



Autistic camouflaging across the spectrum[☆]

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ABSTRACT

Camouflaging may be characterized as a set of actions and strategies more or less consciously adopted by some autistic people to navigate the neurotypical social world. Despite the increased interest that this phenomenon has garnered, its nature remains elusive and in need of conceptual clarification. In this paper, we aim to put forward an inclusive view of camouflaging that does justice to its complexity while also reflecting the heterogeneity of autism as a condition. First, we offer an overview of the main characterizations of camouflaging. This overview shows that current characterizations fail to paint a cohesive picture, and that different accounts emphasize different aspects of the phenomenon. Second, we explore the analogy between camouflaging and passing, which we take to be illuminating to describe some forms of camouflaging, while probably obscuring the study of others. Third, we extend the discussion about camouflaging to currently understudied groups across the autistic spectrum – i.e., children, and adults with linguistic and/or intellectual disabilities. We argue that camouflaging in such groups may differ from what the current literature describes as typical instances of camouflaging. We conclude by revisiting the nature of camouflaging in light of such understudied groups, and we offer some suggestions on how to move research forward.

1. Introduction

Autistic spectrum conditions are characterized by difficulties in the domain of social interaction and communication across several contexts. Some common challenges include initiating and maintaining conversations, sharing interests or emotions, understanding relationships, and responding appropriately to social interactions (APA, 2022). Some autistic people report adopting specific strategies to navigate the neurotypical social world, to the point that they appear non-autistic or less autistic in some circumstances. This phenomenon has come to be known in the literature as *camouflaging*, *masking*, or *compensation* (Hull et al., 2017; Lai et al., 2017; Livingston et al., 2019; Pearson & Rose, 2021; Sedgewick et al., 2021), although it currently escapes a general

definition (Williams, 2021; Ai et al., 2022; see Cook et al., 2021 for a recent comprehensive review). Camouflaging and related phenomena have been also thoroughly discussed in first-person accounts on various platforms including books, blogs, online magazines, and social media campaigns (see Holliday-Willey, 1999; Nirode, 2019; the #takethemaskoff campaign for a few examples).¹

The burgeoning literature on camouflaging tends to characterize the phenomenon in different ways, underscoring a significant degree of complexity. In this paper, we aim to put forward an inclusive view of camouflaging that does justice to such complexity while also reflecting the heterogeneity of autism as a condition. In §1 we offer an overview of the main characterizations being offered in the literature, and we focus on how different researchers describe the construct. This overview

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¹ Many authors of first-person accounts and many participants in recent studies on camouflaging identify as women. This fact has brought some researchers to see camouflaging as a potential explanation of why women have been underdiagnosed or misdiagnosed with autism throughout history (Baldwin & Costley, 2016; Bargiela et al., 2016; Hiller et al., 2016). However, other researchers challenge this idea both by pointing at experiences of camouflaging in people who do not identify as women (Pearson & Rose, 2021), or by stressing potential self-selection issues in existing studies (Fombonne, 2020). More evidence is therefore needed before we can establish whether camouflaging should be seen as a primarily female phenomenon.

shows that current characterizations fail to paint a cohesive picture, and that different accounts emphasize different – at times value-laden – aspects. In §2 we explore the analogy between camouflaging and passing, which we take to be illuminating to describe the dynamics involved in some forms of camouflaging. Yet, we are wary of some recent attempts at stretching such an analogy too broadly. In §3 we extend the discussion about camouflaging to currently understudied groups across the autistic spectrum. These are children, and adults who – because of different verbal and intellectual abilities – do not usually self-report about their own camouflaging. Finally, in §4 we revisit the nature of camouflaging in light of such understudied groups, and we offer some suggestions on how to move research forward.

1.1. State of the art

Given that systematic research on camouflaging is still relatively recent, it is unsurprising to witness several characterizations that emphasize different aspects of the construct. A quick review of the existing literature shows that multiple dimensions of camouflaging are discussed in different studies, including aims (Livingston & Happé, 2017; Hull et al., 2017), degree of success (Lai et al., 2021), contexts in which camouflaging occurs (Cage & Troxell-Whitman, 2019), strategies being used (Livingston et al., 2019), and degrees of consciousness and effort involved (Pearson & Rose, 2021). Notably, some of these dimensions feature more or less directly in the way in which camouflaging is characterized. This is particularly prominent in the case of *aims*, as several accounts of camouflaging describe the phenomenon by referring to its hypothesized purposes. As Williams (2021) puts it: “Camouflaging is a multidimensional construct that is bound together only by the intended goal of its constituent behaviors (i.e., to appear less overtly autistic” (p. 2). This mostly originates from the results of initial qualitative studies devised to explore the phenomenon (Hull et al., 2017, 2019), where individuals who self-reportedly camouflaged are asked to define their experience. Responses tend to fall into two main themes: camouflaging was experienced as a way of *hiding* or *masking* autistic traits (e.g., avoid stimming in public), and as a *compensatory* behavior including a range of more or less deliberate strategies to manage social situations (e.g., employing scripts for different social scenarios).² Based on the results of these and other qualitative studies, masking and compensating have come to be understood as the two core components of camouflaging (Cook et al., 2021; Hull et al., 2021).

This conceptual difference between masking and compensation should not be seen as tracking a real dichotomy, as it is plausible that most episodes of camouflaging are a blend of both ingredients: the person effortfully implements some strategies to navigate social contexts, while at the same time trying to conceal some traits. One of these ingredients may prevail over the other depending on a host of factors: in some cases, fear of being stigmatized or excluded may be the main driving force; in other cases, trying to feel good with others might take precedence. Complexity in terms of aims is also underscored by results obtained through quantitative measures, such as the Camouflaging

Autistic Traits Questionnaire or CAT-Q, a 25-item self-report questionnaire aimed at measuring camouflaging attempts, efforts, or intentions (see Hull et al., 2019). Other measures, known as discrepancy measures, are targeted more directly at compensation as they aim to compare an individual’s observed behavior (e.g., in a diagnostic setting) with their social-cognitive performance (e.g., scores on a theory of mind or executive functioning task).

Overall, both quantitative and qualitative studies report a complex picture, with some respondents emphasizing that they camouflage to avoid appearing autistic in front of others, while others stress the need for social contact (see Libsack et al., 2021; Cook et al., 2021 for some recent reviews). This may very well vary across contexts: an autistic child may camouflage at school mostly – maybe even uniquely – out of fear, whereas the same child may camouflage with the main purpose of fitting in when interacting with their longtime friends. Available data confirm significant variation in this respect, with individuals who report camouflaging in a wide range of formal and informal contexts (e.g., at work, with strangers, online, with a romantic partner) and individuals who report different degrees of “switching” among contexts (Cage & Troxell-Whitman, 2019).³

Starting from the core components of masking and compensating, researchers have further refined their characterizations to include varying degrees of *depth*. For instance, Livingston and Happé (2017) distinguish between *shallow* and *deep* compensation. The former is supposed to encompass more rigid and superficial strategies (e.g., mimicking other people’s behavior in social settings), while the latter comprises more flexible skills and the effortful generation of novel social responses to navigate difficult situations (e.g., rely on one’s cognitive strengths – such as memory or attention to detail – to bypass social difficulties). Such a finer-grained classification – along with qualitative data collected by the same research group (Livingston et al., 2019) – allows for a potentially significant distinction between masking and compensation behaviors. Masking could be seen as a form of shallow compensation, mostly characterized by hiding autistic traits and by regulating one’s behavior to make it more acceptable by neurotypical standards (e.g., avoiding social events, refraining from participating in a conversation, suppressing gestures – see Appendix in Livingston et al., 2019 for more examples). Deep compensation would rather involve the creation of novel strategies and the generation of complex behaviors that are responsive to the social setting at hand (e.g., creating and updating catalogs or scripts to interpret other people’s behavior, see Rose’s description of their Memory Rolodex® as an example - Rose, 2017).

The *impact* of camouflaging on mental health has also been discussed extensively, especially in relation to the high levels of psychiatric symptoms experienced by autistic individuals, most notably anxiety, depression, and burnout (Hollocks et al., 2019; Hull et al., 2021; Miller et al., 2021; Cage & Troxell-Whitman, 2019 - see Belcher et al., 2022 for a study on the impact of camouflaging on impressions). Existing self-reports describe the consequences of camouflaging in a variety of ways. Many respondents qualify the experience as exhausting (Bradley

² An alternative way of cashing out the distinction between hiding and compensating might be to talk about *negative* versus *positive* camouflaging behaviors, where the former imply suppressing something (e.g., stimming) and the latter requires an addition to one’s behavioral repertoire (e.g., forcing eye contact) – see Foss-Feig et al., 2016 for a similar proposal regarding other features of autism.

³ Context thus appears to be another dimension of camouflaging that should be explored in more depth, also to better understand which social contexts are experienced as more (or less) effortful or harmful for autistic people (Cage et al., 2022; Pearson & Rose, 2021). Several other dimensions of camouflaging have been mentioned to varying degrees in the literature and are worth exploring in more detail. For instance, we need a better understanding of whether different degrees of *consciousness* are involved in different people or in the same person across different contexts (Pearson & Rose, 2021), as well as of the potentially different degrees of cognitive-emotional *effort* (Bradley et al., 2021; Raymaker et al., 2020) and *authenticity* involved (Bradley et al., 2021; Lawson, 2020).

et al., 2021; Hull et al., 2017), cognitively taxing, or difficult to keep up for extended periods of time (Livingston et al., 2019). Others describe camouflaging as an adaptive coping mechanism which has allowed them to survive and accomplish important goals and to employ necessary social skills (Bradley et al., 2021; Hull et al., 2017; Miller et al., 2021). Still others express an ambivalent attitude towards camouflaging (see Bradley et al., 2021; Lawson, 2020 for some first-person accounts).

We suggest that different characterizations of camouflaging have an effect on how researchers understand its impact on mental health. Researchers who make a distinction between masking and compensation, for instance, tend to hold a more positive view of the latter with respect to masking, which is seen as an ineffective and ultimately detrimental strategy. On their view, masking is unlikely to be kept up in the long run and might give rise to burnout or anxiety issues, whereas deep compensation has the potential to become “second nature” over time (p. 6 - Livingston et al., 2019). Livingston and colleagues seem willing to grant that some cases of camouflaging may result in potentially adaptive trajectories: “Despite clinical implications, our findings suggest that previous research might have overemphasized the negative aspects of compensation. Many participants reported that compensation was fundamental to fulfilling life experiences and deemed their strategies successful” (p. 11).

By contrast, researchers who focus on camouflaging *qua* masking tend to hold a mostly negative view of the phenomenon. In these accounts, camouflaging is primarily characterized as a form of “concealing an autistic identity” (Cage & Troxell-Whitman, 2020) with a more pronounced emphasis on “hiding or masking aspects of oneself from others” (Cage & Troxell-Whitman, 2019) or suppressing behavior that would be classified as divergent by neurotypical standards (Pearson & Rose, 2021). Some authors – such as Pearson and Rose (2021) – propose a broader characterization of masking that includes the suppression of behaviors as well as the production of a range of alternatives. However, generally speaking, researchers who do not sharply distinguish between masking and compensation – or who are critical of the notion of compensation altogether⁴ – tend to share the view that camouflaging has a predominantly negative impact and stress its correlations with suicidality, burnout, and poorer mental health outcomes (Cage et al., 2022; McCracken, 2021; Pearson & Rose, 2021; Radulski, 2022).

In the next section we assess whether camouflaging may be better understood through the analogy of *passing*, as it has been proposed in some recent contributions (Pearson & Rose, 2021; Ai et al., 2022; Libsack et al., 2021). Although the analogy with passing allows us to describe camouflaging as a complex and heterogeneous phenomenon, we argue that we should be wary of overstretching it. In fact, the analogy is unlikely to be applicable to currently understudied groups across the autistic spectrum (see §3 and §4).

2. Camouflaging as passing

Some recent accounts have suggested understanding autistic camouflaging as a form of *passing as neurotypical* (Libsack et al., 2021; Pearson & Rose, 2021; Perry et al., 2022; Radulski, 2022). The notion of

passing has been explored in sociology as well as gender and race studies, and refers to a person’s ability to be regarded as a member of an identity group or category different from their own (Goffman, 1959/2002).⁵ Specifically, what is usually known as “full-fledged passing” (Renfrow, 2004) is connected to the notion of stigma and involves members of disadvantaged groups who are perceived and treated as members of an advantaged group. One core aspect of this phenomenon consists in *hiding important aspects* of one’s identity (known as “master statuses” - see Goffman, 1963/2009), such as one’s ethnicity, gender, disability, etc. Full-fledged cases of passing also tend to be described as cognitively and emotionally costly. While some instances of passing may include elements of deception, others may be seen as acts of self-preservation, especially in the context of unfair demands about revealing intimate aspects of one’s identity (Samuels, 2003).

The analogy between passing and camouflaging is undoubtedly illuminating in some respects. Both passing and camouflaging involve different aims and give rise to significant trade-offs in terms of well-being. Existing accounts of camouflaging *qua* passing tend to emphasize its negative consequences in terms of mental health – e.g. exhaustion, burnout – while occasionally mentioning its “external” advantages – e.g., avoiding bullying (Pearson & Rose, 2021, p. 8). This view is connected to the idea that camouflaging would be primarily a response to autism-related stigma (Cage et al., 2022; Perry et al., 2022; see also Lawson, 2020 on adaptive morphing), and thus something that could be ameliorated by radically changing the socio-cultural as well as material conditions that force people to adopt passing behaviors in the first place (Radulski, 2022).

Yet, other available accounts of passing – such as the one proposed by Silvermint (2018) – offer a more nuanced view of the phenomenon. Far from being uniquely positive or negative, permissible or impermissible, passing may be characterized as a coping strategy with upsides and downsides, and thus as a situational and context-dependent response to challenging circumstances. Given this complexity, different instances of passing may give rise to significant trade-offs among multiple constituents of wellbeing (Silvermint, 2018, p. 38). Similarly, the effects of camouflaging are likely to vary significantly depending on the situation. Passing as neurotypical, for instance, may provide someone with significant advantages in educational or professional settings. Despite being effortful and potentially increasing risk of experiencing anxiety and burnout, camouflaging may also allow someone to create significant social bonds and forge meaningful relationships. In these cases, it is particularly hard to draw a sharp distinction between “internal” and “external” advantages, as feedback loops are likely to occur. For instance, given that lack of social contact plays an important role in the development of anxiety and depression in the autistic population (Schiltz et al., 2021), some instances of camouflaging may contribute to alleviating loneliness and to improving overall wellbeing as a result.

Yet, we should be wary of overstretching the analogy between

⁴ One issue with the term “compensation” is that it appears to endorse a deficit model of autism, where some alleged dysfunction – e.g., in theory of mind abilities – has to be bypassed through different means – e.g., memory, inferential abilities, etc. This view additionally betrays the problematic assumption that the neurotypical social world should work as the normative standard to which everyone has to conform.

⁵ Following another strand of Goffman’s work (1959 & 1963), some recent proposals attempt to connect camouflaging with *impression management* (or IM) – that is, a more general human tendency to foster favorable impressions of the self in others during social interactions (Ai et al., 2022; Schneid & Raz, 2020). We cannot discuss such proposals in detail in this paper, although we plan to take this up in future work. One key question surrounding the relationship between IM and camouflaging concerns whether we should understand these behaviors as being on a spectrum, or whether autistic camouflaging would rather present some qualitatively different aspects. Some existing accounts propose to see the two phenomena as differing in terms of degree of effort, intensity, and scope (Ai et al., 2022; Lai et al., 2021). Others push back against the idea of strong continuity by stressing that camouflaging – as opposed to IM – implies “hiding one’s true self” in a stronger and more detrimental sense (Pearson & Rose, 2021, p. 10). Notably, this is partly an empirical question that cannot be settled with available data, given that very few studies to date have compared autistic and neurotypical populations across IM or camouflaging measures (see Miller et al., 2021; Livingston et al., 2020 for some exceptions).

camouflaging and passing. In our view, experiencing camouflaging as passing rests on two conditions. First, as we mention above, full-fledged passing is usually taken to imply that one is concealing a master status, that is a central aspect of one's identity. This implies that – for camouflaging to count as a form of passing – one has to regard “being autistic” as something integral to one's identity. Although this is undoubtedly the view put forward by several researchers and activists, especially within the neurodiversity paradigm (Botha et al., 2020; Radulski, 2022), the claim may not be equally applicable across the autistic spectrum. In other words, camouflaging would not be experienced as passing by people who – for one reason or another – fail to regard “being autistic” as a core aspect of their identity.⁶ Second, passing as neurotypical implies the possibility of hiding one's autistic status in the first place. Such a possibility – similarly to what happens in cases of passing along ethnic or gender boundaries – would be primarily available to some subgroups of individuals, such as non-stereotypical members whose behavior does not immediately signal their status (Silvermint, 2018). If this is correct, many autistic people probably do *not* experience camouflaging as passing. Some members will be more visible and thus not in the position to hide or engage in deep compensation moves (see also Milton 2013 on this point). Incidentally, these individuals are also more likely to be underrepresented in the current literature.

In the next section we explore a broader notion of camouflaging, one that focuses on autistic people who experience camouflaging in different ways with respect to the passing analogy just described. We argue that such a broader view is needed both for methodological reasons – i.e., to make the research on camouflaging more inclusive – and for theoretical ones. Indeed, by characterizing all instances of camouflaging as a form of passing, we risk adopting too narrow of a focus on the phenomenon and unduly limiting our conceptions of what camouflaging looks like as a consequence. It is possible to object that the cases of people whose behavior does not *prima facie* fall under the notion of passing, are nonetheless cases of people *trying* to pass as neurotypicals without succeeding (see also Belcher et al., 2022). While this might be the case, we have to be cautious about attributing such intention to people whose goals appear to be narrower, such as being able to enjoy more circumscribed social situations. In principle, characterizing such cases as attempts to pass as neurotypical does not seem to be the most natural way to describe them.

3. Towards a more inclusive view

3.1. Limitations of current studies

In this section we discuss some limitations exhibited by the methodologies and measurement tools employed to study autistic camouflaging. As we mention in §1, research on this phenomenon is mostly approached by means of scales or questionnaires that focus on specific strategies, aims, contexts, and impact on mental health (Hull et al., 2019; Cage & Troxell-Whitman, 2019; Livingston et al., 2019). Although other measures of camouflaging are employed – such as discrepancy measures – most published studies rely on either qualitative descriptions of lived experiences, or on a combination of qualitative and quantitative measures that often includes the administration of the abovementioned questionnaires (see Libsack et al., 2021 for a review of existing methodologies).

⁶ Borderline cases are also possible: take a person who is aware of exhibiting autistic traits or behaviors (e.g., special interests) but who has not yet been diagnosed with autism. Although this person might very well enact camouflaging strategies (e.g., pretending to be interested in topics that other people find interesting), they would probably not consider being autistic as a core aspect of their identity. It is unclear whether this would qualify as a case of full-fledged passing, or rather as a more subtle form of impression management that might be continuous with nonclinical experiences.

Measurement tools based on self-report are undoubtedly important, but they leave out a high proportion of people on the spectrum, including people who camouflage unconsciously, children, and people with different intellectual and/or linguistic abilities – e.g., people with a concomitant intellectual disability or language impairment. Setting aside unconscious camouflagers,⁷ available data on age and intellectual ability confirm that current studies are including only a small portion of autistic individuals. For instance, although a number of studies have included autistic youths and children, the average age of participants is around 12 years old,⁸ making young children one of the most underexplored groups within the spectrum. Data on intellectual abilities are even more striking, given that nearly all studies analyzed in systematic reviews formally or informally exclude participants with intellectual disability, and many even fail to report information about intellectual abilities of their participants (Libsack et al., 2021, pp. 803–804. See also Cook et al., 2021; Appendix C). Similarly, linguistic abilities are rarely considered among the factors worth exploring, although they are likely to have a significant impact on the camouflaging strategies that one can adopt. Although autistic individuals with co-occurring intellectual and/or linguistic disabilities are systematically underrepresented, they do make up a significant proportion of individuals on the spectrum. For instance, Tager-Flusberg and Kasari (2013) Tager-Flusberg and Kasari (2013) report an estimate of 20–30% of non-verbal or minimally verbal autistic people. Data on intellectual disability widely oscillate between 16,7%–84% (Postorino et al., 2016), with global estimates suggesting a proportion of approximately 50% (Russell et al., 2019).⁹

These limitations have a methodological as well as theoretical impact on camouflaging as a construct. One obvious issue concerns the *generalizability of the results*, as available conclusions cannot be reasonably applied to a significant portion of the autistic population (Fombonne, 2020). As long as we do not know how camouflaging is experienced by more diverse groups of people on the spectrum, any existing conclusion should be interpreted with caution. We are aware that this reflects broader inclusivity issues in autism research (Pellicano et al., 2014), but failure to acknowledge heterogeneity seems to have particularly unfortunate consequences in the case of camouflaging. Indeed, as opposed to research focused on one aspect of autism as a condition – e.g., whether autism ‘as such’ is characterized by differences in theory of mind abilities – studies on camouflaging are interested in how autistic individuals try to navigate the neurotypical social world. If the focus is on the individuals' experience in a particular domain, lack of inclusivity is bound to be even more problematic.

One significant example concerns the relationship between camouflaging and *mental health*. As we mention above, several studies report a correlation between camouflaging and adverse mental health outcomes

⁷ Although it is plausible to assume that a good deal of camouflaging happens *unconsciously*, the construct of unconscious camouflaging is particularly difficult to investigate, both methodologically (e.g., it is not accessible through introspection) and theoretically – e.g., one could argue that completely successful camouflaging should simply not be identified as such, or that camouflaging always requires a gap between observed behavior and inner awareness. Despite this complexity, people at times realize that they have been camouflaging in hindsight (e.g., through the diagnosis of their child – see Holliday-Willey, 1999) or they become able to label their experience more accurately now that the construct of camouflaging is available (similarly to what happened with other constructs, such as ‘sexual harassment’ or ‘stalking’).

⁸ This has been obtained by averaging the two results reported by the most comprehensive systematic reviews to date: Cook et al. (2021) report a sample ranged from 5 to 18 years with a mean age of 11.9 in studies on children, while Libsack et al. (2021) report an average age of 11.8 years in studies on youth between 2 and 17 years of age.

⁹ Precise estimates on the co-occurrence of autism and intellectual disability are particularly hard to come by, exactly because of the widespread selection bias and systematic under-recruiting that we describe in the case of camouflaging (see Russell et al., 2019 for a general overview).

such as anxiety, depression, and burnout. Take Hull et al.'s recent study on camouflaging and anxiety (2021), whose participants are autistic adults without intellectual disability who are aware of their own camouflaging (N = 305; age range: 18–75). This study found a linear correlation between self-reported camouflaging and anxiety: individuals who scored ≥ 125 on the CAT-Q also showed the highest scores on measures of generalized anxiety and depression, while individuals who scored ≥ 75 exhibited higher scores on a measure of social anxiety. Given the characteristics of the sample involved, which fails to be representative of the heterogeneity of autism as a condition, there is a clear issue with generalizability. As a consequence, it is unclear whether autistic people who are excluded by current research would experience camouflaging in similar ways, also in connection with anxiety.

Moreover, studies investigating the relationship between camouflaging and mental health tend to be *cross-sectional* in nature and thus unable to establish causal relationships between the constructs involved (Cage et al., 2022; Cage & Troxell-Whitman, 2019; Hull et al., 2021). The available data are thus insufficient to determine whether camouflaging would cause anxiety or rather pre-existing higher levels of anxiety may cause increased camouflaging behavior (see Hull et al., 2021, p. 6). In fact, given the linear correlation uncovered, one may also hypothesize that anxiety might be connected to one being self-aware of one's camouflaging, being self-aware of one's own social anxiety, or being self-aware of one's own social difficulties *per se* (see Williams, 2021 for a similar point). This issue is even more pressing considering that high levels of anxiety and depression are not unique to the camouflaging portion of the autistic population, but rather widespread in autism across the board (Hollocks et al., 2019). Additionally, some manifestations of social anxiety in nonautistic populations, such as reduced eye contact or rehearsing conversations before they occur, are likely to overlap with camouflaging behavior (Fombonne, 2020; Piccirillo et al., 2016).

We urge additional caution on this point because – despite these issues being acknowledged by researchers – the relationship between camouflaging and mental health is often interpreted as a one-way street – i.e., as camouflaging being conducive to poorer mental health outcomes. Notably, this tendency results – again – from the interpretation of qualitative studies, which suffer from the lack of inclusivity that we have already stressed.

To summarize, research on camouflaging and its preferred methodologies currently focus on a very limited sample of autistic individuals, usually adults who can deliberately self-report about their experience. The way in which current research is conducted raises methodological as well as conceptual issues. Methodologically speaking, results are hardly generalizable due to lack of inclusivity, while cross-sectional associations prevent us from establishing causal associations. This has important consequences for the conceptual characterization of camouflaging, as current research ends up with an unduly restricted conception of the phenomenon, which might in turn obscure important aspects or alternatives. For instance, current studies might encourage the view that camouflaging should be understood as a form of passing as neurotypical (see §2), or as automatically exacerbating anxiety (see above). In the next subsection we strengthen the case for a more inclusive research program, by pointing to relevant instances of camouflaging enacted by groups that are currently excluded by existing studies. This would help us to broaden the focus of research by looking at camouflaging from a developmental perspective, at how it is experienced by a broader range of individuals, and so on.

3.2. Camouflaging in other groups

As we discuss above, camouflaging is currently studied as a primarily adult phenomenon enacted by individuals without intellectual disabilities who are also partially aware of the strategies they adopt. To systematize future research, Lai et al. (2021) have recently proposed the following classification: a) people who (deliberately) *want* to

camouflage and *successfully* employ these strategies; b) people who (deliberately) *want* to camouflage but are *only partially successful* in doing so (potentially due to cognitive difficulties); c) people who *do not want* to camouflage; d) people who are *oblivious* to the notion of camouflaging. While research at the current stage is focused on (a) cases, (b)-(d) have not been sufficiently explored.

We now discuss young children and individuals with intellectual disabilities as relevant groups that may be included in (b) and/or (d). This preliminary – and at times speculative – discussion would also serve to expand the current conception of camouflaging to include some cases of (seemingly) shallow compensation that depart from the usual description, i.e., one focused on hiding behavior and its potentially negative consequences on mental health.

Let us start by outlining how camouflaging might look like in young children. It is plausible to think that many autistic children start camouflaging at an early age, either spontaneously or as soon as they start participating in intervention programs. Indeed, many existing programs target a range of skills – such as joint attention, eye contact, pointing, etc. – that overlap with the ones described by self-reported camouflagers (Livingston & Happé, 2017). Take eye contact as an example. If a child is struggling with making and maintaining eye contact, a therapist might employ a variety of strategies to increase the number of occasions in which they look in the eyes of others. If the intervention is successful, the child will start by fixing their gaze on the eyes of the therapist, and then on the eyes of other people as well. As a result, from an observer's viewpoint the autistic child's eye contact might come to be indistinguishable from the one exhibited by a neurotypical child, although the two actions were quite distinct in their preliminary stages. While the latter engage in eye contact spontaneously to check in with others, the former might come to perform the same overt behavior as an effortfully learned response. Similarly, many therapists spend quite a long time teaching how to use pointing gestures to children who would not otherwise point at things spontaneously to make requests. They try to replace the tendency to use another person's body, or to simply pick up the things they are interested in, with a tendency to point at the relevant objects or people. In the first stages of such interventions, pointing is far from spontaneous. Over time, however, pointing becomes part of the communicative repertoire of the child, likely reaching a point when it becomes both spontaneous and significant. Something along the same lines can be said with respect to interventions aimed at playing and playing together, at pretense play, at task-switching, etc.

These forms of interventions are widespread and usually modeled on a cognitive-behavioral approach, where the main aim is to replace some patterns of behaviors with others.¹⁰ Many of these target social abilities through time-specific and content-specific units of intervention. For instance, the *Social Competence Intervention* program (Stichter et al., 2010) focuses on developing a range of abilities through the following structure: (a) reviewing a previously learned skill and introducing a new skill in an instructional and group discussion format, (b) skill modeling, (c) opportunities to practice the skill in structured and naturalistic activities, and (e) closing activity or review. Most of these approaches are structured around rules (“Look in the other person's eyes”) and strategies to approximate the desired behavior (“Try to fix your gaze on other parts of the person's face to start”).

In our opinion, these cases that involve explicit learning of social skills are sufficiently similar to camouflaging, as autistic children

¹⁰ As we briefly discuss in the next section, we are aware that these approaches to intervention have been widely criticized both in terms of design and effectiveness (see Bottema-Beutel et al., 2018). It is important to study whether such approaches, which, in our view, involve camouflaging (at least temporarily), have long lasting effects with respect to using or not using camouflaging strategies over time. On the other hand, it is also important to study how other, less scripted, approaches fare with respect to camouflaging behavior.

perform at some level just as neurotypical children, but come to perform the same action through a more direct and structured intervention process. We thus suggest that some intervention programs make the child camouflage as a result, with the expectation that at some point the camouflaging component will disappear to give way to more organic and spontaneous behavior.

There are two main reasons for seeing these cases as essentially continuous with the typically studied ones:

(i) If the child responds well to therapy and, e.g., ends up effectively making and maintaining eye contact with others, this is likely to happen through different stages. In the initial phase, as we mention above, the therapist introduces new rules or strategies within the limited context of the session, effortfully trying to instill a given action. In later phases, the child incorporates the action to different degrees and applies it outside of the therapeutic setting. At that point, our suggestion is that the child's behavior should count as an instance of camouflaging, as it would be similar to the one enacted by people who respond to questionnaires. For instance, some of them report that part of their camouflaging consists in looking in the eyes of other people even when they are reluctant to do it (Hull et al., 2017).

(ii) Although this pertains to issues in philosophy of action (see Davidson, 1963 for the seminal discussion), it can be argued that if someone enacts something that we call A, then we are correct in saying that they are enacting A (regardless of whether they have the intention of enacting A *as such*). In our example above, even if children do not make eye contact *in order to* camouflage, their looking in the eyes of other people is arguably a camouflaging behavior. That is, the behavior displayed by some autistic children after therapy should count as camouflaging to the extent that, from the point of view of the observer of the relevant interaction(s), it is not readily distinguishable from the one enacted by neurotypical children of a similar age.

We propose to call this kind of camouflaging “socially-driven”. In the example above, one would say, the child undertaking the intervention is not initially a camouflager himself. Rather, other people, in this case therapists, should be seen as the agents targeting the child's unusual behavior and prompting some form of camouflaging. Notably, in these cases camouflaging behavior is induced under the direct supervision of another social agent, unlike the standard examples discussed in the literature where camouflaging is presented as self-taught or self-developed. Yet, this does not make it essentially different from such examples, especially when we consider the stages in which the child has learned to self-regulate and reminds himself to look in the eyes of others. Indeed, even the cases currently being discussed in the literature may be understood as socially-driven to some extent. As we have shown above, people who camouflage do so mainly to conform to the external social world and to tailor their behavior to the people around them, who act according to norms, habits, and rituals that are deeply social in nature. The only relevant difference concerns the way in which a given behavior has originated - that is, its trajectory and development.

Children also seem to exhibit more spontaneous forms of camouflaging behavior. For example, young children routinely pretend to understand questions they do not really understand. Neurotypical 2-year-olds almost systematically provide “yes” responses to polar (i.e., yes-or-no) questions (Heather Fritzeley & Lee, 2003). This is also the case of hearing impaired people and second-language learners, as well as of many autistic children who also experience language difficulties. In all these cases, questions that are not properly understood are nonetheless often answered in the affirmative. The main purpose behind this behavior appears to be camouflaging a lack of understanding. Incidentally, this is not dissimilar to the way some autistic people approach irony: they struggle to react in the appropriate way and often look for clues (e.g., prosody, face expression, etc.) so that the interlocutors do not notice their difficulty. A similar reaction is again observed in hearing

impaired individuals and second-language learners, and plausibly patterns together with the affirmative bias towards polar questions.

Autistic children therefore seem to exhibit both *socially-driven* and *spontaneous* forms of camouflaging to different degrees. In the former, the main camouflaging agent is not (initially) the child himself, although at a later moment - as a Vygotskian would put it (Vygotsky, 1978) - social regulations become self-regulations. At this later stage it would be difficult to distinguish the child's behavior from the one exhibited by a standard camouflager, except that the child would probably be unaware of the complexities involved in the relevant action. By contrast, more spontaneous forms of camouflaging develop organically as a way to mask social difficulties, to fit in a social setting, etc. Some of these instances may be more self-reflective (e.g., forcing oneself to laugh at jokes), while others may be more implicit and automatic (e.g., affirmative answers to polar questions). While we do not regard these instances as different types of camouflaging *per se*, we regard them as useful to illustrate that camouflaging in young children may have different sources. In this sense, we do not want to suggest that camouflaging in young children only results from therapeutic intervention. As a matter of fact, the same kind of behaviors that many children develop as a result of intervention may develop without intervention in others (with different aims in different cases). It would be interesting to be able to study how more spontaneous as well as more socially-driven camouflaging may relate to the different dimensions of camouflaging that are being explored (e.g., anxiety, wellbeing, success, diversity of contexts, etc.). Finally, interventions may impact different children in a variety of ways: some interventions may turn out to be redundant, children undergoing a similar program may end up exhibiting camouflaging behavior to very different degrees, and so on. That said, more research is needed before we can establish whether the social skills learned by autistic children (through intervention or more spontaneously) considerably overlap with camouflaging strategies reported by adults. Although we suggest that this might be the case, and that similar mechanisms may underlie the development of these behaviors, more evidence should be collected from a wider range of populations. Although we have suggested that autistic children plausibly camouflage, we have not tackled the question of how adult, self-conscious, forms of camouflaging develop, and whether or not these are related to how other groups on the spectrum experience their own camouflaging.

Autistic people who have a concomitant *intellectual or linguistic disability* are similarly left out by current research on camouflaging. Generally speaking, intervention programs aimed at autistic people with linguistic or cognitive difficulties do not differ substantially from the programs targeting young children. The *Social Competence Intervention* program described above, for instance, provides a therapeutic setting where children and youth have the opportunity to interact into a structured environment and learn new skills (Stichter et al., 2010). A similar intervention studied for adults is *Group Cognitive Behavioral Therapy*, which prioritizes structure, social training (e.g. skill building such as practicing phone calls and asking for help), and cognitive-behavioral techniques - e.g. role-playing and exposure exercises (see Hesselmark et al., 2014 for an example).

Similarly to what happens with children, there may be different ways in which the relevant action comes to be learned. Some individuals may initially be induced to camouflage through intervention and then turn the relevant actions into a habit, while others may develop camouflaging behavior in a more individual and spontaneous fashion. For instance, an autistic person who has grown up with neurotypical friends within an integrated school system may participate in shared ways of addressing each other, use running jokes, routines and conversations without fully grasping the meaning of such practices, neither enjoying them nor finding them “easy”. In other cases, they may be able to adjust to the dynamics of a narrow social environment with specific rules, such as a basketball team, while experiencing problems adjusting to wider or more unpredictable environments. In such cases, the person may not receive any explicit instruction concerning how to interact with others,

but will learn how to adjust their own actions to the ones performed by others by imitating, being sensitive to feedback, and modulating their responses.

People who participate in qualitative studies involving self-report measures, as well as the majority of researchers, tend to focus on varieties of camouflaging that develop as the result of individual efforts of imitation and more or less explicit self-instruction. However, as we stress above, we should also look at how camouflaging may emerge in childhood and in other populations to fully understand the phenomenon. In this sense, it would be interesting to investigate how camouflaging comes about, to what extent socially-induced camouflaging develops into habitual behavior, whether and at which stage people become self-conscious of what they do, and whether self-awareness has an impact on how camouflaging is experienced. In the final section we explore some preliminary ideas on how to move research forward along these lines.

4. Implications and conclusions

A few recent contributions offer some suggestions on how to explore the construct of camouflaging more inclusively. One common recommendation concerns the need to move beyond self-report measures towards more observational methods (Libsack et al., 2022, p. 806). For instance, Lai et al. (2021) propose to refine existing discrepancy measures by looking at the tools used to assess other conditions – such as dyslexia – where observed performance and underlying understanding may come apart.¹¹ Williams (2021) suggests looking at behavioral measures widely used in social psychology – such as the Conversation Probe Role-play Test (Morrison et al., 2020) – to develop an *experimental discrepancy* approach. These methods are based on experimental manipulation, so that participants are recorded while interacting under different conditions that are designed to increase or decrease camouflaging behavior. Manipulations may include instructing participants to conceal their diagnosis from a conversational partner, or being encouraged to “show their true self” (Williams, 2021, p. 3).

Camouflaging as enacted by the groups considered in §3.2 strengthens the idea that we are looking at a complex phenomenon whose motivations are mixed and vary for different people across contexts. Some forms of camouflaging aim at full-blown integration in the neurotypical social world. Most existent research is focused on such cases. Yet, other instances may be rather directed towards more minimal forms of integration, such as participating in a shared game or activity, carrying out a short conversation, being part of a social event, or just dealing with more circumscribed aspects of the social world. Developing new experimental discrepancy approaches seems to be a promising way to explore variations of camouflaging behavior in children and in people with concomitant linguistic or intellectual disabilities. In these cases, we hypothesize that the *context* parameter can be particularly important, as very often behaviors enacted in one context are not generalized to other contexts (e.g., use of alternative systems of communication at school while refusing to use them at home). By manipulating the context parameter, researchers might get an approximate idea as to what extent a certain person who participates in some social script has a deep or shallow understanding of that script (e.g., to what extent children who “do well” on the ADOS-2 birthday party subtest understand that kind of social situation). Experimental discrepancy measures would also allow us to observe whether different strategies are being employed in different situations (or whether some strategies are restricted to some

situations), or with different conversational and social partners.

Extending the study of camouflaging to currently overlooked groups also has important implications in terms of reframing how we think about *impact*. As we show in §1, the current literature tends to present camouflaging (at least, “shallow” camouflaging) as mostly detrimental with some local exceptions. This is corroborated by first-person reports and questionnaires in which camouflaging is described as draining and effortful, and as profoundly impacting anxiety and wellbeing (Cage & Troxell-Whitman, 2019; Miller et al., 2021; Milner et al., 2022).¹² However, these results are once again limited by overly restricted sample sizes and methodological tools that exclude a significant portion of people on the spectrum. Studying camouflaging in different groups may prompt us to significantly reconsider this point. As we argue above, impact should go beyond the focus on mental health because camouflaging behavior – in all its varieties – is likely to bring about complex tradeoffs between different wellbeing components. Any evaluation about camouflaging and its impact on wellbeing should take into account camouflaging behavior enacted by heterogeneous groups of people with different abilities and degrees of awareness. One point that emerges from our discussion is that camouflaging may present itself differently – and have a different impact – depending on the people who enact it.

Another implication of our discussion concerns the connection between camouflaging and different *therapeutic approaches*. In §3 we have mostly considered cognitive-behavioral programs that go through a phase where children camouflage. However, many therapeutic interventions nowadays tend to depart from top-down cognitive-behavioral approaches in favor of a more relational and bottom-up development of social competences (see Bottema-Beutel et al. (2018) for some examples). For instance, social-pragmatic interventions use the developmental stage of the person as a starting point to build skills through a holistic approach that does not focus on specific behaviors. These programs include individual-difference, relationship-based models where different capacities, such *two-way, purposeful communication*, are developed in real-life contexts and used in various types of social interactions that occur in daily life, through the scaffolding and continuous support offered to the children to go through different functional and developmental levels (see Mok & Chung, 2014 for an example). This kind of approach is widely used in childhood, and aims at developing skills organically and flexibly from experience. Other bottom-up interventions – such as the Conversation Analytic Roleplay Method (CARM) recommended by Bottema-Beutel et al. (2018) – require significant language repertoires in order to be accessed. Participants observe themselves in conversations, while identifying difficulties and looking for possible solutions together with a trained facilitator. This way, participants drive the change in the interaction with others. However, for the reasons just mentioned, this type of intervention might not be suitable for populations with linguistic or intellectual disabilities.

One interesting research development in this respect would be to assess how different therapeutic approaches fare with respect to camouflaging effects across different time frames – i.e., during intervention as well as in later stages of development. In particular, it would be interesting to assess whether cognitive-behavioral programs would give rise to camouflaging strategies more directly, or whether bottom-up approaches – despite the emphasis on development and flexibility – could also promote some forms of camouflaging. With respect to longer time frames, it would be important to determine whether what we have called socially-driven camouflaging leaves some “mark” or “trace” as the person grows into adulthood, which may have some detrimental effects. By contrast, there might be situations in which behaviors that began as camouflaging become more integral to the person’s habitual actions and

¹¹ Lai and colleagues acknowledge that discrepancy measures are potentially problematic in the case of autism, given that unequivocal measures for psychiatric diagnoses are hard to come by. They propose to overcome the issue by combining several measures of observable behavior and cognitive tests in a network-like structure that would ideally bypass the need for ground truth measures (Lai et al., 2021, p. 2).

¹² As a consequence, some recent publications are explicitly framed in terms of reducing or minimizing the negative effects associated with masking (see for instance Cage et al., 2022; Belcher, 2022).

dispositions (thereby making camouflaging potentially indistinguishable from social learning or imitation). In this sense, we might want to observe whether people who have gone through a more global therapeutic approach exhibit more integrated and spontaneous interactions later in life. Longitudinal studies on long-term outcomes of autistic individuals who have experienced different therapeutic approaches would be a promising way to collect data in this respect (see the [ASD Long Term Outcomes Study \(ALTOS\) study](#) for an example). For instance, we could observe how people undergoing different intervention programs fare with respect to anxiety levels as well as other relevant mental health measures. This way it would be possible to determine whether socially-induced camouflaging would increase anxiety, or whether anxiety levels would decrease upon developing novel means to interact and communicate.

In this paper we start by discussing the recent body of research on autistic camouflaging, which mostly focuses on adult and verbal individuals. In section §1 we focus on how different researchers describe the construct and we show that different accounts emphasize different – at times value-laden – aspects of the phenomenon. In §2 we explore the analogy between camouflaging and passing, which we take to be illuminating although we are cautious about some recent attempts at overstressing it. Section §3 is devoted to groups of individuals who arguably camouflage but who have not been the focus of current research: among them, we primarily discuss children and adults with concurrent intellectual or linguistic disabilities. We argue that by looking at these individuals we can garner important insights on the nature of camouflaging and on how to study it. Theoretically speaking, these cases prompt us to see that not all forms of camouflaging are self-driven and self-monitored. Rather, some forms of camouflaging are socially-driven in origin, and some are also spontaneous, in the sense of arising from rather unmonitored responses. A more inclusive view thus raises an important question about how camouflaging develops, an issue that has not received the attention it requires.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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