy problem; Milton, 2012). Cross-cultural explanations of communication were also discussed as framework through which to better understand the role of non-autistic people in improving the social environment. To this end, my findings aligned with cross cultural research suggesting the ability to communicate effectively in cross-cultural situations (i.e., be cross culturally competent) is dependent on cross-cultural knowledge (e.g., detailed, holistic, and contextualised understanding), attitudes (e.g., respect, openness, and curiosity towards those from other cultures); and behaviours (e.g., flexible, sensitive, and appropriate communication and behaviour).

Thus, Chapter 7 made a significant contribution to current understanding of autistic people's social experiences and illuminated a potential avenue through which such experiences and in turn wellbeing may be improved for this group.

### **Summary of Findings**

Within the predominately non-autistic social world, autistic people encounter negative social experiences owing to bi-directional cross-neurotype communication challenges (Chapters 4 and 7). In turn, autistic people use a wide range of social coping behaviours and strategies in an attempt to augment these negative experiences (Chapter 5). Some of these strategies - currently termed camouflaging strategies - may enable autistic people to (consciously or unconsciously) present a non-autistic social style, hide their autistic characteristics, and/or minimise the visibility of their social difficulties.

Autistic people's attitudes towards camouflaging strategies vary and some autistic people feel camouflaging strategies are helpful in improving non-autistic people's reactions to and treatment towards them (Chapter 4). However, there is also some evidence to suggest camouflaging does not help autistic people to achieve short- or long-term social and employment goals (Chapters

4 and 6). Additionally, considerable evidence suggests camouflaging is associated with poorer mental health (Chapters 4 and 6).

In some interpersonal contexts, autistic people feel free to engage in ways that feel more authentic to them than camouflaging (Chapters 4 and 7). When these contexts involve non-autistic people, autistic people report using social coping strategies that contrast camouflaging strategies, including communicating and asserting their social needs and preferences (Chapter 7). Such authentic-feeling socialising is associated with more beneficial intra and inter-personal outcomes than camouflaging.

Self-awareness and acceptance, sometimes gained via receiving a diagnosis, enables autistic people to socialise in ways that feel authentic to them. Acceptance and understanding from others is similarly important, as is non-autistic people's use of specific communication behaviours (in cross-neurotype settings).

The findings of this thesis align with the social model of autism (Oliver, 1990). Disability in relation to autism, as explored in this thesis, appears to relate to poor person-environment fit, that is, a poor fit between a neurodivergent person and an unaccommodating, predominately non-autistic social environment (Lai et al., 2020). Attempting to overcome such poor person-environment fit solely via individual adaption (i.e., camouflaging) may have harmful intrapersonal and interpersonal consequences. Rather, more beneficial solutions may be achieved by improving the social environment as well as person-environment interplay via neurodiversity informed interventions (Lai & Szatmari 2019; Leadbitter et al., 2021).

### **Implications**

The findings of this thesis have several key implications for clinical practice. A central focus of clinical services should be to improve the quality of life of autistic people via the achievement of personally meaningful social, educational, and employment goals (National Autistic Taskforce, 2019). Given social, educational, and employment domains involve an interpersonal aspect, autism interventions within these domains usually contain a social skills component. Existing autism

interventions explicitly teaching non-autistic social behaviours (e.g., some social skills interventions), may have the unintended consequence of explicitly or implicitly reinforcing the notion that autistic people need to present in line with non-autistic norms in order to be accepted by, and succeed within, society. In turn, these approaches may encourage camouflaging (e.g., Bottema-Beutel et al., 2018). Moreover, social interventions encouraging autistic people to present a non-autistic social style, hide their autistic characteristics, and/or minimise the visibility of their social difficulties via the instruction of camouflaging like behaviours are likely ineffective in helping autistic people to achieve their social and employment goals or promoting their wellbeing; a notion that is evidenced elsewhere (e.g., Lorenc, et al., 2018). Rather, neurodiversity informed social interventions aimed at improving person-environment fit via helping autistic people to select and shape their social environments may be more beneficial. Specifically, the results presented here suggest that autistic people may benefit from interventions aimed at improving their understanding and acceptance of their social style, preferences, and needs as well as skills in communicating and asserting these during day-to-day interactions (Chapters 4 and 7). Similarly, autistic people may benefit from individualised approaches focused on identifying personally harmful social coping strategies as well as exploring and building upon personally beneficial social coping strategies. Whilst novel interventions are likely required, increased implementation of existing psychoeducation interventions aimed to helping newly diagnosed autistic people to understand their autism and build self-awareness and self-esteem is also suggested (see Leadbitter et al., 2021 see also Gordon et al., 2015; Crane, Hearts, et al., 2021)

Another key focus of clinical services should be addressing high rates of co-occurring mental health difficulties found among autistic people across the lifespan (Cusak & Sterry, 2016). The results of the current thesis suggest clinical services and practitioners should be aware that camouflaging may be a risk factor in the development and maintenance of mental health difficulties (especially for girls and women who report engaging in higher levels of camouflaging; Chapter 3) and target intervention accordingly. Autistic people may benefit from neurodiversity informed mental health

interventions that assist them to explore the potential role of camouflaging on their mental health by, for example, exploring camouflaging behaviours that trigger or exacerbate feelings of loneliness, or depressive, anxious, and/or stress symptoms. Moreover, the secondary benefit of alternative social interventions, aimed at helping autistic people to shape and select their social environments (described above), in improving mental health should also be considered.

Finally, the results presented here suggest that in order to improve the lives of autistic people, it is essential for clinical services to target the immediate and broader social environment. Autistic people will likely benefit from increased access to supportive and accepting same and cross-neurotype social environments within which they feel free to socialise in ways that feel authentic to them. With regard to cross-neurotype social environments specifically, there is a need for interventions aimed at improving non-autistic people's ability to relate to autistic people. Such interventions should target both non-autistic people's knowledge about and attitudes towards autistic people but also non-autistic people's cross-neurotype communication skills. To this end, increased implementation of existing interventions aimed at increasing autism knowledge and/or decreasing autism stigma among non-autistic parents, teachers, and peers will likely be beneficial (e.g., Gillespie-Lynch et al., 2015; Jones et al., 2021; Learning about Neurodiversity at School project; <https://dart.ed.ac.uk/research/leans/>). However, there is likely a need for novel interventions aimed at improving non-autistic people's ability to communicate with autistic people, aged across the lifespan.

### **Avenues for Future Research**

These clinical implications highlight the need for neurodiversity informed interventions for autistic people focused on improving both the social environment as well as person-environment interplay. In developing such interventions, several lines of research are possible.

Firstly, future research could more fully examine the wide range of social coping strategies used by autistic people including for whom and through which mechanisms various social coping strategies may differentially facilitate social, employment, and mental health outcomes. To this end,

using more general language or terminology in describing this phenomenon (i.e., social behaviours or social coping strategies rather than camouflaging) may be helpful in illuminating additional perspectives on social coping in autism not currently documented within the field. However, it is important that moving forward researchers consult with the autistic community regarding terminology, not least because of criticisms raised by autistic scholars regarding current terminology and definitions (Lawson, 2020; Pearson & Rose, 2021; Schneid & Raz, 2020).

Secondly, although the aim of the current thesis (but unfortunately not feasible due to COVID-19), longitudinal research on camouflaging has not yet been conducted. Thus, longitudinal research could further investigate the direction of the relationship between camouflaging and mental health and aid in establishing causality. Moreover, longitudinal research could be helpful in establishing the trajectory of camouflaging across different developmental stages and determining opportune time points to implement interventions.

Thirdly, given the potential link between camouflaging and existing intervention programs (i.e., social skills programs), future research about such programs should consider camouflaging and feelings of authenticity as important secondary outcomes. If a link between such programs and increased camouflaging and/or decreased feelings of authenticity emerges such program may need to be altered or abandoned. Additionally, camouflaging and feelings of authenticity should be considered in research examining the quality of therapeutic relationships between autistic people and non-autistic health professionals.

Fourthly, future research could examine how existing frameworks may be utilised to develop novel interventions aimed at supporting autistic people to socialise in ways that feel authentic to them by enabling them to select and shape their social environments. One such beneficial framework may be that of self-advocacy. Self-advocacy, described as the ability determine and communicate one's wants and needs as well as the supports required to achieve these, includes the multiple components of knowledge of self, knowledge of rights, and ability to communicate (Daly-Cano et al., 2015; Stodden et al., 2003). Several self-advocacy interventions have



demonstrated promising outcomes, particularly in helping autistic students secure appropriate academic accommodations in educational contexts. Self-advocacy frameworks utilised within the context of everyday cross-neurotype social interactions may provide a potentially more beneficial alternative to social skills programs.

Interventions using self-compassion frameworks may also be beneficial. Self-compassion is conceptualized as an adaptive response to perceived inadequacy, failure, or suffering and involves being mindfully aware of painful internal experiences rather than over identifying with them; understanding of the universality of suffering rather seeing one's suffering as separating and isolating; and enacting a supportive and caring attitude towards oneself rather than being judgemental and self-critical (Neff, 2003). Self-compassion is a modifiable individual level factor associated with reduced depressive, anxious, and stress symptoms and increased wellbeing and resilience in individuals who experience stigma (Brion et al., 2013; Brown-Beresford & McLaren, 2021; Vigna et al., 2018; Yang & Mak, 2017). Additionally, self-compassion has also been shown to mediate the relationship between autistic traits and depressive and anxious symptoms within the general population (Galvin et al., 2020). Self-compassion interventions demonstrate effectiveness in improving a range of psychosocial and mental health difficulties in the general population (e.g., rumination, depression, stress, anxiety, self-criticism; Ferrari et al., 2019) and the effectiveness of using self-compassion interventions in improving the mental health of adolescents with minority group identities is currently under way (Finlay-Jones et al., 2021). Thus, self-compassion interventions may have the potential to help autistic people to respond to the challenges they face within predominately non-autistic social environments in personally adaptive and beneficial ways. Moreover, given there is some evidence to suggest a link between self-compassion and compassion for others (Chio et al., 2021), tailored self-compassion aimed at, for example non-autistic peers, family members, or teachers may have the potential to improve the social environment.

Fifthly, future research could investigate how novel interventions targeting non-autistic people's cross-neurotype communication skills may enable autistic people to socialise in ways that

feel authentic to them via improving the social environment. Exploring existing frameworks that focus on cross-cultural communication may be useful in developing such interventions (e.g., Arasaratnam, 2012; Hagqvist et al., 2020; Rasmussen & Sieck, 2015). The field of cross (or inter)-cultural communication seeks to understand how people from different cultures communicate within intercultural spaces (Arasaratnam, 2012; Hagqvist et al., 2020). Cross-cultural research suggests that the ability to communicate effectively in intercultural spaces (i.e., to be cross-culturally competent) is dependent of cross-cultural knowledge (e.g., detailed, holistic, and contextualised understanding); attitudes (e.g., respect, openness, and curiosity towards other cultures), and actions (e.g., flexible, sensitive, and appropriate communication and behaviours; Chiu & Shi, 2019; Dearnorff, 2011; Shen, 2015). Cross-cultural competency interventions have been used to, for example, improve health professionals' ability to effectively and appropriately interact with people from any culture (e.g., Filmer & Herbig, 2018).

Within such research, culture is defined as a pattern of thoughts, values, and behaviours shared by members of a social group; including, for example, language, communication style, and views about social roles (Betancourt, 2004; Harris, 1979). Typically, these patterns of thoughts, values, and behaviours are thought to be learned by members of a social group through a process of enculturation. However, autistic people could be conceptualised as a social group, who share common patterns of thoughts, values, and behaviour owing to both neurological similarity as well as enculturation (Davidson 2010). Thus, the usefulness of understanding cross-neurotype interaction using cross-cultural communication frameworks and models has been raised by several in the field (Attwood, 2007; Hillary, 2020; Miyazaki & DeChicchis, 2013).

### **Strengths and Limitations**

The mixed methods approach adopted across this thesis represents a key strength. Social coping in autistic people (encompassing both camouflaging and authentic socialising) is a social phenomenon with both quantifiable and non-quantifiable elements, located within a social interaction but also arising from and impacting upon an individual's experiences. Thus, moving the

field forward required the integration of different levels of explanation. Through a mixed methods approach, several different layers of quantitative and qualitative data were collected that, in turn, facilitated the generation of varied knowledge. As demonstrated in this chapter, the knowledge gained in this thesis significantly contributes to the development of a more systematic and complete explanation of social coping in autistic people but also more broadly to cross-neurotype communication.

The thesis was also strengthened by the use of novel methods, developed in other forms of interpersonal research, but not previously used in the field of autism. In Chapter 4 and 5, via the use of a standardised social task, involving a non-autistic social partner, I successfully recreated a quasi-everyday cross-neurotype social situation involving a degree of the double empathy problem. IPR interviews then yielded in depth information about autistic adults' motivations, cognitions, behaviours, and emotions related to camouflaging. This method generated novel insights and addressed limitations in previous qualitative research retrospectively exploring experiences of camouflaging days, weeks, months, or even years after such experiences have occurred (e.g., Bargiela et al., 2016; Hull et al., 2017; Livingston, Shah, & Happé, 2019). Specifically, interviewing participants immediately after a camouflaging experience allowed participants to easily and vividly recall camouflaging behaviours. The use of video during the interview helped cue participants to recall camouflaging behaviours that may not be recalled unassisted (Omodei & McLennan, 1944; Omodei et al., 2005). Finally, the slow pace of the IPR interview allowed participants more time to recall and verbalise nuanced, complex, or infrequent camouflaging behaviours. The success of this methodology demonstrates the benefits of developing and adapting research methods so as to better suit the needs of autistic people and enhance the quality of data collected. At the same time, it must be acknowledged that this particular method is likely unsuitable for use with some members of the autistic community.

The online methods of data collection employed in Chapters 6 and 7 represent both strengths and weaknesses. Compared to face-to-face data collection techniques, online surveys

often enable a larger number of people with a wider range of experiences to participate. Indeed, in Chapter 6 I recruited one of the largest samples of autistic people with diverse sex/genders in camouflaging research to date. Such large samples facilitate the collection of a wide range of experiences of and perspectives about a topic; particularly valuable in facilitating generalisability in quantitative research and generating ‘wide-angle lens’ qualitative data about previously underexplored phenomenon (Braun et al., 2017, 2020; Braun & Clarke, 2013; Toerien & Wilkinson, 2004). Moreover, as well as being endorsed by members of the autistic community (Bradley et al., 2021), online surveys enable individuals to complete data collection in their own time within familiar and comfortable surroundings of their choosing; a factor that likely enhances data quality (Crane et al., 2021).

Throughout the thesis, obtaining diverse and representative samples was challenging and likely exacerbated by my use of online recruitment and data collection. Unfortunately, as is often common in this field (Russell et al., 2019), my research is limited with generalisability regarding people from non-white ethnic backgrounds, those diagnosed in childhood, those who are not university educated, and those with intellectual disability. Lack of diversity in terms ethnic background, intellectual abilities, and educational background, is particularly concerning owing to the likely role of having multiple minority identities on camouflaging (Botha & Frost, 2020). Given this sampling issue is common across camouflaging literature, there is evidence to suggest the online methods of recruitment used here and in past camouflaging research (i.e., Facebook, Twitter, CARD) are limited in reaching a broad and diverse range of autistic people. Indeed, whilst in Chapter 7 I successfully increased the percentage of cisgender men participants by advertising on CARD only, diversity in other respects remained limited. Additionally, the format of online surveys likely represents a barrier to participation for some members of the autistic community especially those with certain language and learning difficulties. Thus, diversification in terms of both recruitment and data collection methods is likely required to reach a broader range of individuals.

Based largely on the work of autistic advocates, academics, and activists, the central importance of inclusive and community-engaged practices in creating autism knowledge is increasingly gaining acceptance (see den Houting et al., 2019 see also Fletcher-Watson et al., 2019, 2021). Inclusive and community-engaged practices were viewed as central to this thesis and elements of each were successfully implemented where possible. The first study I conducted (see Chapters 4 and 5) sought to centre autistic perspectives by using qualitative methods to ground findings in the lived experiences of autistic people. Additionally, I sought feedback regarding the suitability and accessibility of the study procedure from initial participants before continuing with data collection proper. However, as the PhD progressed and my understanding of inclusive and community-engaged practices developed, I came to understand that autistic people needed to be more fully involved at all stages of the research from conceptualisation and design, to data collection and analysis, through dissemination and implementation. Consequently, in Chapter 6, I partnered with a number of other researchers in designing, carrying out, and writing up my research; one of whom identifies as autistic. Then in Chapter 7, I consulted with autistic people regarding the conceptualisation, design, and dissemination of the research. This increased the usefulness and rigour of the research in these chapters by ensuring methods were suitable and accessible; findings have meaningful impact; and (will be) disseminated in an ethical, respectful, and effective manner. Moreover, in line with ethical practice this ensured autistic people were afforded their right to contribute to research that affects their lives (Fletcher-Watson, 2019; Pellicano, Lawson, et al., 2021). However, it is important to note that if evaluated using Arnstein's 1969 power hierarchy, the research in this chapters only reached tokenism (e.g., consultation) rather than citizen power (e.g., community-led research) because power was not shared with autistic people at every stage of every study. I look forward to developing my use of inclusive and community-engaged practices further in the future research.

**Concluding Remarks**

Overall, the findings from this thesis significantly progress current understanding of social coping in autism. Overall results suggested that, autistic people experience negative social experiences as a result of poor fit between their neurodivergent characteristics and an unaccommodating, predominately non-autistic social environment. Additionally, attempting to overcome such poor person-environment fit solely via individual adaption (i.e., camouflaging) may have harmful intrapersonal and interpersonal consequences. The key implication of these findings is that neurodiversity informed interventions are needed to improve the social environment as well as person-environment interplay.

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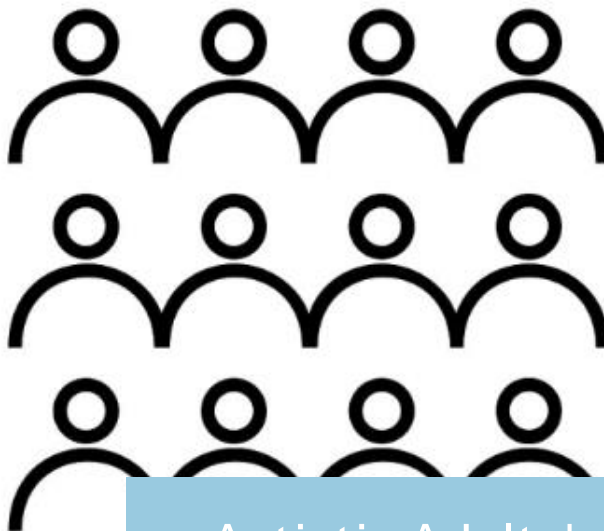
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## Appendix A

### Dissemination Materials for Chapter 4 & 5

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## Autistic Adults' Experiences of Camouflaging

We think of camouflaging as the process through which autistic people modify their natural social behaviours in order to adapt to, cope within, or influence the largely neurotypical (non-autistic) social world. Our understanding of camouflaging is still at a very early stage. This is a problem because we cannot understand how camouflaging affects autistic people's lives until we understand what camouflaging is. In this study we tried to answer two questions:

Q1: What is it like to camouflage?

Q2: What are camouflaging behaviours?

#### KEY FINDINGS

1. Autistic people are often treated poorly by non-autistic people. In turn, autistic people camouflage so non-autistic people will accept and value them.

2. Autistic people camouflage in many different ways.

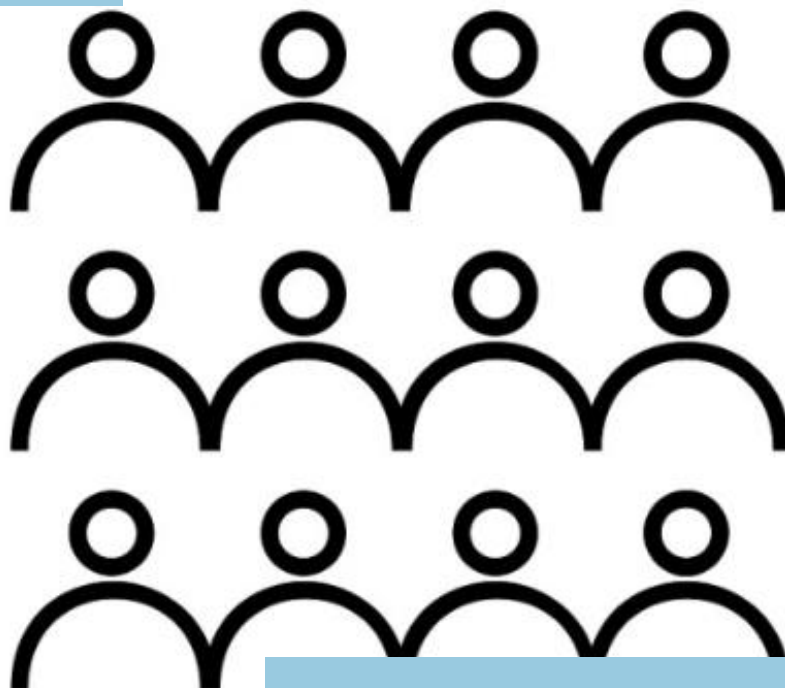
3. Camouflaging often involves changing or modifying one's innate social behaviours.

4. Changing one's innate social behaviour may be associated with feelings of tiredness, anxiety, and inauthenticity.

5. When non-autistic people are more open and non-judgemental, autistic people don't need to change their behaviours as much. Instead they feel safe to act in ways that feel more authentic to them.

6. Some autistic people used their personal or autistic strengths when interacting with non-autistic people. Using autistic strengths when socialising may also help autistic people to make a positive impression and build social connections. We wonder if camouflaging is really the right term to describe using personal and autistic strengths.

## Summary for Participants



We think of camouflaging as the process through which autistic people modify their natural social behaviours in order to adapt to, cope within, or influence the largely neurotypical (non-autistic) social world. Many autistic people experience negative reactions to their natural or intuitive social behaviours when interacting with non-autistic people. Over time, in response to these negative reactions, autistic people's social behaviour often changes. We call this process of behaviour change "camouflaging." Some autistic people are aware they have changed or modified some or many of their behaviours whilst other autistic people are not. In this study, we call autistic people's changed behaviour "camouflaging behaviour."

## Autistic Adults' Experiences of Camouflaging

Our understanding of camouflaging is still at a very early stage. This is a problem because we cannot understand how camouflaging affects autistic people's lives until we understand what camouflaging is. In this study we tried to answer two questions:

Q1: What is it like to camouflage?

Q2: What are camouflaging behaviours?



### What you did:

You were one of 17 autistic adults who took part in the study. You were filmed taking part in a common everyday social situation - a conversation with a stranger. You then watched the video of this conversation with a researcher and answered questions about camouflaging. You also completed the Autism Quotient (a questionnaire measuring autistic-traits), Camouflaging Autistic Traits Questionnaire (a questionnaire measuring camouflaging behaviours), and Test of Premorbid Functioning (a reading test).

We asked you to complete these extra questionnaires and tests so we could know something about the type of people who took part in the study. Autistic people (just like non-autistic people) are a very diverse group and have a range of life experiences. Thus, we needed to ask these extra questions to understand how the experiences of people who took part in our study may be similar to dissimilar to other autistic people.

### Q1: What is it like to Camouflage?

We used a technique called "thematic analysis" to explore what it is like to camouflage. Thematic analysis is a way of analysing interviews, whereby a researcher looks for common or interesting patterns or 'themes' across everyone's interviews. Based on everyone's interviews we generated four themes. We summarise these four themes below. Because these themes are based on everyone's interviews you may find some of them do not apply to you.

**Acceptance and Connection:** Some people spoke of being motivated to interact with others in a way that would lead others to accept, like, and value them. However, because of past negative social experiences (usually involving non-autistic people) some participants were uncertain or anxious about their ability to do so.

**Camouflaging is Often Necessary:** Some people felt camouflaging (i.e. changing their natural social behaviour) was necessary in order to gain acceptance and connection from non-autistic people.

**Negative Consequences of Camouflaging:** Some people felt that it was tiring or difficult to change their behaviour. Some people felt anxious or less authentic when camouflaging. Others felt camouflaging sometimes made socialising more difficult because when they focused on changing their behaviour it was more difficult to be fully present in the interaction.

**More Authentic Socialising:** Some people said they camouflage less now than they used to. Some of these people said they engaged in autistic behaviours such as stimming more freely when around others. Some people explained their autistic social differences or needs to others. People often said they could only act in these ways if the non-autistic people they were around were non-judgemental and welcoming. In contrast, some people said that whilst they wanted to camouflage less, after a lifetime of camouflaging, they didn't know how to stop.



## Q2: What are Camouflaging Behaviours?

We used a technique called “content analysis” to identify, categorise and tally (or count) the camouflaging behaviours described in interviews. We identified four types of camouflaging behaviours, which we summarise below. The kinds of behaviours people described varied widely. Thus, some or many of the camouflaging behaviours reported below may not apply to you.

### “Masking” Behaviours

Some people tried to hide certain behaviours or aspects of themselves in order to reduce the likelihood of being judged negatively by others. For example, some people tried to stop themselves from stimming, fidgeting, rocking, or moving around. Some people preferred not to speak about themselves or to share information about their relationship, financial status, daily activities, interests, or hobbies.

### Innocuous Socialising Behaviour

When socialising, some people focused on others, prioritising their enjoyment, comfort and preferences. In doing so people appeared to be reducing the likelihood of controversy, disagreements, or negative evaluation. For example, some people encouraged others to keep talking (i.e., by making eye contact, smiling, or saying, “Okay,” or “Oh really”). Some people avoided topics of conversations that may generate controversy or debate or avoided asking others personal questions. Others avoided communicating in a direct manner.



## Using Neurotypical (Non-Autistic) Communication

Some people used more “conventionally neurotypical” communication behaviours so as to be more easily understood by non-autistic people. For example, some people changed their facial expressions, hand gestures, body language, or speech intonation.

### Active Self-Presentation

Some people used personal and/or autistic strengths to make a positive impression and keep social interactions going or “flowing.” For example, some people spoke about themselves, shared facts, or made jokes. Other people asked questions and tried to find things they had in common with others. Some people chose to talk about things they were comfortable discussing or knew a lot about or used practiced/pre-planned phrases, comments, or questions.

### What have we learnt?

1. Autistic people are often treated poorly by non-autistic people. In turn, autistic people camouflage so non-autistic people will accept and value them.
2. Autistic people camouflage in many different ways.
3. Camouflaging often involves changing or modifying one’s innate social behaviours.
4. Changing one’s innate social behaviour may be associated with feelings of tiredness, anxiety, and inauthenticity.
5. When non-autistic people are more open and non-judgemental, autistic people don’t need to change their behaviours as much. Instead they feel safe to act in ways that feel more authentic to them.
6. Some autistic people used their personal or autistic strengths when interacting with non-autistic people. Using autistic strengths when socialising may also help autistic people to make a positive impression and build social connections. We wonder if camouflaging is really the right term to describe using personal and autistic strengths.

**What's Next?**

We have written two research papers about the study for scientific journals. We are hoping these articles will be published soon. Please let us know if you would like to receive a link to these research papers when they are published.

We also believe it is important to share these findings with the autistic and wider community. We would love to hear any feedback or ideas you may have about how or where these results should be shared.

Based on what we learned in this study we are now hoping to explore people's experiences of being more authentic or using personal/autistic strengths during social interactions. To do this we are preparing an online study. If you are interested in taking part in this study, please keep a look out for an email from us in the coming months.



Thank you for so generously giving your time and insights to this research. Without you, this study would not have been possible.

Julia Cook, William Mandy, Laura Crane, Laura Hull, and Laura Bourne

## Appendix B

### Database Search Strategy

**Database:** Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily from 1946

**Search Strategy:**

- 1 exp child development disorders, pervasive/ or autism spectrum disorder/ or asperger syndrome/ or autistic disorder/
- 2 autis\*.mp.
- 3 asperger\*.mp.
- 4 (pervasiv\* adj2 development\* adj2 disorder\*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 5 ASD.mp.
- 6 1 or 2 or 3 or 4 or 5
- 7 Social Conformity/
- 8 (peer imitation or social imitation).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 9 camouflag\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

- 10 (compensat\* adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 11 (pass adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 12 (passing adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 13 (mask\* adj20 (autis\* or asperger\* or ASD or social or behav\* or pass or passing or camouflag\* or strategies)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- 14 7 or 8 or 9 or 10 or 11 or 12 or 13
- 15 6 and 14

**Database:** Embase from 1980

**Search Strategy:**

- 1 autism/ or asperger syndrome/ or "pervasive developmental disorder not otherwise specified"/
- 2 autis\*.mp.
- 3 asperger\*.mp.
- 4 (pervasiv\* adj2 development\* adj2 disorder\*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 5 ASD.mp.
- 6 1 or 2 or 3 or 4 or 5
- 7 compensation/
- 8 masking/
- 9 (peer imitation or social imitation).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 10 camouflag\*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 11 (compensat\* adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 12 (pass adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]



- 13 (passing adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 14 (mask\* adj20 (autis\* or asperger\* or ASD or social or behav\* or pass or passing or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]
- 15 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
- 16 6 and 15

**Database:** APA Psych Info (Ovid) from 1806

**Search Strategy:**

- 1 autism spectrum disorders/ or neurodevelopmental disorders/ or autistic traits/
- 2 autis\*.mp.
- 3 asperger\*.mp.
- 4 (pervasiv\* adj2 development\* adj2 disorder\*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 5 ASD.mp.
- 6 1 or 2 or 3 or 4 or 5
- 7 "compensation (defense mechanism)"/
- 8 (peer imitation or social imitation).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 9 camouflag\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]

- 10 (compensat\* adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 11 (pass adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 12 (passing adj20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 13 (mask\* adj20 (autis\* or asperger\* or ASD or social or behav\* or pass or passing or camouflag\* or strategies)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh]
- 14 7 or 8 or 9 or 10 or 11 or 12 or 13
- 15 6 and 14

**Database:** Scopus

**Search Strategy:**

( TITLE-ABS-KEY ( autis\* OR asperger\* OR asd OR ( pervasive AND development\* AND disorder\* ) ) )  
AND ( ( TITLE-ABS-KEY ( camouflag\* ) ) OR ( TITLE-ABS-KEY ( ( peer AND imitation ) OR ( social AND imitation ) ) ) OR ( TITLE-ABS-KEY ( compensat\* W/20 ( autis\* OR asperger\* OR asd OR social OR behav\* OR mask\* OR camouflag\* OR strategies ) ) ) OR ( TITLE-ABS-KEY ( pass W/20 ( autis\* OR asperger\* OR asd OR social OR behav\* OR mask\* OR camouflag\* OR strategies ) ) ) OR ( TITLE-ABS-KEY ( passing W/20 ( autis\* OR asperger\* OR asd OR social OR behav\* OR mask\* OR camouflag\* OR strategies ) ) ) OR ( TITLE-ABS-KEY ( mask W/20 ( autis\* OR asperger\* OR asd OR

social OR behav\* OR mask\* OR camouflag\* OR strategies )) ) OR ( TITLE-ABS-KEY ( masking W/20  
 ( autis\* OR asperger\* OR asd OR social OR behav\* OR mask\* OR camouflag\* OR strategies ) ) ) )

Database: Web of Science Core Collection from 1900

Search Strategy:

- 3 1 and 2
- 2 TS=(camouflag\*) OR TS=("peer imitation" or "social imitation") OR TS=((compensat\* near/20 (auti  
 s\* or asperger\* or ASD or social or behav\* or mask\* or camouflag\* or  
 strategies) )) OR TS=((pass near/20 (autis\* or asperger\* or ASD or social or behav\* or mask\* or  
 camouflag\* or strategies) )) OR TS=((passing near/20 (autis\* or asperger\* or ASD or social or  
 behav\* or mask\* or camouflag\* or strategies) )) OR TS=((mask\* near/20 (autis\* or asperger\* or  
 ASD or social or behav\* or pass or passing or camouflag\* or strategies) ))
- 1 TOPIC: (autis\*) OR TOPIC: (asperger\*) OR TOPIC: (((pervasiv\* near/1  
 development\*) AND disorder\*)) OR TOPIC: (ASD)

Database: ProQuest Dissertations and Theses

**Search Strategy:**

(ti(autis\* OR asperger\* OR ASD) AND ti(camouflag\* OR "compensatory strategies")) OR (ab(autis\* OR  
 asperger\* OR ASD) AND ab(camouflag\* OR "compensatory strategies"))

Database: Google Scholar

**Search Strategy:**

- 1 allintitle: Autism camouflaging OR camouflage OR "peer imitation" OR "social imitation" OR  
 passing OR masking OR "compensatory strategies"
- 2 allintitle: Autistic camouflaging OR camouflage OR "peer imitation" OR "social imitation" OR  
 passing OR masking OR "compensatory strategies"

Database: PsyARXIV

**Search Strategy:**

autis\* AND ( camouflag\* OR compensat\* OR passing OR masking OR "peer imitation" OR "social imitation")

## Appendix C

### Additional Information Regarding Selected Excluded Studies

**Table 1, Appendix C**

*Overview of Exclusion Reasons for Articles Previously Included in Allely (2019) and Tubío-Funqueiriño et al. (2020).*

Author and Year	Reason for Exclusion
Bargiela et al. (2016)	Presented only qualitative data regarding camouflaging in late diagnosed women.
Cook et al. (2018)	Presented only qualitative data regarding masking in autistic girls and their mothers.
Dean et al. (2017)	This study quantitatively compared playground activities (type of activity and time spent in activity) between autistic and non-autistic boys and girls. Qualitative data was provided describing camouflaging behaviours. Thus, this study did not present quantitative data measuring camouflaging.
Head et al. (2014)	The authors compared autistic and non-autistic children's scores on a self-report measure of friendship quality, understanding, and empathy. Thus, this study did not report quantitative data measuring camouflaging.
Lehnhardt et al. (2016)	The authors compared differences in cognitive, executive functioning, and mentalising abilities between late diagnosed autistic men and women. The authors discussed these abilities as potentially enabling camouflaging. Thus, this study presented data on abilities that may be associated with camouflaging rather than camouflaging per se.
Tierney et al., (2016)	Presented only qualitative data regarding camouflaging in autistic girls.

## Appendix D

### Additional Information Regarding MMAT Assessment

**Table 1, Appendix D**

*Results of Quality Assessment using MMAT.*

	Quality Criteria	N studies meeting Criteria	Reasons studies did not meet criteria (i.e. received a “no” or “can’t tell” rating)
Quantitative/mixed methods studies (n = 26)	Are participants representative of the target population?	3	<ul style="list-style-type: none"> <li>• Target population was autistic people, however those with ID were excluded/not invited to participate (n=10)</li> <li>• Target population was autistic adults, however, online format is a barrier to participation for those with certain intellectual or language difficulties (n =11)</li> <li>• Sample was predominately female (not including studies with gender related hypothesis; n = 5)</li> <li>• Sample was predominately diagnosed in adulthood (n = 4)</li> <li>• Data come from larger data set and no information provided regarding differences between participants included and large number of participants excluded (n=1)</li> <li>• Target population was autistic people, however reported IQ range does not include IQ &lt; 70 (n=1)</li> </ul>
	Are measurements appropriate (e.g., justified, appropriate, validated, and reliability tested)?	18	<ul style="list-style-type: none"> <li>• Measure/s not designed for use with autistic people and no information provided regarding the suitability of these measures for use with autistic population/no reliability data provided for current sample (n =3 )</li> <li>• Measure/s not designed for specific age group of autistic people and no information provided regarding the suitability of measure/s for use with this age group/no reliability data provided for current sample (n = 1)</li> <li>• Ad hoc method of quantifying camouflaging or compensation scores based on text responses to open ended question (n = 2)</li> <li>• Measured main variable of gender using single question where the only response options were male and female (n = 1)</li> </ul>

			<ul style="list-style-type: none"> <li>Measured main variable of interest using single item, thereby limiting individual variation that could be captured (n = 1)</li> </ul>
	Is outcome data complete?	6	<ul style="list-style-type: none"> <li>&gt;20% of data missing on a main variable (n = 2)</li> <li>Flow of participants not provided (n = 17)</li> <li>Amount of missing data unclear (n = 1)</li> </ul>
	Are confounders considered and accounted for in the design and analysis?	14	<ul style="list-style-type: none"> <li>Main analysis involved between group comparison, however, no statistics were provided regarding potential between group differences on demographic variables (n = 10)</li> <li>Autistic and non-autistic group compared, however, autistic traits were not controlled for (n = 2)</li> </ul>
Qualitative studies (n = 3)	Qualitative approach is appropriate for the research question	3	
	Adequate data collection methods	3	
	Findings derived from the data	3	
	Interpretation of results sufficiently substantiated by data	3	
	Coherence between qualitative data sources, collection, analysis and interpretation	3	

*Note.* Reasons studies did not meet criteria are not mutually exclusive.

## Appendix E

## Additional Information Regarding Participant Characteristics

Table 1, Appendix E

*Overview of Participant Characteristics for Included Studies*

Author (year)	N (n= sex/gender); measurement	Mean age, (SD), range	% Clinical diagnosis of autism	Mean age at diagnosis (SD)	Mean FSIQ (SD); measure	% Ethnic group or race	% Educational attainment	% Comorbidities	Location; Recruitment methods
Hull et al. (2017)	92 ASD (n = 55 F, 30 M, 7 O); gender (n= 65 F, 27 M); sex	F: 40.71 (14.14), 18-68; M: 48.03 (16.62), 22-79; O: 40.71 (14.29), 27-69	100	F: 36.98 (14.21); M: 41.03 (18.08); O: 32.67 (9.25)	n.r.	n.r.	n.r.	n.r.	Worldwide; Recruitment via CARD and adverts placed on social media.
Lai et al. (2017)	60 ASD (n = 30 F, 30 M); sex/gender	F: 27.8 (7.6), 18-49 <sup>a</sup> ; M: 27.2 (7.3)	100	n.r.	F: 114.9 (13.8); M: 115.4 (14.1); WASI	n.r.	n.r.	n.r.	UK; Recruitment via CARD, referral from diagnostic clinics for adults with autism or Asperger's Syndrome and advertisements placed with national and local autism support organisations and support groups.



Cage et al. (2018)	111 ASD (n = 62 F, 28 M, 12 O, 1 TG, 1 N.R.); gender	36.4 (12.0), 18-72	90	31.4 (14.0)	n.r.	70 White British; 18 Other white background; 4 Mixed ethnicity; 1 Asian; 4 Other; 3 Prefer not to say	4 No qualifications; 9 1-4 GCSEs or equivalent; 7 5+ GCSEs or equivalent; 1 Apprenticeship; 11 2+ A-levels or equivalent; 31 Undergraduate degree; 24 Masters degree; 3 Doctoral degree; 8 Other qualifications; 4 Prefer not to say	51.4 Depression; 55.9 Anxiety; 31.5 Social anxiety; 16.2 Attention deficit hyperactivity disorder; 16.2 Obsessive compulsive disorder; 8.1 Post-traumatic stress disorder; 6.3 Bi-polar; 3.6 Tourette's syndrome	UK; Advertisements distributed via social media and autism organisations and groups.
Cassidy et al. (2018)	164 ASD (n = 99 F, 65 M); sex	F: 38.89, (10.47), 20-60 <sup>b</sup> ; M: 41.52, (11.73)	100	F: 35.06 (11.83); M: 34.55 (14.75)	n.r.	n.r.	n.r.	79.9 Depression; 71.3 Anxiety; 14.6 Obsessive compulsive disorder; 7.3 Bipolar disorder; 14 Personality disorder; 3.7 Schizophrenia; 5.5 Anorexia; 1.2 Bulimia; 7.9 Myalgic encephalopathy; 2.4 Tourettes; 3	Worldwide; Recruitment via CARD and adverts placed online.

								Epilepsy; 18.9 Other	
	169 TD (n = 115 F, 54 M); sex	F:41.48, (11.18), n.r.; M: 39.11, (10.09), n.r.							
Cage and Troxell-Whitman (2019)	262 ASD (n = 135 F, 111 M, O 12, 4 n.r.); gender	33.62, (11.52), n.r.	100	21.2% Under 18; 42.8% 18–34; 36% 35–64	n.r.	85.5 White; 8.4 Mixed/multi-ethnic; 2.7 Asian; 1.9 Other; 1.1 Prefer not to say	n.r.	51.9 Anxiety; 14.5 ADHD; 3.1 Bipolar; 50.8 Depression; 7.6 Obsessive compulsive disorder; 9.5 Post-traumatic stress disorder; 23.7 Social anxiety disorder; 1.9 Tourette's syndrome; 18.7 Other diagnosis	UK <sup>c</sup> ; Direct contact via autism charities and organisations and advertisements placed on social media.
Hull et al. (2019)	354 ASD (n = 179 F, 108 M, 17 O, 50 n.r.); gender	41.93, (13.55), 16-82 <sup>b</sup>	100	34.2 (n.r.)	n.r.	n.r.	n.r.	n.r.	UK <sup>c</sup> ; Recruitment via CARD and word of mouth.
	478 TD (n = 255 F, 192 M, 29 O); gender	30.24 (13.72)							
Lai et al. (2019)	57 ASD (n = 28 F, 29 M); sex	F: 28.19, (7.23), 18-45; M:26.59, (7.04), 18-41	100	n.r.	F: 114.46 (13.56); M: 114.14 (16.42); WASI	98 Caucasian; 2 Mixed Caucasian and other ethnic background	n.r.	n.r.; Adults with history or current psychotic disorders and substance use	UK; Recruited via CARD, referrals from diagnostic clinics for adults with autism or

	(n = 28 F, 29 M); gender							disorder excluded.	Asperger's Syndrome, and advertisements placed with national and local autism support organisations and support groups.
	62 TD (n = 29 F, 33 M)	F: 27.63, (6.40), 18-45; M: 27.94, (6.08), 18-42		n.r.		98 Caucasian; 2 Mixed Caucasian and other ethnic background	n.r.	n.r.	
Livingston, Shah, & Happé (2019)	77 ASD (n = 46 F, 21 M, 10 O); gender	D: 35.8, (11.5), 18-70; S.I.: 40.2, (11.1), 25-64	75.3	30.1 (13.8)	n.r.	n.r.	D: 4.7 (2.1); S.I.: 4.8 (1.9) <sup>d</sup>	13 Developmental disorders; 39 Anxiety disorders; 6.5 Obsessive-compulsive; 23.4 Depressive disorders; 1.3 Bipolar disorder; 1.3 Eating disorder; 3.9 Trauma/stress disorder; 5.2 Other	Worldwide; Advertisements distributed via social media and the UK National Autistic Society.

	59 TD (n = 51 F, 8 M); gender	33.9, (14.8), 18-77				4.7 (1.8) <sup>d</sup>		3.4 Developmental Disorder; 30.5 Anxiety disorder; 3.4 Obsessive- Compulsive; 20.3 Depressive disorder; 1.7 Bipolar disorder; 0 Eating disorder; 3.4 Personality disorder; 1.7 Trauma/stress disorder; 0 Schizophrenic disorder; 0 Other	
Schuck et al. (2019) gender	28 ASD (n = 11 F, 17 M); sex/gender	F: 33, (9.72), n.r.; M: 23, (4.09), n.r.	100	n.r.	F: 101 (16.01); M: 102 (16.77); Stanford- Binet Intelligence Scales, 5th Ed.	75 White; 7 Asian; 4 Hispanic; 14 Unknown	n.r.	n.r.	USA; Referral from the Autism and Developmental Disabilities Clinic at Stanford Children's Health and flyers placed at colleges.
	34 TD (n = 15 F, 19 M)	F: 28, (8.03), n.r. M: 26, (7.35), n.r.				11.8 White; 41.2 Asian; 5.9 Hispanic; 11.8 Black; 29.4 Unknown			

Beck et al. (2020)	58 ASD/ASD traits (n = 58 F); n.r.	25.2, (6.17), n.r.	31	55.6% childhood; 22.2% adolescence; 22.2% adulthood	F: 114.6 (11.27); WASI-II	94.8 White; 1.7 Black or African America; 1.7 Asian; 1.7 More than one race; 6.9 Hispanic or Latino	3.4 Some high school; 6.9 High school diploma or GED; 8.6 Associates degree; 46.6 College student; 25.9 Bachelor's degree; 8.6 Graduate degree	39.7 Generalized anxiety disorder; 31.0 Major depressive disorder; 17.2 ADHD; 15.5 Social anxiety disorder; 12.1 Obsessive-compulsive disorder; 6.9 Eating disorder; 5.2 Learning disorder; 5.2 Specific phobia; 3.4 Personality disorder; 1.7 Bipolar disorder; 1.7 Trichotillomania	USA; Advertisements distributed via mental health clinics and social media.
Brown et al. (2020)	350 ASD (n = 280 F, 3 M, 66 O); gender (n = 345 F, 4 M, 1 O); sex	36.21, (10.10), 18-72	100	n.r.	n.r.	80.9 Caucasian	n.r.	n.r.	USA; Advertisements placed on social media, online women's autism community and support groups.
	322 TD (n = 309 F, 1 M, 11 O); gender (n = 322 F); sex	34.83, (9.93), 18-72				84.5 Caucasian			

Cage and Troxell-Whitman (2020)	180 ASD (n = 93 F, 76 M, 9 O, 2 n.r.); gender	33.89, (11.21), n.r.	87.8	n.r.	n.r.	58.9 White-British; 26.7 White other background; 8.3 Mixed or multi-ethnic; 3.3 Asian or British-Asian; 1.7 Other ethnicities; 1.1 Prefer not to disclose	6.1 No qualifications; 10.0 Other qualifications; 23.4 High school qualifications; 32.8 Undergraduate degree; 23.9 Postgraduate degree; 3.9 Preferred not to say	n.r.	Worldwide; Advertisements distributed via social media, autism charities and organisations, and contacts via the university disability service.
Hull, Lai, et al. (2020)	306 ASD (n = 182 F, 108 M, 16 NB); gender	F: 39.91, (12.75), n.r.; M: 46.68, (13.98), n.r.; O: 33.50, (11.74), n.r.	100	F: 34.07 (13.13); M: 37.92 (15.99); O: 23.76 (13.08)	n.r.	n.r.	F: 36 Secondary school; 30 Undergrad; 33 Postgrad; 1 Not specified M: 35 Secondary; 28 Undergrad; 35 Postgrad; 2 Not specified Non-Binary = 66 Secondary; 17 Undergrad; 17 Postgrad; 0 Not specified	n.r.	Worldwide; Recruited via CARD, advertisements placed on social media, and word of mouth.



Cook et al. (2021)	17 ASD (n = 8 F, 6 M, 3 AG); gender	44.53 (12.03), 25-64	100	41.71 (12.18)	112.47 (4.65); TOPF	88.2 White; 5.9 Mixed; 5.9 Hispanic	5.8 A-levels; 44 Bachelor's degree; 41.2 Master's degree; 5.8 PhD	n.r.	UK; Recruited via adverts disseminated on social media and through autism support groups.
Hull et al. (2021)	305 ASD (n = 181 F, 104 M, 18 NB); gender  (n = 283 cisgender)	41.90 (CI: 40.37,43.43) <sup>f</sup> , 18-75	100	n.r.	n.r.	n.r.	n.r.	56.7 Generalised anxiety disorder; 54.4 Depression disorder; 2.3 Social anxiety disorder/social phobia diagnosis	Worldwide; Recruited via CARD and adverts placed on social media and with relevant UK based autism charities.
Perry et al. (2021)	223 ASD (n = 130 F; 53 M; 39 NB/O; 1 Prefer not to say); gender	34.19 (11), 18-65	100	28.67 (13.31)	n.r.	92.8 White; 3.1 Mixed; 1.3 Other; 0.4 Black; 2.2 prefer not to say	3.6 None; 11.7 High school; 22.4 College/sixth form; 4.9 Trade/vocational; 28.7 Undergraduate degree; 17 Masters degree; 6.7 Doctorate; 2.2 Other; 2.7 preferred not say	n.r.	Worldwide; Recruited via adverts shared on researcher's social media accounts, emails to UK-based autism community groups, charities, and word of mouth.
Child/Adolescent Studies									
Rynkiewicz et al. (2016)	33 ASD (n = 16 F, 17 M); sex/gender	F: 8.06, (1.57), n.r.; M: 8.23, (2.05), n.r.	100	n.r.	F (n = 13): 109.58 (11.70); M (n = 16): 112.31 (13.10); medical records	n.r.		n.r.	Poland; Recruited via child and adolescent mental health services and autism clinics.



Parish-Morris et al. (2017)	65 ASD (n = 16 F, 49 M); sex	F: 10.66, (1.55), n.r.; M: 9.73, (2.16), n.r.	100	n.r.	F: 104 (13); M: 106 (14); DAS-II	85 White	n.r.	USA; Recruitment via the Centre for Autism Research at the Children's Hospital of Philadelphia.
	17 TD	11.32, (2.21), n.r.			104 (15); DAS-II	n.r.		
Ormond et al (2018)	236 ASD (n = 98 F, 138 M); sex	n.r., (n.r.), 5-19	100	n.r.	n.r.	n.r.	F: 42.9 co-occurring diagnosis M: 39.1 co-occurring diagnosis	Australia; Clinic-based sample via specialist autism clinic.
Ratto et al. (2018)	228 ASD (n = 114 F, 114 M); sex	F: 10.11, (2.19), n.r.; M: 10.12, (2.15), n.r.	100	n.r.	F: 101.16 (19.14); M: 101.03 (18.67) WASI; WASI-II; WISC-IV; WISC-V; WAIS-IV; WPPSI-IV; DAS-II	73 White; 7 Black; 4 Asian; 5 Latino/a; 10 Other/unknown	n.r.	USA; Clinic-based and research-recruited samples via the Centre for Autism Spectrum Disorders at Children's National, the National Institute of Mental Health Laboratory of Brain and Cognition, the Centre for Autism Research at Children's Hospital of Philadelphia, and research and clinical programs at Virginia Tech, including the Centre for Autism Research.

Livingston, Colvert, et al. (2019)	136 ASD (n = 24 F, 112 M); gender	13.28, (0.93), 10-15	74.3	n.r.	low comp: 85.54 (20.60); high comp: 94.6 (17.58) deep comp: 101.88 (14.75); unknown: 97.11 (16.08); WASI	n.r.	n.r.	UK; Post-hoc analysis of data. Participants were originally recruited for the Twins Early Development Study and identified via birth records.
67 TD								
Corbett et al. (2020)	161 ASD (n = 46 F, 115 M); sex	F: 12.93, (1.80), 10:0-16:11; <sup>a</sup> M: 12.78, (2.03)	100	n.r.	F: 97.48 (17.3); M: 98.98 (18.5); WASI-II	n.r.	n.r.	USA; Post-hoc analysis of data. Data originally collected as part of a multisite randomized clinical trial targeting social skills. No further recruitment details reported.
Hull, Petrides & Mandy (2020)	58 ASD (n = 29 F, 29 M); n.r.	14.48, (1.74), 13-18	100	n.r.	100.85 (15.98); WASI-II	n.r.	n.r.	UK; Recruited via local National Health Service services, advertisements placed on social media, and word of mouth.

Jorgenson et al. (2020)	78 ASD (n = 23 F, 55 M); sex	15.03 (1.67); 13-18 <sup>b</sup>	100	n.r.	n.r.	n.r.	n.r.	USA; Recruited via specialty clinic for autism and neurodevelopmental disorders; SPARK database; advertisements placed on social media and local university email announcement.
	62 TD (n = 35 F, 27 M); sex	15.31 (1.65)						
Wood-Downie et al. (2020)	40 ASD/ASD traits (n = 18 F, 22 M); sex/gender	F: 10.12, (1.43), 7.92-13.42 M: 10.08, (1.75), 8.08-13.92	45	n.r.	F: 99.00 (15.68); M: 99.55 (17.58); WASI-II	n.r.	n.r.	UK; Recruited via Special Educational Needs Coordinators and/or Head Teachers from 16 mainstream primary schools and three mainstream secondary schools in the South of England.
	44 TD (n = 22 F, 22 M); sex/gender	F: 9.62, (1.01), 8.08-11.5 M: 10.50, (1.40), 8.58-14.42			F: 101.41 (14.18) n; M: 107.59 (12.36)			

Bernardin et al. (2021)	78 ASD (23 F, 55 M); sex	15.03 (1.68), 13-18 <sup>b</sup>	100	n.r.	n.r.	n.r.	n.r.	USA; Recruited via specialty clinic for autism and neurodevelopmental disorders; SPARK database; advertisements placed on social media and local university email announcement.
	62 TD (35 F, 27 M); sex	15.31 (1.65)						
Jedrzejska & Dewey (2021)	42 ASD (13 F, 26 M, 3 O); gender	14.1 <sup>c</sup> (n.r.), 13-19 <sup>b</sup>	100	n.r.	n.r.	n.r.	n.r.	UK; Recruited from 5 schools in London.
	158 TD (41 F, 110 M, 7 O); gender							

Note: n.r. = not reported; F = female; M = male; TG = transgender; NB = non-binary; AG = agender/gender neutral; O = other genders (study authors reported a range of genders included as 'other' such as non-binary, genderfluid, transgender male, and transgender female); D= formally diagnosed; S.I. = self-identifying; Low Comp = low compensation group; High Comp = high compensation group; Deep Comp = deep compensation group; Unknown= unknown group; WASI = Wechsler Abbreviated Scales of Intelligence; WASI-II = Wechsler Abbreviated Scales of Intelligence Second Edition; WISC-IV = Wechsler Intelligence Scale for Children Fourth Edition; WISC-V = Wechsler Intelligence Scale for Children Fifth Edition; WPPSI-IV = Wechsler Preschool and Primary Scale of Intelligence Fourth Edition; DAS-II = Differential Ability Scales, Second Edition; ToPF = Test of Premorbid Functioning; CARD = Cambridge Autism Research Database; SPARK = Simons Foundation Powering Autism Research for Knowledge

<sup>a</sup> age range for total ASD sample.

<sup>b</sup> age range for total ASD and TD sample combined.

<sup>c</sup> location based on first authors institution if location of study participants not specified in the article.

<sup>d</sup> mean and (SD) for International Standard Classification of Education.

<sup>e</sup> mean and (SD) calculated based on ASD and TD sample combined.

<sup>f</sup> 95% confidence interval.

<sup>g</sup> based on ASD and TD sample combined.

## Appendix F

### Camouflaging Autistic Traits Questionnaire (CAT-Q; Hull et al., 2019)

#### Self-Report Camouflaging of Autistic Traits Questionnaire

Please read each statement below and choose the answer that best fits your experiences during social interactions.

Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
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1. When I am interacting with someone, I deliberately copy their body language or facial expressions
2. I monitor my body language or facial expressions so that I appear relaxed
3. I rarely feel the need to put on an act in order to get through a social situation\*
4. I have developed a script to follow in social situations (for example, a list of questions or topics of conversation)
5. I will repeat phrases that I have heard others say in the exact same way that I first heard them
6. I adjust my body language or facial expressions so that I appear interested by the person I am interacting with
7. In social situations, I feel like I'm 'performing' rather than being myself
8. In my own social interactions, I use behaviours that I have learned from watching other people interacting
9. I always think about the impression I make on other people
10. I need the support of other people in order to socialise
11. I practice my facial expressions and body language to make sure they look natural
12. I don't feel the need to make eye contact with other people if I don't want to\*
13. I have to force myself to interact with people when I am in social situations
14. I have tried to improve my understanding of social skills by watching other people
15. I monitor my body language or facial expressions so that I appear interested by the person I am interacting with
16. When in social situations, I try to find ways to avoid interacting with others

Hull, L., Mandy, M., Lai, M-C., Baron-Cohen, S., Allison, C., Smith, P. & Petrides, KV. Development and Validation of the Camouflaging of Autistic Traits Questionnaire (CAT-Q) (2018). *Journal of Autism & Developmental Disorders*.

17. I have researched the rules of social interactions (for example, by studying psychology or reading books on human behaviour) to improve my own social skills
18. I am always aware of the impression I make on other people
19. I feel free to be myself when I am with other people\*
20. I learn how people use their bodies and faces to interact by watching television or films, or by reading fiction
21. I adjust my body language or facial expressions so that I appear relaxed
22. When talking to other people, I feel like the conversation flows naturally\*
23. I have spent time learning social skills from television shows and films, and try to use these in my interactions
24. In social interactions, I do not pay attention to what my face or body are doing\*
25. In social situations, I feel like I am pretending to be 'normal'

**Scoring:**

All items are scored 1-7, with higher scores reflecting greater camouflaging. Items with an asterisk (\*) should be reverse scored.

**Factors:**

Compensation (behaviours used to compensate for autism-related difficulties in social situations) = 1, 4, 5, 8, 11, 14, 17, 20, 23

Masking (behaviours used to hide autistic characteristics or present a non-autistic personality) = 2, 6, 9, 12, 15, 18, 21, 24

Assimilation (behaviours used to fit in with others/not stand out from the crowd) = 3, 7, 10, 13, 16, 19, 22, 25

## Appendix G

### IPR Interview Schedule

Thank-you again for participating in the study. For about the next half an hour or so you and I are going to discuss the conversation you just had with [the social partner]. I would like to audio-record our discussion so that I can really focus on what you are saying instead of trying to write down everything you say. Is this ok with you?

To start, I want to ask you about the conversation you just had with [the social partner].

1. How was that? How do you feel?
2. Do you think that conversation was similar to the kind of conversation you would usually have with someone you were meeting for the first time (someone you wanted to make a positive impression on)? If so, why? If not, why?
3. Now, I want to focus on any ways you may have consciously changed your behaviour during the conversation to make a positive impression on [the social partner]. What I mean is any strategies you may have used to for example (show card with below list printed on):
  - Reduce awkwardness
  - Impress [social partner's name]
  - Demonstrate that you were a responsible person
  - Appear likeable
  - Bond with [social partners' name]
  - To show your trustworthiness
  - To show your intelligence
  - To appear neurotypical/non autistic/ to fit in with [social partner's name]
4. Sometimes people refer to these strategies as camouflaging, compensating, passing, or masking. What would you refer to these strategies as? (Clarify as necessary that regardless of whether the participant thinks that any of above are/aren't camouflaging/compensating/passing/masking, for the rest of the interview I am interested



in exploring whatever the participant believes camouflaging/compensating/passing/masking is.)

5. How much do you think you engaged in camouflaging strategies (or what term the participant has chosen above i.e., camouflaging, compensating, passing, or masking) just now when talking to [the social partner]? (Show Likert scale 1-7)

1.	2.	3.	4.	5.	6.	7.
Never	Rarely	Occasionally	Sometimes	Frequently	Usually	All the time
	Less than 10% of the time	About 30% of the time.	About 50% of the time.	About 70% of the time.	About 90% of the time.	

6. How much do you think you would usually engage in camouflaging strategies when talking to a stranger for the first time? (Show Likert scale 1-7)
7. Now, we are going to watch back a recording of the conversation you just had with [the social partner] and I would like you to stop the video each time you use a camouflaging strategy. Then, I will ask you some questions about this. I am interested to learn more about how you camouflaged and in particular what you did to camouflage and what you were thinking when you were camouflaging. Please be assured, I am not judging or evaluating your social skills or social performance in any way when I watch the video. Please try to not worry whether you are doing a good job in the conversation. I am simply interested in your view of your camouflaging. (Clarify as necessary that I am interested in whatever the participant thinks camouflaging is. Reassure as necessary that the participant's social skills are not being evaluated.)
8. (When the participant stops the video.) What are you doing to camouflage here? (Following the participant's lead ask clarifying questions as necessary.)

Examples:

- Tell me more about that...

- Is this something you regularly do?
- Describe what you are thinking here?
- What are you feeling?
- Why are you doing this?

## Appendix H

### Ethics Approval Letter For Chapter 4 and 5

UCL RESEARCH ETHICS COMMITTEE  
OFFICE FOR THE VICE PROVOST RESEARCH



19<sup>th</sup> March 2019

Dr William Mandy  
Research Department of Clinical, Educational and Health Psychology  
UCL

Dear Dr Mandy

#### Notification of Ethics Approval with Provisos

Project ID/Title: 14839/001: An investigation of camouflaging in Autism Spectrum Disorder

Further to your satisfactory responses to my comments, I am pleased to confirm in my capacity as Chair of the UCL Research Ethics Committee (REC) that your study has been ethically approved by the UCL REC for the duration of the study until 19<sup>th</sup> March 2020 on condition that

1. Laura Bourne's DBS is provided for our records.
2. 'Test of Premorbid Functioning' – this is now mentioned in the Participant Information Sheet (PIL) but sounds intimidating. The PIL states that it is 'a short reading task' but there could be more information on what it involves e.g. it will take approximately 10 minutes and involve reading aloud about 70 words.

Ethical approval is also subject to the following conditions:

#### Notification of Amendments to the Research

You must seek Chair's approval for proposed amendments (to include extensions to the duration of the project) to the research for which this approval has been given. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing an 'Amendment Approval Request Form'

<http://ethics.grad.ucl.ac.uk/responsibilities.php>

#### Adverse Event Reporting – Serious and Non-Serious

It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator ([ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)) immediately the incident occurs. Where the adverse incident is unexpected and serious, the Joint Chairs will decide whether the study should be terminated pending the opinion of an independent expert. For non-serious adverse events the Joint Chairs of the Ethics Committee should again be notified via the Ethics Committee Administrator within ten days of the incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Joint Chairs will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

#### Final Report

At the end of the data collection element of your research we ask that you submit a very brief report (1-2 paragraphs will suffice) which includes in particular issues relating to the ethical implications of the research

Office of the Vice Provost Research, 2 Taviton Street  
University College London  
Tel: +44 (0)20 7679 8717  
Email: [ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)  
<http://ethics.grad.ucl.ac.uk/>

i.e. issues obtaining consent, participants withdrawing from the research, confidentiality, protection of participants from physical and mental harm etc.

In addition, please:

- ensure that you follow all relevant guidance as laid out in UCL's Code of Conduct for Research: <http://www.ucl.ac.uk/srs/governance-and-committees/resgov/code-of-conduct-research>
- note that you are required to adhere to all research data/records management and storage procedures agreed as part of your application. This will be expected even after completion of the study.

With best wishes for the research.

Yours sincerely



**Dr Lynn Ang**  
Joint Chair, UCL Research Ethics Committee

Cc: Dr Laura Crane, Julia Cook and Jessica Etherington

## Appendix I

### Examples of Thematic Analysis Process

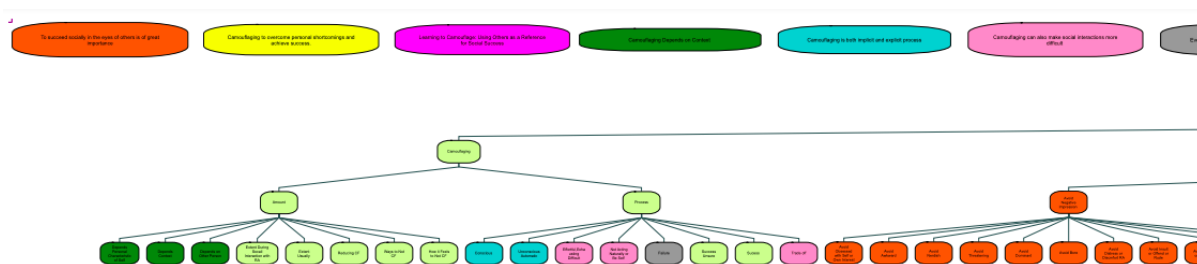
**Table 1, Appendix I**

*Example Code Summaries Including Code Name, Description, and Example Extract*

Code Name	Description	Example Extract
Trade Off	Using camouflaging strategies makes aspects of the interaction difficult (i.e., difficult to process information or think, or form conversational responses, or keep the conversation going).	PARTICIPANT: Oh right. Umm, it is not a question of giving myself permission to look away. It's a trade-off [mhm]. If I am trying to make a good impression umm with you I have two options, I carry on and look at you [mhm] and then I have less brain function [mhm] and so I will not be able to answer your question [yeah] or I will have less ability to process what you are saying. If I look away I can listen more and I can think more. So although in like in an interview of whatever where I am trying to pretend to not be autistic I think I would have to allow myself you know, I would make some eye contact as much as is possible but I have to allow myself otherwise I am just going to end up talking gibberish [yeah] and not answering your question which defeats the object of trying to make a good impression.
Difficulties Understanding and Reading Others	Having difficulties understanding others, reading others' social cues, being uncertain about others' social cues, or predicting how others will react.	PARTICIPANT: And I try to not get too deep into the snail business because <i>pause</i> you shouldn't get too deep into the snail business. INTERVIEWER: Why? PARTICIPANT: Because some people get bored. INTERVIEWER: I see. PARTICIPANT: But it's hard to tell when they're bored. <i>Laughs.</i>
Camouflaging Depends on the Person	Camouflaging changing in some way based on who the participant is socialising with.	PARTICIPANT: Hm [umm] it does really depend on the other person. Erm if the person is, if they make me feel very comfortable and if they're very open I will engage in that less [mhm] so perhaps maybe 30% [yep]. Um if the person is less open or if it seems to me like they're less likely to understand me then I will engage between 50 and 60 maybe [mhm]. There have definitely have been cases where I was about 90% but that's not as often. It really depends on the other person.

**Figure 1, Appendix I**

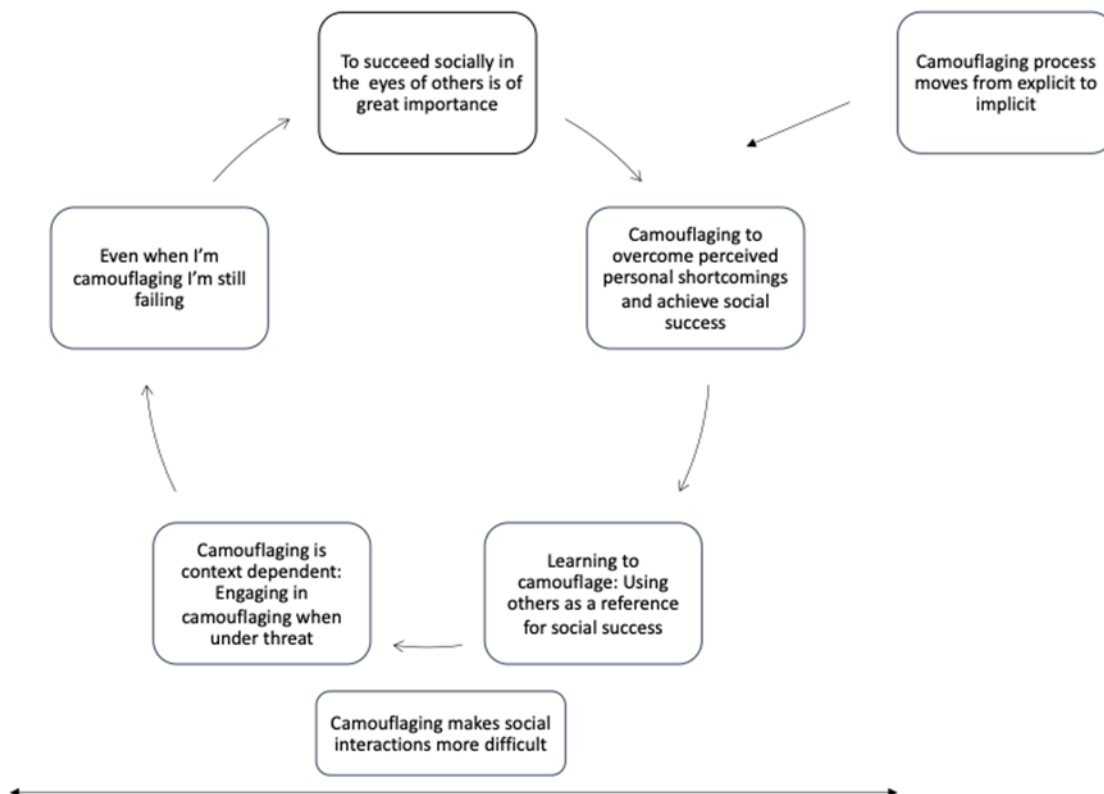
*Part of Mind Map Created Using NVivo 12 Software*



*Note.* The above is an example of a very early organisation of some codes using NVivo’s Mind Map function (partial screen shot). I did not find this function particularly helpful and so next I tried organising codes by printing code summaries (names, descriptions, and quotes) and arranging them on the floor.

**Figure 2, Appendix I**

*Example of Earlier Themes That Were Revised*



*Note.* At this stage in theme development, it became apparent that several potential themes (e.g., camouflaging process moves from explicit to implicit) were thin and lacked analytic depth. Thus, they were not themes or even subthemes but rather important codes that need to be incorporated into other themes.

## **Example Reflexive Journal Extracts**

### ***Reflection After Interview***

This anecdote the participant gave me today has made me feel quite emotional. She basically said that she was trying to connect with other Mums at her mothers' group. When they were having difficulties with their babies she would go and research the problem and come back with a bunch of answers. But the other Mums would then just say that she was a "know it all." I feel like my psychology clients have shared lots of similar stories- of trying so hard to connect with others and it not turning out the right way. It's such a familiar story. People just trying to connect to other people. It seems to me that is what many people want- just to connect to other people. To be denied something that's such a fundamental human need. It feels like this is important.

### ***Reflection During Theme Development***

Many participants talk about this type of socialising that is maybe the opposite to camouflaging? Authentic socialising- authentic seems to be the word used. I wasn't expecting this to come up in these interviews. Why? Well, I guess because the interviews focus on camouflaging so I thought that is what everyone would talk about. But of course when you are talking about an experience, something that often comes to mind is the opposite of that experiences. I guess that probably happens in lots of qualitative interviews. It makes it very interesting- you just don't know where it is going to go. Probably important to stick to the theme broadly but remember to explore things with people. If you have preconceived ideas about what people will talk about and you don't let them talk about other things you would miss really important stuff but then at the same time if you let people go off on tangents too much then you would have so much excess data that might not be helpful. I guess it's a balancing act. Ok, so why else? Perhaps camouflaging being context specific or only being triggered when under threat. Maybe this is something that is surprising to me because measures of camouflaging like the CAT-Q are not context specific so from that sense camouflaging as I know it is framed as this kind of trait thing. Although, I have seen it described as context dependent in qual work before.

## Appendix J

### Additional Examples of Content Analysis

**Table 1, Appendix J**

*Example Quotes For Each Code*

Behaviour	Example Quote
Masking	
Avoid or limit discussion related to oneself	<i>That's something that I do often to avoid talking about myself. (Male, 50-54 yo)</i>
Alter or reduce hand or arm movements	<i>I think that is a form of self-soothing behaviour I have definitely noticed me doing that before- ringing hands. I would say it is a slightly more socially acceptable form of stimming. My natural stimming would be hands out and kind of like the bouncing of the hands but that is less socially acceptable. (Female, 30-34 yo).</i>
Avoid specific facts and detailed information	<i>I read an article talking about the fact that yeah tomorrow is gonna be, they, it's predicted to be really hot and it's predicted to break records so I think immediately I thought about that article but I didn't want to bring it up because I thought, "Okay maybe it's too specific." (Female, 25-29 yo)</i>
Reduce body movements	<i>As soon as I first [start] rocking, "Oh woah calm down," and "I need it to stop, like stop, doing this." (Female, 35-39 yo)</i>
Avoid autism	<i>I would leave the autism out of the conversation all together. (Female, 50-54 yo)</i>
Appearance	<p>Participant: <i>...I do try and appear a bit more neurotypical visually.</i></p> <p>Interviewer: <i>Oh okay, can you tell me a bit what you mean by that?</i></p> <p>Participant: <i>Well I mean since my diagnosis, actually yeah since, actually I have tried to appear less quirky.</i></p> <p>Interviewer: <i>And what do you</i></p> <p>Participant: <i>I don't know if you agree with that?</i></p> <p>Interviewer: <i>What do you mean visually?</i></p> <p>Participant: <i>I just mean in the way I dress myself. (Male, 45-49 yo)</i></p>



Innocuous Socialising	
Passive Encouragement	
Eye contact	<i>I think I definitely noticed, not just here but throughout the whole conversation my eye contact. So I find the back and forth eye contact difficult sometimes so I tend to, in order to camouflage I look at the person's mouth. (Female, 30-34 yo)</i>
Mirror	<i>I remember me being very conscious of what [the social partner] was doing with her hands and trying to do something similar with my hands. (Female, 30-34 yo)</i>
Smile	<i>I was smiling at that point. (Male, 50-54 yo)</i>
Verbal minimal encouragers	<i>Saying OK. (Agender/gender neutral, 45-49 yo)</i>
Laugh	<i>And then I always laugh. (Agender/gender neutral, 40-44 yo)</i>
Centring Social Partner	
Focus on social partner	<i>Although I am genuinely interested, at an early stage of a conversation I try to ask about their own interests and about their career and that is the conversational strategy that I always try to employ over anything else. (Male, 50-54 yo)</i>
Social partner guides conversation	<i>There you can hear that, I was very much relying on [the social partner] to ask the questions rather than me initiate. (Female, 55-59 yo)</i>
Deferential Engagement	
Apologise for/justify social performance	<i>Well it's kind of an apology for not being able to answer what seems like a simple question. (Male, 50-54 yo)</i>
Seek approval/permission	<i>If people actually ask what I do as my job, that's the kind of question that I have trouble answering. So yeah, I'm also actually trying to say I think in all of this, as far as I'm concerned, you know I hope that's acceptable to you. (Male, 50-54 yo)</i>
Be cooperative	<i>If I couldn't avoid people, to stay in the background, to be as un-intrusive as possible. If that wasn't a practical solution then to be as cooperative, as friendly, as undemanding and as amenable as possible with other people. (Male, 60-64 yo)</i>
Reduce Social Risks	

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Avoid causing offence or distress	<i>Then I get frustrated and then I will check myself to try and say, so I don't say something inappropriate like, "Are you stupid? You know I have just said this." (Male, 55-59 yo)</i>
Small talk	<i>Just making small talk. (Agender/gender neutral, 45-49 yo)</i>
Avoid or limit honest, direct communication	<i>I would much rather talk about academic subjects with people. Really, I don't care really what they are you know, what their children or their families, or if their grandmother. You know someone wanted to show me a picture of their grandchildren, happened to me yesterday, "Do you want to see a picture of my granddaughter?" Oh, she didn't really ask, "Oh I have got a picture of my granddaughter here," gets her phone. Couldn't care less. But I'm aware don't say, "Couldn't care less about your grandchildren." So, if they say would you like to see a picture of my children? "Love to!" I wouldn't - I'd hate to but you know. (Male, 55-59 yo)</i>
Avoid discussion of others' personal and private lives	<i>I generally do my best to steer very clear of anything that is a bit person and it might have been a personal topic and I am not sure. (Male, 50-54 yo)</i>
Avoid controversy	<i>I know that you avoid politics, I know you avoid religion, unless you trust someone. Probably cos otherwise you go down this debate that's not a good idea. So I tend to find neutral topics to talk about. (Female, 35-39 yo)</i>
Avoid appearing knowledgeable	<i>I know maybe too much too well so just pretend you don't know that much that well. (Female, 35-39 yo)</i>
Avoid jokes	<i>A lot of the time if I think something's funny, other people don't, so I tend not to say. (Female, 35-39 yo)</i>

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Modelling Neurotypical Communication	
Gestures	<i>So I was nodding. (Agender/gender neutral, 45-49 yo)</i>
Body Language	<i>Just, just looking at the video like I was trying to focus on sort of being relaxed and sitting sort of normally. (Agender/gender neutral, 20-24 yo)</i>
Clear verbal communication	<i>Slowing my voice down and trying to sound, speak more clearly, speak less fast. (Agender/gender neutral, 20-24 yo)</i>
Facial expressions	<i>I try to make sure that my facial expressions are a little bit more extreme now so if I am trying to express something I'll just exaggerate it a little bit more then feels comfortable to make sure that I am getting my point across and they understand what I am trying to say. (Agender/gender neutral, 40-44 yo)</i>
Speech Intonation	<i>Okay so I would change my tone and I would make it more variant. (Male, 45-49 yo)</i>
Active Self Presentation	
Ask questions	<i>I'm always worried about what people think about me [that's] probably why I ask them lots of questions because I thought that was the way to be nice. (Female, 50-54 yo)</i>
Maintain and build conversation	<i>I think in there, so she asked me, "How was your journey?" so I said "It's okay" and I would normal- I don't- I think normally I would stop at that but I carried on like adding comments such as, "Oh it's close to work". (Female, 25-29 yo)</i>
Find and discuss points of commonality	<i>The reason I'm talking about that is, that is our point of connection. (Female, 25-29 yo)</i>
Keep balance between listening and talking	<i>I can keep it in a kind of controlled you to me to you to me exchange. (Agender/gender neutral, 40-44 yo)</i>
Share factual information	<i>Right, she might not know who L.S. Lowry is, most people I talk to will know the name but she might not so I provided that information quite deliberately. (Male, 55-59 yo)</i>
Jokes and humorous anecdotes	<i>I mean sometimes I might sort of camouflage [in] the meeting in a sort of like one liner in a sense like a joke or something you know. (Female, 50-54 yo)</i>

Disclose personal information *Maybe I shouldn't have perhaps launched in to the fact that I'm actually sort of like a lot of my time is taken up caring for me Mum cos it might have given [the social partner] the impression that I was just here to sort of off load and so on you know but by the same token I just wanted perhaps for her to understand what's most important in my life. (Male, 55-59 yo)*

Disclose weaknesses *One of the ways to make people feel at ease is to talk about a weakness that they can relate to. (Agender/gender neutral, 40-44 yo)*

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Comfortable topics *So this is where, so the mention of [retracted] to try and redirect the conversation on to a topic that I feel safe on and can talk about and therefore avoid the weird pauses. (Female, 30-34 yo)*

Scripts *A rehearsed one liner there. (Male, 45-49 yo)*

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Note: To aid with readability minor speech errors have been correct. Each example quote is accompanied by text in parenthesis indicating the participants' gender and age range.

## Appendix K

## Ethics Approval Letter for Chapter 6

UCL RESEARCH ETHICS COMMITTEE  
OFFICE FOR THE VICE PROVOST RESEARCH



9<sup>th</sup> January 2020

Professor William Mandy  
Division of Psychology and Language Sciences  
UCL

Cc: Julia Cook, Laura Crane and Rebecca Bundy

Dear Professor Mandy

**Notification of Ethics Approval with Provisos**

**Project ID/Title: 14839/002: A longitudinal investigation of camouflaging in Autistic Adults**

Further to your satisfactory responses to the Committee's comments, I am pleased to confirm in my capacity as Joint Chair of the UCL Research Ethics Committee (REC) that your application has now been ethically approved by the UCL REC until 1<sup>st</sup> December 2022.

Approval is granted on condition that data collection does not commence until you have secured ethics approval from the ethics board at the Institute for Sustainable Development in Chennai, India to obtain in-country ethics approval.

Ethical approval is also subject to the following conditions:

**Notification of Amendments to the Research**

You must seek Chair's approval for proposed amendments (to include extensions to the duration of the project) to the research for which this approval has been given. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing an 'Amendment Approval Request Form'  
<http://ethics.grad.ucl.ac.uk/responsibilities.php>

**Adverse Event Reporting – Serious and Non-Serious**

It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator ([ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)) immediately the incident occurs. Where the adverse incident is unexpected and serious, the Joint Chairs will decide whether the study should be terminated pending the opinion of an independent expert. For non-serious adverse events the Joint Chairs of the Ethics Committee should again be notified via the Ethics Committee Administrator within ten days of the incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Joint Chairs will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Office of the Vice Provost Research, 2 Taviton Street  
University College London  
Tel: +44 (0)20 7679 8717  
Email: [ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)  
<http://ethics.grad.ucl.ac.uk/>

**Final Report**

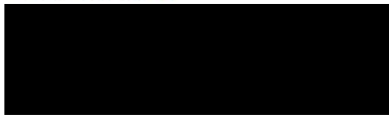
At the end of the data collection element of your research we ask that you submit a very brief report (1-2 paragraphs will suffice) which includes in particular issues relating to the ethical implications of the research i.e. issues obtaining consent, participants withdrawing from the research, confidentiality, protection of participants from physical and mental harm etc.

In addition, please:

- ensure that you follow all relevant guidance as laid out in UCL's Code of Conduct for Research: <https://www.ucl.ac.uk/srs/file/579>
- note that you are required to adhere to all research data/records management and storage procedures agreed as part of your application. This will be expected even after completion of the study.

With best wishes for the research.

Yours sincerely



**Professor Michael Heinrich**  
Joint Chair, UCL Research Ethics Committee

**Appendix L****ULS-8 Loneliness Scale (Hays & DiMatteo, 1987)**

Never (1)	Rarely (2)	Sometimes (3)	Always (4)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

\* reverse scored

## Appendix M

## Results of Analyses for Subsample who Completed Survey Before UK Lockdown

Table 1, Appendix M

*Hierarchical Regression Predicting Number of Friends in Pre-Lockdown Sample (N = 281)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 276	1.00	.41	.01	.000				
Age	-0.13	-0.35	0.03	0.11	-.08	.17									
Cisgender men	3.36	-4.34	15.62	3.66	.06	.56									
Sex/gender diverse people	0.45	-4.99	6.00	2.90	.01	.88									
AQ	0.77	-0.04	1.70	0.71	.07	.11									
Step 2							5, 275	1.19	.31	.02	.003	1, 275	1.93	.17	.01
Age	-0.14	-0.39	0.04	0.11	-.08	.19									
Cisgender men	2.72	-5.83	14.96	3.68	.05	.64									
Sex/gender diverse people	-0.01	-6.63	6.24	2.92	.000	1.0									
AQ	0.89	0.09	1.82	0.71	.08	.08									
CAT-Q	-0.08	-0.27	0.06	0.06	-.09	.34									
Step 3							7, 273	1.44	.19	.04	.01	2, 273	2.03	.13	.01
Age	-0.13	-0.37	0.04	0.11	-.08	.22									
Cisgender men	-7.98	-58.49	72.10	21.69	-.14	.80									
Sex/gender diverse people	-34.62	-91.84	2.14	17.42	-.74	.13									
AQ	0.90	0.10	1.79	0.71	.08	.08									
CAT-Q	-0.17	-0.47	0.003	0.08	-.17	.15									
CAT-Q x Cisgender men	0.08	-0.49	0.44	0.17	.18	.69									
CAT-Q x Sex/gender diverse people	0.27	0.02	0.58	0.14	.74	.14									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.



**Table 2, Appendix M***Logistic Regression Predicting Close Friendship Status in Pre-Lockdown Sample (N=281)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
<b>Model 1</b>								5	6.27	.28	.03			
Age	-0.01	0.01	1.54	.22	0.99	.97	1.01							
Cisgender men	-0.50	0.37	1.84	.18	0.61	.30	1.25							
Sex/gender diverse people	-0.48	0.29	2.61	.11	0.62	.35	1.11							
AQ	-0.02	0.07	0.10	.76	0.98	.85	1.13							
Genetic condition	0.83	0.61	1.88	.17	2.30	.70	7.58							
<b>Model 2</b>								6	8.08	.23	.04	1.00	1.81	.18
Age	-0.02	0.01	1.84	.18	0.99	.97	1.01							
Cisgender men	-0.56	0.37	2.28	.13	0.57	.28	1.18							
Sex/gender diverse people	-0.53	0.30	3.16	.08	0.59	.33	1.06							
AQ	-0.01	0.07	0.02	.90	0.99	.86	1.14							
Genetic condition	0.93	0.62	2.29	.13	2.54	.76	8.46							
CAT-Q	-0.01	0.01	1.78	.18	0.99	.98	1.00							
<b>Model 3</b>								8	9.87	.27	.05	2.00	1.79	.41
Age	-0.02	0.01	1.87	.17	0.99	.96	1.01							
Cisgender men	-3.28	2.23	2.16	.14	0.04	.00	2.97							
Sex/gender diverse people	-2.00	1.81	1.23	.27	0.14	.004	4.67							
AQ	-0.004	0.07	0.003	.95	1.00	.86	1.15							
Genetic condition	0.93	0.62	2.26	.13	2.53	.75	8.47							
CAT-Q	-0.02	0.01	3.19	.07	0.99	.97	1.00							
CAT-Q x Cisgender men	0.02	0.02	1.52	.22	1.02	.99	1.06							
CAT-Q x Sex/gender diverse people	0.01	0.01	0.66	.42	1.01	.98	1.04							

Note: <sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 3, Appendix M**

*Hierarchical Regression Predicting Friendship Length in Those who had a Close Friendship in Pre-lockdown Sample (N = 161)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							5, 155	8.49	<.001	.22	.19				
Age	0.40	0.25	0.56	0.07	.45	.001									
Cisgender men	3.36	-0.56	7.34	2.36	.11	.09									
Sex/gender diverse people	0.13	-3.66	3.80	1.88	.01	.94									
AQ	-0.37	-1.24	0.38	0.43	-.06	.38									
Genetic condition	2.70	-2.88	8.68	3.01	.07	.36									
Step 2							6, 154	7.05	<.001	.22	.19	1, 154	0.11	.74	.001
Age	0.40	0.25	0.56	0.07	.45	.001									
Cisgender men	3.41	-0.47	7.55	2.37	.11	.09									
Sex/gender diverse people	0.17	-3.61	3.84	1.89	.01	.93									
AQ	-0.39	-1.29	0.40	0.43	-.07	.38									
Genetic condition	2.59	-3.09	8.61	3.03	.06	.39									
CAT-Q	0.01	-0.06	0.10	0.04	.02	.76									
Step 3							8, 152	5.40	<.001	.22	.18	2, 152	0.56	.58	.01
Age	0.40	0.25	0.57	0.07	.45	.001									
Cisgender men	16.00	-15.66	36.02	14.69	.50	.19									
Sex/gender diverse people	9.06	-12.57	39.93	11.81	.36	.47									
AQ	-0.40	-1.35	0.42	0.43	-.07	.36									
Genetic condition	2.80	-2.92	8.90	3.07	.07	.36									
CAT-Q	0.04	-0.07	0.15	0.05	.08	.50									
CAT-Q x Cisgender men	-0.10	-0.25	0.17	0.12	-.39	.29									
CAT-Q x Sex/gender diverse people	-0.07	-0.31	0.11	0.09	-.36	.46									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.

**Table 4, Appendix M***Logistic Regression Predicting Social Isolation in Pre-lockdown Sample (N=281)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								4	5.01	.29	.03			
Age	0.03	0.02	4.69	.03	1.03	1.00	1.07							
Cisgender men	0.28	0.55	0.26	.61	1.32	0.45	3.86							
Sex/gender diverse people	-0.12	0.47	0.06	.80	0.89	0.36	2.22							
AQ	0.02	0.11	0.03	.85	1.02	0.82	1.27							
Model 2								5	5.34	.38	.04	1.00	0.33	.57
Age	0.04	0.02	4.86	.03	1.04	1.00	1.07							
Cisgender men	0.32	0.55	0.34	.56	1.38	0.47	4.07							
Sex/gender diverse people	-0.08	0.47	0.03	.86	0.92	0.37	2.32							
AQ	0.01	0.11	0.02	.90	1.01	0.81	1.27							
CAT-Q	0.01	0.01	0.32	.57	1.01	0.99	1.02							
Model 3								7	6.59	.47	.04	2.00	1.25	.54
Age	0.04	0.02	5.21	.02	1.04	1.01	1.07							
Cisgender men	3.28	3.11	1.11	.29	26.50	0.06	11718.08							
Sex/gender diverse people	-1.11	3.00	0.14	.71	0.33	0.001	117.84							
AQ	0.01	0.11	0.003	.95	1.01	0.81	1.25							
CAT-Q	0.01	0.01	0.39	.53	1.01	0.98	1.03							
CAT-Q x Cisgender men	-0.02	0.03	0.92	.34	0.98	0.93	1.03							
CAT-Q x Sex/gender diverse people	0.01	0.02	0.13	.72	1.01	0.96	1.05							

Note: <sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 5, Appendix M***Logistic Regression Predicting Relationship Status in Pre-Lockdown Sample (N=281)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								4	25.53	<.001	.12			
Age	0.02	0.01	4.29	.04	1.02	1.00	1.05							
Cisgender men	-1.64	0.45	13.32	<.001	0.19	0.08	0.47							
Sex/gender diverse people	0.17	0.30	0.35	.56	1.19	0.67	2.12							
AQ	-0.01	0.07	0.03	.87	0.99	0.86	1.14							
Model 2								5	31.76	<.001	.14	1.00	6.24	.01
Age	0.03	0.01	5.15	.02	1.03	1.00	1.05							
Cisgender men	-1.56	0.45	11.83	.001	0.21	0.09	0.51							
Sex/gender diverse people	0.26	0.30	0.77	.38	1.30	0.72	2.35							
AQ	-0.04	0.08	0.27	.60	0.96	0.83	1.11							
CAT-Q	0.02	0.01	6.06	.01	1.02	1.00	1.03							
Model 3								7	32.17	<.001	.14	2.00	0.41	.82
Age	0.03	0.01	4.99	.03	1.03	1.00	1.05							
Cisgender men	-1.66	3.12	0.28	.59	0.19	0.00	85.90							
Sex/gender diverse people	1.36	1.79	0.58	.45	3.90	0.12	130.57							
AQ	-0.04	0.08	0.27	.61	0.96	0.83	1.12							
CAT-Q	0.02	0.01	5.15	.02	1.02	1.00	1.03							
CAT-Q x Cisgender men	0.001	0.02	.001	.97	1.00	0.96	1.05							
CAT-Q x Sex/gender diverse people	-0.01	0.01	0.39	.53	0.99	0.97	1.02							

Note: <sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 6, Appendix M**

*Hierarchical Regression Predicting Relationship Length for Those in a Current Relationship in Pre-lockdown Sample (N = 146)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 141	17.56	<.001	.33	.31				
Age	0.50	0.33	0.63	0.06	.57	.001									
Cisgender men	1.18	-2.58	5.39	3.02	.03	.53									
Sex/gender diverse people	0.08	-2.67	2.68	1.45	.004	.96									
AQ	0.48	-0.16	1.15	0.38	.09	.14									
Step 2							5, 140	14.46	<.001	.34	.32	1, 140	1.71	.19	.01
Age	0.52	0.35	0.68	0.06	.59	.001									
Cisgender men	1.36	-2.90	6.16	3.01	.03	.52									
Sex/gender diverse people	0.42	-2.53	3.45	1.47	.02	.76									
AQ	0.37	-0.35	1.14	0.39	.07	.32									
CAT-Q	0.04	-0.03	0.12	0.03	.10	.18									
Step 3							7, 138	10.63	<.001	.35	.32	2, 138	1.04	.36	.01
Age	0.52	.358	.68	0.06	.60	.001									
Cisgender men	37.51	11.88	70.69	26.38	.86	.001									
Sex/gender diverse people	5.49	-13.13	24.54	9.10	.26	.55									
AQ	0.38	-.34	1.14	0.39	.07	.32									
CAT-Q	0.06	-.02	.15	0.04	.14	.13									
CAT-Q x Cisgender men	-0.28	-.68	-.05	0.20	-.84	.001									
CAT-Q x Sex/gender diverse people	-0.04	-.17	.01	0.07	-.24	.57									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity

**Table 7, Appendix M***Logistic Regression Predicting Employment Status in the Pre-Lockdown Sample (n = 281)*

	Predictor Statistics				Odds Ratio	CI		Model statistics			Change statistics			
	B	SE	Wald	p		Lower	Upper	DF	X <sup>2</sup>	p	R <sup>2a</sup>	DF	X <sup>2</sup>	p
Model 1								4	4.93	.30	.02			
Age	0.01	0.01	0.30	.58	1.01	.99	1.03							
Cisgender men	-0.34	0.37	0.86	.36	0.71	.35	1.46							
Sex/gender diverse people	-0.29	0.29	0.99	.32	0.75	.42	1.32							
AQ	-0.12	0.07	2.91	.09	0.88	.77	1.02							
Model 2								5	5.61	.41	.03	1.00	0.68	.41
Age	0.01	0.01	0.24	.62	1.01	.99	1.03							
Cisgender men	-0.38	0.37	1.05	.31	0.69	.33	1.41							
Sex/gender diverse people	-0.32	0.29	1.18	.28	0.73	.41	1.29							
AQ	-0.12	0.07	2.54	.11	0.89	.77	1.03							
CAT-Q	-0.01	0.01	0.68	.41	1.00	.98	1.01							
Model 3								7	6.08	.53	.03	2.00	0.47	.79
Age	0.01	0.01	0.29	.59	1.01	.99	1.03							
Cisgender men	0.39	2.22	0.03	.86	1.48	.02	113.70							
Sex/gender diverse people	-1.14	1.77	0.41	.52	0.32	.01	10.29							
AQ	-0.12	0.07	2.62	.11	0.89	.77	1.03							
CAT-Q	-0.01	0.01	0.54	.46	0.99	.98	1.01							
CAT-Q x Cisgender men	-0.01	0.02	0.13	.72	0.99	.96	1.03							
CAT-Q x Sex/gender diverse people	0.01	0.01	0.22	.64	1.01	.98	1.03							

Note: <sup>a</sup> R<sup>2</sup> = Nagelkerke R<sup>2</sup>

**Table 8, Appendix M***Hierarchical Regression Predicting Job Length for Those Currently Employed in Pre-lockdown Sample (N = 149)*

	B	CI		SE B	$\beta$	p	DF	F	p	R <sup>2</sup>	R <sup>2</sup> Adj	Change statistics			
		Lower	Upper									DF	$\Delta F$	p	$\Delta R^2$
Step 1							4, 144	14.19	<.001	.28	.26				
Age	0.31	0.21	0.42	0.04	.51	.001									
Cisgender men	0.26	-1.98	2.33	1.51	.01	.81									
Sex/gender diverse people	2.66	0.31	5.22	1.17	.16	.03									
AQ	0.23	-0.40	0.81	0.28	.06	.39									
Step 2							5, 143	11.34	<.001	.28	.26	1, 143	0.23	.64	.001
Age	0.31	0.21	0.42	0.05	.51	.001									
Cisgender men	0.14	-2.28	2.47	1.53	.01	.91									
Sex/gender diverse people	2.61	0.15	5.27	1.18	.16	.04									
AQ	0.24	-0.34	0.81	0.28	.06	.36									
CAT-Q	-0.01	-0.78	0.05	0.02	-.04	.71									
Step 3							7, 141	8.10	<.001	.29	.25	2, 141	0.30	.74	.003
Age	0.31	0.22	0.42	0.05	.51	.001									
Cisgender men	-1.27	-16.93	14.21	9.31	-.06	.86									
Sex/gender diverse people	-2.52	-20.85	16.99	6.70	-.16	.75									
AQ	0.25	-0.32	0.83	0.28	.06	.33									
CAT-Q	-0.02	-0.11	0.67	0.03	-.07	.62									
CAT-Q x Cisgender men	0.01	-0.11	0.13	0.08	.07	.84									
CAT-Q x Sex/gender diverse people	0.04	-0.67	0.15	0.05	.32	.51									

*Note.* Bootstrapping was used to generate robust confidence intervals and significance test of models owing to notable heteroscedasticity.











## Appendix N

### Cognitive Interview Guide

The following is a semi-structured interview guide was developed following recommendations set out in Willis (2005). When necessary the interviewer will ask the participant follow up questions to clarify their responses.

1. The interviewer will share their screen with the participant. The participant will be shown the instructions for the demographic and autistic traits section of the questionnaire.

**Q.** In your own words, can you tell me what the introduction is telling you?

2. Participants will be shown each demographic/autistic trait question in turn. Participants will be instructed to read the question. They will then be asked to answer the question aloud.

Next participants will be asked the following questions:

**Q.** How easy was that question for you to answer? Can you tell me more about that? (assess response difficulty)

1	2	3	4	5
Very easy		Neither easy nor difficult		Very difficulty

**Q.** Could this question be improved in anyway?

3. The participant will be shown the instructions for the qualitative section of the questionnaire.

**Q.** In your own words, can you tell me what the introduction is telling you?

4. Participants will be shown each qualitative question in turn. Participants will be instructed to read the question. They will then be asked to answer it aloud. Next participants will be asked the following questions:

**Q.** Can you tell me in your own words what that question is asking? (assesses comprehension)

**Q.** How easy was that question for you to answer? Can you tell me more about that? (assess response difficulty)

1	2	3	4	5
Very easy		Neither easy nor difficult		Very difficulty

5. If participants' answers to either (1) the original qualitative question or (2) the above probes indicate a word or phrase within the qualitative questions is ambiguous or vague:

**Q.** What does the word/phrase (*insert word/phrase*) mean to you as it is used in this question? (assess comprehension of specific definitions)

6. If participants' answers to either (1) the original qualitative question or (2) the above probes indicate the question is not readily comprehensible:

**Q.** How would you word this question or how would you improve this question?

7. If participants' answers to either (1) the original qualitative question or (2) the above probes indicate the participant thinks the question does not apply to them:

**Q.** How well does that question apply to you? Can you tell me more about that?

8. Once this procedure has been completed for all qualitative questions:

**Q.** Did the order of the questions cause you any difficulties?

**Q.** Was there any question that caused you to feel offence or distress?

**Q.** Is there anything else you would like to say about the survey questions or the survey generally?

## Appendix 0

### Qualitative Survey Questions

#### Instructions

In the following section, you will find questions about your social experiences. Some questions in this section ask about challenging or difficult social experiences. Thinking about these questions could make some people have negative thoughts or feel upset. You do not have to answer any of these questions if you do not feel comfortable answering them. Most of these questions ask you to type your answer in the response box. Any information you give us here will be helpful. But we find it especially helpful for understanding your experiences if you can give us detailed descriptions and specific examples - if you can. It does not matter if you do not use correct spelling or grammar. At any point (until you submit the survey) you can return to earlier questions/responses and edit them. Remember if you get tired or you need to do something else, you can save this survey and work on it again another time.

#### Questions

Some autistic people feel they need to change their natural or usual social behaviour when socialising, talking, or interacting with other people in order to fit in, cope, or get by. There are many, many different ways in which autistic people may do this. A few examples include:

- Stopping one's stimming hand movements
- Forcing eye contact even if it feels uncomfortable
- Changing one's tone of voice
- Avoiding talking about one's hobbies or interests
- Avoiding talking about oneself all together
- Using rehearsed or practiced conversational scripts, jokes, or anecdotes

This is sometimes called camouflaging, masking, or passing. In this survey, we will use the term camouflaging to mean camouflaging, masking, or passing.

1. Do you ever camouflage when interacting with other people?

- Yes
- No

**Definition:** By interacting we mean any situation in which two or more people are communicating (e.g., two or more people talking in person, talking over the phone, or via video calling or communicating by text via instant messaging, texting, or emailing).

2. Overall, how aware of your camouflaging are you?

1	2	3	4	5
I am almost never aware				I am almost always aware

If you prefer, please feel free to explain in your own words

3. Over the last year, how frequently have you tried to camouflage when interacting with other people?

1	2	3	4	5
Almost never				Almost always

If you prefer, please feel free to explain in your own words

4. How as the pandemic impacted your camouflaging over the last year?

5. Over your lifetime, has the frequency with which you camouflage when interacting with others changed?

- Yes, overall it has decreased
- Yes, overall it has increased
- No, overall it has stayed the same
- Other (please describe): \_\_\_\_\_

If you prefer, please feel free to explain in your own words

If the frequency of your camouflaging has changed:

6. Can you please tell us more about how your camouflaging has changed over time? We're interested to know things like:
- a. When you started camouflaging
  - b. When the frequency of your camouflaging changed
  - c. Why the frequency of your camouflaging changed

Some autistic people say that they don't always change their natural or instinctive social behaviour when interacting with others. They say that around certain people they feel less pressure or need to camouflage. Instead, they feel they can be more like their natural, authentic, or true self.

7. Are there certain people with whom you feel you can be a more like your natural, authentic, or true self?
- Yes
  - No

If you prefer, please feel free to explain in your own words

8. If yes, who are these people?

Please note, we do not require the specific names of people, just your relationship to them (i.e. friend, partner, co-worker).

9. Why do you feel you can be more like your natural, authentic, or true self around these people?

When you are with people that you feel like you, can you be more like your natural, authentic, or true self around...

10. What do you do or how do you behave? Please feel free to provide specific details and examples.
11. How is this different to what you do or how you behave when you are camouflaging?



Some (but not all) autistic people report that when they interact with non-autistic people they experience sensory or social difficulties. When you are with non-autistic people with whom you feel like you can be more like your natural, authentic, or true self.....

12. What (if anything) do you do about any sensory needs or difficulties you may have? For example, any needs or difficulties you may have related to your sense of hearing, touch, smell, or sight. I am interested in any needs or difficulties you may have related to your sense of hearing, touch, smell, or sight.

- N/A there are no non-autistic people in my life that I can be more like more natural, authentic, or true self around.

13. What (if anything) do you do about any social needs or difficulties you may have? For example, needs or difficulties you may have related to:

- Understanding other people's verbal communication (e.g., sarcasm, jokes, white lies, or vague/ambiguous language)
  - Understanding other people's non-verbal communication (e.g., their facial expressions, body language, or gestures)
  - Becoming fatigued or tired from socialising
  - Interacting with several people at the same time
- N/A there are no non-autistic people in my life that I can be more like more natural, authentic, or true self around.

Overall, in your everyday life.....

14. What (if any) are the advantages/benefits of being your natural, authentic or true self when interacting with others (i.e., not camouflaging/masking/passing)?

15. What (if any) are the disadvantages/risks of being your natural, authentic, or true self when interacting with others (i.e., not camouflaging/masking/passing)?

16. When interacting with you, what should a non-autistic person (e.g. family member, friend, co-worker) do in order to be welcoming, accepting, and/or helpful?
17. When interacting with you, what should a non-autistic person (e.g. a family member, friend, co-worker) avoid doing in order to be welcoming, accepting, and/or helpful?
18. Please feel free to give any other comments below that you may have about:
- a) camouflaging
  - b) being your more natural, authentic, or true self.

If No to Q1 but yes to Q2 (i.e. the participant indicates they have never camouflaged):

Some (but not all) autistic people report that when they interact with non-autistic people they experience sensory or social difficulties. When you are interacting with non-autistic people....

19. What (if anything) do you do about any sensory needs or difficulties you may have? For example, any needs or difficulties you may have related to your sense of hearing, touch, smell, or sight.
20. What (if anything) do you do about any social needs or difficulties you may have? For example, needs or difficulties you may have related to:
- Understanding other people's verbal communication (e.g. sarcasm, jokes, white lies, or vague/ambiguous language)
  - Understanding other people's non-verbal communication (e.g. their facial expressions, body language, or gestures)
  - Becoming fatigued or tired from socialising
  - Interacting with several people at the same time
21. How would you rate your experiences of interacting with non-autistic people?

1	2	3	4	5
Almost always negative		Neither positive nor negative		Almost always positive

Please feel free to provide additional comments about your experiences of interacting with non-autistic people.

When interacting with non-autistic people.....

22. What (if any) are the advantages/benefits of not camouflaging your autistic characteristics?

23. What (if any) are the disadvantages/risks of not camouflaging your autistic characteristics?

24. When interacting with you, what should a non-autistic person (e.g. family member, friend, co-worker) do in order to be welcoming, accepting, and/or helpful?

25. When interacting with you, what should a non-autistic person (e.g. a family member, friend, co-worker) avoid doing in order to be welcoming, accepting, and/or helpful?

26. Is there anything else you would like to say?

## Appendix P

## Ethics Approval Letter for Chapter 7

UCL RESEARCH ETHICS COMMITTEE  
OFFICE FOR THE VICE PROVOST RESEARCH



2<sup>nd</sup> December 2020

Professor William Mandy  
Research Department of Clinical, Educational and Health Psychology  
UCL

Cc: Julia Cook and Laura Crane

Dear Professor Mandy

**Notification of Ethics Approval with Provisos**  
**Project ID/Title: 14839/003: The Autistic Social Coping Study**

Further to your satisfactory responses to the Committee's comments, I am pleased to confirm in my capacity as Chair of the UCL Research Ethics Committee (REC) that your study has been ethically approved by the UCL REC until 2<sup>nd</sup> December 2021.

Ethical approval is subject to the following conditions:

**Notification of Amendments to the Research**

You must seek Chair's approval for proposed amendments (to include extensions to the duration of the project) to the research for which this approval has been given. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing an 'Amendment Approval Request Form'

<http://ethics.grad.ucl.ac.uk/responsibilities.php>

**Adverse Event Reporting – Serious and Non-Serious**

It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator ([ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)) immediately the incident occurs. Where the adverse incident is unexpected and serious, the Joint Chairs will decide whether the study should be terminated pending the opinion of an independent expert. For non-serious adverse events the Joint Chairs of the Ethics Committee should again be notified via the Ethics Committee Administrator within ten days of the incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Joint Chairs will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

**Final Report**

At the end of the data collection element of your research we ask that you submit a very brief report (1-2 paragraphs will suffice) which includes in particular issues relating to the ethical implications of the research i.e. issues obtaining consent, participants withdrawing from the research, confidentiality, protection of participants from physical and mental harm etc.

Office of the Vice Provost Research, 2 Tavilton Street  
University College London  
Tel: +44 (0)20 7679 8717  
Email: [ethics@ucl.ac.uk](mailto:ethics@ucl.ac.uk)  
<http://ethics.grad.ucl.ac.uk/>

In addition, please:

- ensure that you follow all relevant guidance as laid out in UCL's Code of Conduct for Research: <https://www.ucl.ac.uk/srs/file/579>
- note that you are required to adhere to all research data/records management and storage procedures agreed as part of your application. This will be expected even after completion of the study.

With best wishes for the research.

Yours sincerely



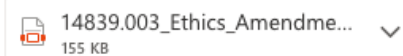
Professor Lynn Ang  
Joint Chair, UCL Research Ethics Committee



VPRO.Ethics

Mon 20/12/2021 11:41

To: Cook, Julia



Dear Julia, Your attached extension request has been approved. Please take this email as confirmation of that approval with the extension of ethics approval until **31/03/2022**.

***IMPORTANT: For projects collecting personal data only***

*You should inform the Data Protection (DP) Team – [data-protection@ucl.ac.uk](mailto:data-protection@ucl.ac.uk) of your proposed amendments, including requests to extend ethics approval for an additional period. Please ensure that you quote your DP registration number when you correspond with the Team.*

Best wishes, Helen

Helen Dougal

UCL Research Ethics Co-ordinator

Office of the Vice-Provost (Research, Innovation and Global Engagement)



## Appendix Q

### Examples of Thematic Analysis Process

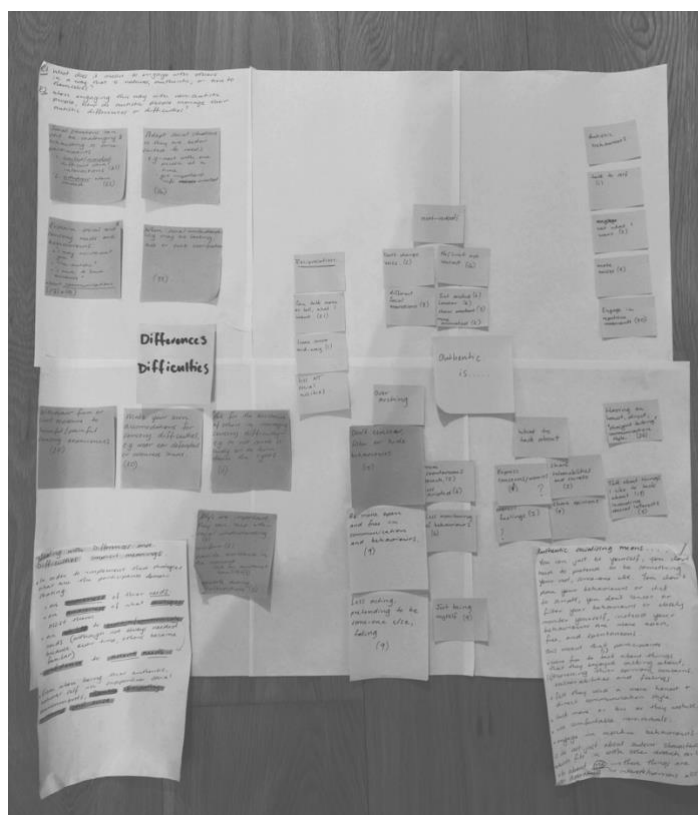
**Table 1, Appendix Q**

*Example Code Summaries Including Code Name, Description, and Example Extract*

Code Name	Description	Quotes
Believe me and don't minimise autistic needs and differences	Believe that autistic people have different social needs and be helpful in assisting them to make the accommodations that they need.	<p><i>"Also they should believe our experience of noise and sensory problems and not just assume we're being difficult for the sake of it"</i></p> <p><i>"Trust that if I say something is overwhelming or I don't something that I am being genuine....."</i></p>
Don't be offended	Be less emotional, (offended and upset) in the face of miscommunication. Don't assume I am being rude on purpose.	<p><i>"Take my interactions at face value and work with the default assumption I am honest and will-intentioned, not that there is a hidden meaning to anything I say, or that I am deliberately rude or [I] think badly of them if I don't react in the way they necessarily expect."</i></p> <p><i>"They should not be offended if I make mistakes"</i></p>
Awareness of needs increasing authenticity	Participants' descriptions of authentic socialising suggested they possessed a strong awareness of their social and sensory needs as well as an understanding of personally beneficial coping strategies.	<p><i>"My improved self-awareness has prompted me to seek out communities where I feel comfortable (especially the autistic community) and in these circles I do not feel the need to camouflage nearly as much."</i></p> <p><i>"I have been more aware lately as people keep telling me that I appear more autistic now than when I was younger. It is difficult to disagree with other people's perceptions but for me it is more about being aware of myself and my needs and not having the energy to camouflage any more, than being more autistic."</i></p>

**Figure 1, Appendix Q**

*Part of Mind Map Used During Theme Development*



*Note.* This picture depicts one of five posters used to organise and make sense of codes during theme development.

**Table 2, Appendix Q**

*Summary of Initial Themes*

Theme	Name
1.	What authentic socialising is
2.	The course of authenticity
3.	The role of the social partner in authentic-feeling socialising
4.	The Joys of Authentic Socialising

*Note.* Above are the very first theme ideas I discussed with W.M. and L.C. It quickly became apparent that these were not themes, rather they were topic summaries or 'bucket themes' (i.e., everything participants said about certain topics, rather than patterns of shared meaning) and thus substantial, further engagement with the data was required.



## **Illustrative Reflective Journal Extracts**

### ***Reflections on Codes***

I am really surprised that some of the things participants want non-autistic people to do just seem like good communication skills. This is pretty ironic. I guess I am surprised because I am non-autistic and in this predominately non-autistic world non-autistic social skills are taken as the default- as standard- as generally pretty good (in comparison to autistic people). I wonder if in interactions, non-autistic people dismiss the feedback of autistic people about their communications skills – like, “oh, you just don’t understand social communication- I am actually communicating well”.

### ***Reflection on Codes***

Today I am thinking that I had a bit of a preconceived idea that authentic socialising would mostly be about opening up more. Like being able to talk more, share more about who you are, how you feel, what you like etc. But one of the ideas that came up multiple times was being able to talk less. Why did I have this preconceived idea? I guess my own experience is contrasting. When I feel nervous or awkward in a social situations than I talk less and share less about myself and who I am and my interests and background etc. And when I am not feeling anxious or stressed then I notice that I am much more open and chatty. This seems like an important thing to note of- how my experiences of feeling anxious or nervous in a social situation impact upon my ability to be authentic. I have an experience of being more or less authentic in social situations, this means I have some preconceived ideas and assumptions.

### ***Reflection Whilst Checking Themes Against Transcripts***

I am thinking about this idea in the data that being able to engage in authentic ways depends on both autistic and non-autistic people. I am worried that this is an idea I am putting on to the data rather than it emerging from the data. Why I am worried about this? I guess because this is something that I thought would emerge in the data based on my other thematic analysis. I guess that it is OK to have some preconceived ideas- the important thing is that you note what these are.

You can't have no ideas about what you might find in the data that's just not possible you're not a robot. I have noted that I thought this pattern might emerge in the data. It has but because I am aware that I have a pre-conceived idea about this I have returned to the data to make sure it is in the data and not that I put it there. It's definitely in the data