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Towards autistic flow theory: A non-pathologising conceptual approach

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Abstract

Flow states are heightened moments of concentration, motivation and enjoyment, leading to total absorption in the present moment. A striking parallel exists between flow states and phenomenological accounts of autistic daily life. We analyse the components of flow theory alongside autistic autobiographical accounts to explore similarities and differences, in doing so moving toward an understanding of *autistic flow theory*. We highlight the considerations and opportunities this may hold for future autism research, in particular the advantage that this offers a non-pathologising approach to researching autism, one which helps to explain contextualised behaviour (i.e., alignment between the situation and what is happening in one's mind). Drawing on autistic autobiographical accounts, we outline four principles: (1) autistic people are uniquely placed to discover and manage flow; (2) autistic flow may qualitatively diverge from traditional models of flow; (3) difficulties maintaining and exiting flow for autistic people highlight a need to examine transitions into and out of flow; and, (4) internal and external constraints to flow highlight there is unrealised autistic potential yet to be discovered. The implications of an autistic flow theory are discussed in terms of how it can

impact (a) our conceptual understanding of autism providing alternative explanations to previously researched phenomena, and (b) how we build enabling environments for autistic people that allow flow to flourish across educational practice, wellbeing and research contexts.

KEYWORDS
autism, autistic flow theory, double empathy, flow states, monotropism

1 | INTRODUCTION

Flow states describe heightened moments of focus, concentration, motivation and serenity. Often referred to as 'being in the zone', flow states are a reportedly common feature of everyday life and have been widely studied across a range of individuals, groups and activities from high performance athletes to people watching television (Schiepe-Tiska & Engeser, 2012). According to Csikszentmihalyi (2014), flow states are an 'optimal experience' occurring when the information entering into one's awareness is fully congruent with one's present goals (Csikszentmihalyi, 1990, p. 39). Clear goals, frequent feedback and achievable outcomes facilitate flow state experiences, while absorption of attentional resources can lead to a reduction in self-consciousness and inaccurate perception of time (Csikszentmihalyi, 1990, 2014).

Interestingly, the characteristics of flow states mirror the phenomenological experiences reported by autistic people (McDonnell & Milton, 2014). Autism is a neurodevelopmental difference, present from birth and throughout the lifespan, which is clinically defined by criteria related to social communication, intense interests, and sensory processing (DSM V, 2013). Patterns of strength and challenge in autism are highly heterogeneous, in part due to high rates of co-occurrence with conditions including attention deficit hyperactivity disorder (ADHD), epilepsy (Mendez et al., 2023) and learning disability (Dunn et al., 2019). Critical work within the neurodiversity paradigm has highlighted that autistic differences are not inherently pathological, but can be disabling in interactions with physical and social environments that are not optimal for autistic ways of being (R. Chapman, 2021; Mitchell et al., 2021). This is reflected in evidence of relatively poor educational, employment and health outcomes for autistic people (Steinhausen et al., 2016).

Descriptions of flow states parallel many of the current diagnostic criteria for autism, including intense focus on certain tasks or activities (Bennett & Heaton, 2012), a sense of timelessness when pursuing intense interests (D. Murray et al., 2005), difficulty switching between tasks (Stoet & López, 2011), difficulty changing from familiar patterns of behaviour and routine (South et al., 2005), and a strong sense of intrinsic motivation towards activities of interest (Jaswal & Akhtar, 2018). Indeed, flow states are a pervasive feature of psychological life and as such our paper has implications for all autistic people regardless of heterogeneity.

Our interdisciplinary and neurodiverse co-authorship aims to follow in the footsteps of an increasingly phenomenological turn in research where autistic accounts are central to the conceptualisation of autism (R. Chapman, 2020; Gillespie-Lynch et al., 2017; Heasman &

Gillespie, 2019b; Milton, 2014; Ridout, 2017; G. L. Williams et al., 2021). We do not seek to present a unifying theory of autism through the lens of flow states. There is considerable evidence that 'autism' as an ontological category encompasses wide heterogeneity (in terms of behavioural, social, neurocognitive, and sensory differences) which complicate any attempt to create a unifying theory (Heasman & Parfitt, 2023). However, one of the outstanding challenges with existing psychological theories (discussed further below) is that they often have poor correspondence with lived autistic experiences and tend to take a default pathologising stance that sees difference as deficit. Our aim is to critically reflect on the application of flow states theory to understand autistic subjectivity, which in turn can offer non-pathologising approaches for future research. This is not intended to present a formalised theory, but rather to articulate how autism can be theorised in an alternative non-pathologising way. That is to say, it offers an explanation for contextualised behaviour (i.e., why there is a particular match between what is happening in the moment and what is happening in one's mind).

Research by McDonnell and Milton (2014) began to explore how aspects of autistic subjectivity might be best understood in terms of flow states, which forms our starting point. First, we aim to critically reflect on conceptual definitions that underpin the extent to which flow states and experiences of autism may intertwine. Second, we consider evidence from autistic first-hand accounts and autistic-led theories of interacting in the world and use this to inform our understanding of how previously documented features such as 'fixated interests' and 'repetitive behaviour' presently used in the DSM-5 (APA, 2013) and ICD-11 (World Health Organization, 2022) may be reconceptualised within a flow states framework. Finally, we examine the potential of flow states to offer a non-pathologising reframing of traditional autism research questions and the subsequent implications this may hold for educational practice, wellbeing and future research.

2 | OVERVIEW OF KEY CONCEPTS: FLOW STATES

Current theoretical models characterise flow states in terms of three main components related to (1) preconditions of flow, (2) the components of the flow experience, and (3) the outcomes of being in flow (Barthelmäs & Keller, 2021; Šimleša et al., 2018). We outline each of these, and in addition discuss the potential for (4) dynamic models of flow to explain the variation in flow experiences reported, and (5) the role of individual differences that highlight a potential link to autism.

2.1 | Preconditions of flow

Commonly cited pre-conditions of flow states include a balance between the challenges present in a given task and the skills of the individual, clear proximal goals, and immediate feedback on one's progress (Nakamura & Csikszentmihalyi, 2009). For example, a task that presents a challenge higher than one's skill level might cause arousal, but not result in a flow state as the task completion is hard to attain. Similarly, if one's skill easily exceeds the task difficulty then the achievement will be attained too quickly, leading to unstimulating periods of boredom. Flow states have been reasoned to represent an optimal balance between skills and task difficulty which can sustain attention for periods of time.

However, a binary skills-challenge fit does not account for other contextual factors that can lead to the diversity of flow experiences observed in everyday life. For example, clear proximal goals can help to break up complex tasks into manageable milestones, while frequent task feedback can provide reassurance and direction during the course of an activity. People also have differing levels of intrinsic motivation toward pursuing activities of interest, while the situations in which flow occurs may have differing levels of voluntary choice which could affect whether an experience is 'optimal' or more aversive, such as states of addiction. These individual and situational characteristics will be discussed in further detail below (Csikszentmihalyi, 2014; Peifer & Engeser, 2021).

2.2 | The components of flow experience

While preconditions may facilitate the presence of flow states, they do not necessarily determine the subjective experiences to follow (Barthelmäs & Keller, 2021). Research has identified multiple subjective experiences related to flow, of which it has been argued that no single component can be taken as indicative; rather, flow has been described as a combination of subjective experiences '...which, in their interplay, represent the experience for flow' (Peifer & Engeser, 2021, p. 4). It is this aim to holistically account for the sensation of total engagement with an activity that characterises the experiential components of flow states.

The following subjective components of the flow experience have thus been identified by various researchers (Csikszentmihalyi, 1990; McDonnell & Milton, 2014; Nakamura & Csikszentmihalyi, 2009):

(1) Intrinsic motivation in the process whereby flow is its own reward.
(2) Factors that dynamically shape the process of flow and therefore can simultaneously be experiential and consequential, including low effort, enjoyment, a sense of serenity, a sense of greater inner clarity, and a sense of being outside of reality.
(3) A merging of action and awareness whereby one no longer sees themselves as separate from the action they perform.
(4) Intense and focused concentration such that there are no intruding irrelevant thoughts or external feelings.
(5) A loss of self-consciousness whereby one can transcend their individuality and 'fuse' with the world.
(6) A heightened sense of control such that one believes they can deal with the challenges at hand.
(7) Time distortion, where time passes faster than normal, but can also be experienced in 'slow motion'.

As with preconditions of flow, not all of these components may be present in every type of flow experience, but a combination would suffice. A critical point yet to be fully explored is how the components of subjectivity may variously combine to form qualitatively different flow state experiences. In other words, flow may be a multi-dimensional construct requiring a more dynamic model, which is discussed below.

2.3 | Outcomes of flow

Flow states have been observed to lead to potential outcomes including high levels of task achievement, quality of performance (Csikszentmihalyi, 2014; Stoll & Ufer, 2021), residual positive cognitions and affect (Abuhamdeh, 2021; Csikszentmihalyi, 2014), enhanced learning (Freire et al., 2021), development (Schüler, 2007) and creativity (Harmat et al., 2021). However, data gathered about flow states are typically correlational (Moller et al., 2013), and such outcomes may not always be guaranteed to ensue. Given the varied nature of outcomes, timespans in which outcomes might be observed, and the possibility that outcomes may also be the result of other non-flow causes, research has focussed more on the subjective experience of being in flow than the ensuing outcomes.

2.4 | Dynamic models of flow

It has been suggested that flow states themselves may benefit from a more process-driven conceptualisation, wherein flow is understood not as a static state but rather a dynamic journey towards optimal subjectivity with (a) varying degrees of intensity (i.e., deep and shallow flow); (b) multiple pathways (smooth or troublesome); and (c) varying levels of risk (e.g. rapid enhancement or rapid deterioration when pushing one's skills-challenge balance) (Ceja & Navarro, 2012). This highlights how flow may be conceptualised as multifaceted, existing in unique combinations between person, place, activity and time. Dynamic models may also explain why flow may not always be 'optimal' because it can bring into focus other aspects of psychological life. *Dark flow* relates to the potential negative outcomes of engaging in flow states (Zimanyi & Schuler, 2021). For example, the intense and self-rewarding experiences associated with flow closely overlap with the behaviours associated with addiction. Indeed, withdrawal effects from flow have been reported, whereby people crave the desire to re-enter flow states and are unhappy in periods where they are not in such states (Peifer & Engeser, 2021, p. 176). Dark flow therefore highlights that a more holistic approach is required to understand flow, moving beyond the cognitive constraints of interpreting flow as a purely skills-to-challenge ratio (Peifer & Engeser, 2021, p. 59), and one which is always optimal in outcome. This represents a key ontological distinction for the purposes of the discussion below: that flow is not a static state but rather may be seen as a dynamic process, the consequences of which may be circumstantial and value-free.

2.5 | Individual differences in accessing flow states and autistic ways of being

Csikszentmihalyi noted that although flow states are a universal feature of consciousness, people vary in their experience of it, with some able to enter flow by merely directing their attention, while others rely on external cues (Csikszentmihalyi, 2014, p. 146). He consequently defined the 'autotelic personality', one which is not motivated by external rewards but rather an intrinsic motivation to enjoy the process of the activity itself (Csikszentmihalyi & LeFevre, 1989; Nakamura & Csikszentmihalyi, 2009).

What can cause one to be more motivated by the activity of the task than by the outcome of the activity? Research on the autotelic personality has examined a range of potential factors.

Action-state orientation (Diefendorff et al., 2000) is the ability to maintain focus on a task and remain engaged until it has been completed. Baumann et al. (2016) have shown that one's level of action-orientation can maintain flow state experiences despite changes in the skill-challenge ratio of a given task. Also, one's ability to resist distractions can be an important factor. Csikszentmihalyi (1990) discusses the balance between self-consciousness (i.e., too much worrying about others' perceptions could disrupt flow) and self-centeredness (i.e., too much interest in only oneself can detract attentional resources from phenomena) as barriers that make it difficult to lose oneself in an activity (Csikszentmihalyi, 1990, p. 85). These social-psychological dynamics of flow highlight potential intersections of interest for research in individual differences, specifically autism.

Of further interest to a potential link with autism is the noted sensory dimension to flow. Baumann et al. (2016) suggested that some people are more inclined to high levels of sensory stimulation and physiological arousal, known as 'sensation-seeking'. Their study showed that high sensation seekers were more likely to experience flow when the challenges presented to participants in a video game were dynamic in comparison to skill level, than when the challenges were held in balance to skill level. High sensation seekers may therefore have different 'windows' for entering into flow states and might be able to sustain flow in situations others may not. This is because flow is more likely to be shaped by one's subjective perception of the situation than the objective outcomes of the situation itself (Barthelmäs & Keller, 2021), and in high sensation-seekers, subjective perceptions of the task may be amplified.

Beyond individual and situational factors there are also socio-cultural constraints in reaching flow. Csikszentmihalyi discussed how the structure of society could shape possibilities for flow states (Csikszentmihalyi, 1990). In the circumstance of *anomie*, traditional norms become obscured and confused, presenting a barrier to flow because it is difficult to focus attention and energy without structure. In the circumstance of *alienation*, where people are constrained by the social system and have to act in ways that are contrary to their desires, flow is again difficult to achieve given the need to be internally motivated to pursuing goals (Csikszentmihalyi, 1990). This echoes some of the ways in which autistic people may encounter barriers to flow because society can place unnecessary constraints, such as stigma on those with a disability (i.e. a form of alienation), while similarly failing to recognise the support needs of people who may find it difficult to navigate the implicit and ever-shifting social expectations of different situations (i.e. a form of anomie). Conversely, it has been suggested that the deliberate seeking of flow could be a strategy used by autistic people to ward off the undesirable experiences of alienation and anomie to improve wellbeing (Milton, 2017b; G. L. Williams, 2020).

Additionally, flow can also extend beyond intrapersonal experiences to encompass interpersonal contexts where two or more people are able to jointly enter into a state of interactional flow. This phenomenon has been characterised as *social flow* which is a shared and contagious form of flow associated with interdependent and collaborative group processes (C. Walker, 2021). Social flow differs from *solitary flow* in that it also includes emotional contagion (between people completing activities together), an intense sense of connection with others, and a merging of social and personal identity (C. Walker, 2021, p. 265). More recent work has defined further sub-components of interactive flow, such as co-active flow (where there is no interaction with others) and group flow (synchronous interaction with others) (Hackert et al., 2023). While it has been documented that autistic people typically struggle with social interaction (APA, 2013), more recent research has highlighted the potential for neurodivergent social flow to take place between autistic interlocutors, which will be discussed in further detail below.

3 | OVERVIEW OF KEY CONCEPTS: AUTISM

For the purposes of the present argument, we take an inclusive approach to the label of autism, encompassing the diversity of experiences, abilities, behaviours and communicative abilities of people that may receive a diagnosis or self-identify as autistic. Notwithstanding, there are challenges around how to present a definition when the scope is so broad (Heasman & Parfitt, 2023).

Autism has been defined in a number of different ways across the biomedical, neurocognitive and social sciences (Heasman, 2018). From a biomedical perspective, autism has been conceptualized as a medical 'condition', and as such the focus has been on identifying the origins of 'symptoms' in the hope of preventing or minimizing their occurrence (for critique see Kapp et al., 2013). Diagnostic criteria include lifelong difficulties in the domains of social interaction across multiple contexts, as well as restricted or stereotyped interests or behaviours and sensory processing atypicalities (APA, 2013).

Several theories regarding autistic perception, cognition and behaviour have grown from a biomedical perspective, emphasizing specific impairments in cognitive and neurological functioning, without accounting for many of the positive aspects of autistic experience and ability (Russell et al., 2019). These theories include an *impaired theory-of-mind theory* (Baron-Cohen et al., 1985); *weak central coherence theory* (Happé & Frith, 2006); *executive dysfunction theory* (Happé et al., 2006); the 'lack of' *social motivation hypothesis* (Chevallier et al., 2012), and the *empathising-systemising theory* (Baron-Cohen, 2002). While each of these theories aims to present a model to account for the difficulties encountered by autistic people, they share common limitations which impact their ecological validity. In particular, they focus exclusively on deficits, thereby overlooking positive aspects of autistic being (Russell et al., 2019); they focus on the autistic individual and not their interactive environment (Heasman, 2018); they characterise autism as observed from a typically developing standpoint, contributing to stigma around divergent forms of being (Heasman & Gillespie, 2019a; Pellicano & den Houting, 2022; Yergeau & Huebner, 2017); and none are able to provide a complete account of autistic being, instead focussing on specific clinical markers (e.g., theory of mind aims to explain social interaction difficulties).

Viewed from within the dominant medical model, autism has 'linguistically, culturally and politically been constructed in relation to a normal/abnormal binary' (Bottema-Beutel et al., 2021, p. 4). Atypical social, motoric and sensory behaviour is identified and assessed by external experts 'from the outside, by its appearances, and not from the inside according to how it is experienced' (D. Williams, 1996, p. 14). In this way, autism is constructed as a within-person phenomenon despite an ever-growing body of evidence supporting the claim that many of the social difficulties experienced by autistic people are co-constructed in context—see *the double empathy problem* below.

However, over the past three decades of growth in autism research there has been a significant shift in how autism is defined (Happé & Frith, 2020). In particular, the concept of *neurodiversity* (Kapp et al., 2013; Singer, 1999, 2017; N. Walker, 2012), which situates human neurological diversity as a natural and valuable expression of wider human diversities, has developed a new paradigm for research. According to this paradigm, autism is understood to be a form of neurodivergence, i.e., 'a specific neurological state' (Beardon, 2017, p. 13) or 'disposition' (Milton, 2012) that is 'different, not less' (Fletcher-Watson et al., 2019, p. 23). Autism is considered to be a natural part of human variation (Runswick-Cole, 2014), which extends beyond pure neurocognition to impact one's social identity and opportunity for participating in

the world (Milton & Sims, 2016). The extent to which autistic people have been excluded from the process of producing knowledge about autism represents a critical ethical dilemma (Milton, 2014) and highlights a missed opportunity to align theory with practice through learning from autistic expertise (Heasman & Gillespie, 2019b). The neurodiversity research paradigm aims to more holistically capture autistic ways of being outside of deficit-focussed models and in a way which prioritises autistic expertise in the production of such knowledge.

In light of this paradigm shift, we aim to draw on autistic perspectives to inform our understanding of how flow states theory can contribute to research on autism. Connections have already been observed (Ashinoff & Abu-Akel, 2021; Dupuis et al., 2022; Rapaport et al., 2023b; Russell et al., 2019). In particular, McDonnell and Milton (2014) argue that flow is an essential part of making a chaotic and confusing world easier to navigate for autistic people, where previously stigmatised repetitive behaviours actually play a much-needed role in creating a sense of achievement and control (McDonnell & Milton, 2014, p. 39). As the following section highlights, there is strong support from a variety of autistic accounts which variously highlight the phenomenon of flow as central to everyday lived experience, as well as autistic-led theories of being in the world.

3.1 | Monotropism and flow

Monotropism (D. Murray, 2018; D. Murray et al., 2005) addresses the divergent ways in which autistic attention is often organised and shaped (e.g., Frith & Happé, 1994; Gernsbacher et al., 2008). Founded on the premise that attention is a limited cognitive resource, monotropism is a principally interest-based account of autism: with interests, here, conceptualised as 'what we care about, what we spontaneously give attention to, and what we value (if only briefly)' (D. Murray, 2018, p. 1). Using the metaphor of water which can find its way through any gap, monotropic minds are especially good at focussing attention to deeply 'irrigate' dry areas with interest, whereas polytropic individuals may flow their attention across a much wider area with only a moderate arousal of interest. Attentional allocation among humans is hypothesised as being 'normally distributed' (D. Murray et al., 2005, p. 140), with the intensely monotropic and 'atypical strategies for the allocation of attention' (D. Murray et al., 2005, p. 139) understood to be at the root of many prototypical autistic characteristics.

There are further parallels with monotropism and flow states. Autistic people have been characterised as having 'fixated interests', wherein intense and focussed concentration can prevent intruding irrelevant thoughts or external feelings (APA, 2013). This mirrors the flow states account of losing one's sense of self. For autistic people, becoming lost in one's interest is a common feature that results in time distortion, also termed 'time blindness', and lies behind criticisms of autistic people failing to organise their day effectively (i.e., because they are so absorbed by one activity and struggle to transfer to the next). In clinical literature this has been documented as a deficit in 'executive functioning'. Inherent within redirecting attentional resources is also the role of one's intrinsic interest. For autistic people it can be extremely difficult to direct attention towards tasks for which there is a lack of intrinsic interest and motivation.

McDonnell and Milton (2014) have argued for a re-framing of how we think about the repetitive, ritualistic 'stimming' behaviour (Kapp et al., 2019) often associated with autism. The authors remind us that for many autistic people a monotropic flow state by means of stimming, or hyper-focusing on a task, provides 'predictability and control over their environment, a sense of achievement, and in-the-moment fun' (2014, p. 40). This is echoed in autistic anecdotal

accounts, including in that of Tre Ventour-Griffiths (2022), autistic writer and historian, who describes the 'hyper-productivity' that can arise out of 'autistic flow states' when engaging in specialist interests. For those autistic people who experience hyper-sensitivity to their various external senses, additional difficulties in processing multiple sources of information arising from a monotropic attention style can lead to overwhelming experience of the surrounding sensory environment. In such cases flow states may be utilised to manage chaotically perceived environments, and as a method of wilfully entraining one's attention, and reducing global stress. McDonnell and Milton (2014), too, have argued that many of the autistic behaviours often described in the medicalised literature negatively as ritualistic or repetitive, may in fact represent autistic strategies for entering flow states, both for their intrinsic pleasure and as a means of self-regulating in otherwise hostile sensory or social environments.

3.2 | Summary of conceptual definitions

In summary, this section has critically examined underlying concepts of flow states theory and autism respectively. Flow states theory aims to capture the pervasive phenomenon of one's attentional capacity being absorbed by a given activity. However, the theory equally highlights variability in the subjective experience of flow and its consequences. Individual differences have therefore been posited to account for some of these factors, and psychological properties identified by flow theorists overlap with social-psychological aspects that are pertinent to autistic subjectivity.

Definitions of autism differ across discourses, with the traditional medical model focussing on deficits, whereas the neurodiversity paradigm focusses on acceptance and unrecognised potential. It is within the neurodiversity paradigm where there are clear opportunities to learn from autistic perspectives, especially autistic-led theories which have situated flow-like experiences at the centre of autistic phenomenology. In the section to follow, we will expand further on autistic accounts of flow.

4 | AUTISTIC ACCOUNTS OF FLOW

> People on the autism spectrum are often said to be 'tuned out' from the social world operating around them. Sometimes this is a large mischaracterisation, at other times it is because the individual in question is fully engaged in a given activity and could be said to have achieved a state of flow. (McDonnell & Milton, 2014, p. 39)

Tellingly, 'flow'—sometimes used intuitively and sometimes more technically—is a commonly cited term (or loose concept) in autistic-written texts or within autistic spaces. In the following section, we examine autistic accounts to identify points of similarity and difference with existing flow states theory.

4.1 | Autistic sensory pathways towards flow states

Heightened sensory sensitives relate to sound, vision, touch, taste, and smell, and are commonly experienced by autistic people (Crane et al., 2009; MacLennan et al., 2022). This can be a source

of enjoyment but also potentially overwhelming when sensory inputs from the environment cannot be controlled and are intense and sustained (e.g. fluorescent lights in a supermarket overwhelming visual stimulation; Robertson & Simmons, 2015). Additionally, beyond processing external stimuli, sensory experiences can operate as an internal response to help regulate external stressors, for example using rhythmic behaviour such as hand flapping or vocalisations to create a sense of structure and control (Kapp et al., 2019). The enhanced sensory experiences of autistic people therefore offer a route into flow state activities as they can (1) stimulate motivation to start an activity, (2) provide ongoing feedback about one's progress within an activity, and (3) can expedite the identification of distractors interfering in flow.

In a paper exploring 'autistic listening', Davies (2019) observes that autistic people are 'sometimes puzzled' that Csikszentmihalyi's flow states are often 'regarded as somewhat elusive and difficult to experience, since the common autistic experience of complete engagement with an interest fits the definition of flow well' (W. J. Davies, 2019). One reason for this, and the prevalence of the discussion of flow in anecdotal autistic discourse, may be due to atypical and often intense patterns of engagement with the sensory world autistic people can experience. Leong (2016, p. 2), for example, talks about the 'unadulterated wonderment' that autistic people often experience, juxtaposed with the 'contradicting extreme of mental anguish and physical pain', on account of often idiosyncratically attuned sensory-perceptual and attentional systems:

> Meanwhile, inside a parallel domain, another conversation is unfolding: one in which chromatic tonalities, harmonic reverberations, whimsical meanderings, rhythmic iterations and gentle ebb-flow of visual-tactile-olfactory-auditory counterpoint take precedence. The autistic mind seeks out new sensations in the form of discovery, forging novel pathways of knowing the world, and connecting with material elements, animate and inanimate, through seeing, hearing, smelling, touching, tasting, physically traversing and mentally ruminating (Leong, 2016, p. 94)

Such framings are mirrored in the poetry and video work of Mel Baggs (2007), a non-speaking autistic activist. In their now famous video piece '*In My Language*', Baggs first demonstrates and then 'translates' their 'native language': formed not of semantic units but of fluid, emergent, sensorial relations with both animate and inanimate objects within their environment. For the first three minutes and twelve seconds of an eight minute and thirty-six second video, Baggs films themselves rhythmically stroking the clicking-keys on a computer keyboard, flapping their fingers before the camera lens while droning vocal tones, rattling looped coat-hanger wire around a metal door handle, and rocking back and forwards while sniffing a book: the sound of paper rubbing against skin high in the audio mix. With no explanation or context, the viewer is left to imagine that these actions are meaningless 'stims'. In the second part, however, Baggs invites us in: providing a computer-read monologue (with subtitles) over the continuing sound and visuals:

> Many people assume that when I talk about this being my language, that means that each part of the video must have a particular symbolic message within it, designed for the human mind to interpret. But my language is not about designing words or even visual symbols for people to interpret. It is about being in a constant conversation with every aspect of my environment. Reacting physically to all parts of my surroundings [...] I smell things. I listen to things. I feel things. I taste things. I look at things... (Baggs, 2007).

Such perspectives highlight the role that sensory experiences can play in initiating activities of interest for autistic people. Specifically, sensory sensitivities enable fast processing ("a constant conversation") of a wide variety of stimuli ("reacting physically to all parts of my surroundings"). Importantly, Baggs identifies that such experiences are unhindered by symbolic meanings attached to cognitions about a given situation. They happen instead intuitively, creating a new pathway for autistic people to discover and understand activities of interest that increases potential for sustaining flow state experiences. In a qualitative study which aimed to map autistic strengths related to their diagnosis, Russell et al. (2019) conducted interviews in which participants described similar experiences where hyper-perception could be an advantage for encouraging intense focus:

> If you watch a film the colour goes green, red, light blue, yellow... The first thing your eye will be drawn to is the colour and it just continues, it just walks you through the film and continues...It's beautiful. (Russell et al., 2019, p. 128)

In this account we observe the link between a sensory entry into an activity and the resultant experience, which match key criteria of a flow state. Again, the sensory entry is intuitive, hence being 'drawn to', and the activity which follows results in sustained interest that 'flows' from one experience to the next, ("it just continues, it just walks you through the film and continues"). The result is enjoyment ("It's beautiful").

While one of the core conditions required to promote a flow state is the presence of clear goals and immediate feedback (Csikszentmihalyi, 1990, 2014), the goals themselves need not be complex. What is important is that one's attentional capacity is absorbed by some clear pattern. In this way, the goal may simply be to notice—and to be present with—the pattern, such as when music (organised auditory information) entrains the mind that attends to it (for which the immediate feedback would be the aesthetic response). Csikszentmihalyi describes the various ways that the different senses may thus induce a flow state, although he argues that 'it takes training to be able to derive this degree of sensory delight' from merely staring at the sky (1990, p. 108). There are some (McDonnell & Milton, 2014; Milton, 2017a; D. Murray, 2018) however, who have argued that sensory delighting, in the form of repetitive action and leading to a flow state, may not require training, but in fact come naturally to autistic people possessing an inherently *monotropic* attention style. Increased sensory awareness can also facilitate the identification and removal of potential disrupters of flow. In an analysis of autistic adults' subjective experiences of using stimulatory movements, Kapp et al. (2019) highlight the use of such movements as a coping mechanism to prevent distracting external stimuli from disrupting flow:

> The eye close is to cut off additional stimuli so I don't get tired, or sometimes when I can particularly obsessively focus on the one thing that needs to happen. So contrary to what would appear common sense, I close my eyes quite a few times during dances which I didn't understand because I needed to have the other person lead me more than trying to see what's happening. (Kapp et al., 2019)

The ability to adapt one's surroundings and pre-empt potentially stressful situations can be guided by one's sensory knowledge and can enable periods of sustained activity to be unhindered. Exerting control over one's environment is a theme that has recurred in qualitative investigations of autistic sensory experiences, as demonstrated by Robertson and Simmons (2015):

> I'm going to see Skrillex on Saturday night, and that's really loud dubstep with really high frequencies and really low frequencies, but I have earplugs which take out the high and the low frequencies, so I can stand it. (Robertson & Simmons, 2015).

In this account, sensory awareness about the specific acoustics of sounds that are challenging (high and low frequencies associated with dubstep music) enables this autistic person to select an adaption that would specifically target these challenges. Thus, across these accounts, a common theme is that autistic people are able to use their unique sensory perception to understand and modify their environments, thereby removing barriers that prevent the continuation of flow-like experiences.

4.2 | Autistic interpersonal flow

There is evidence to suggest that the characterisation of autistic people as being unmotivated to pursue social interaction (e.g. Chevallier et al., 2012) is an oversimplistic view. Specifically, autistic people have been shown to demonstrate sophisticated social coordination and rapport with others in naturally occurring interactions: particularly so with other *non*-neurotypical individuals (Crompton, Hallett, et al., 2020). *Neurodivergent intersubjectivity* is a term that describes the patterns of coordination and rapport in autistic interactions described by Heasman and Gillespie (2019a), where interactants move between tight and loose moments of synchronicity. It differs from conventional social interactions where social alignment is regularly managed, both through maxims and linguistic 'repairs', where one speaker aims to correct the other speaker's understanding (Grice, 1989; Schegloff, 1992). Neurodivergent intersubjectivity demonstrates a different type of interpersonal flow wherein there is freedom to flow between individual and cooperative ways of making sense of one's situation. Specifically, tight moments of coordination can only occur if both parties relax normative values regarding reciprocation. This relaxation enables discovery of overlapping interests, goals and expectations, which can represent important moments of humour, rapport and identity building for autistic people. The result is that from the outside, interactions might appear disorganised and unpredictable, but from within the interaction interpersonal flow between autistic people is shown by sustained interest and enjoyment in each other's company.

Autistic accounts continue to enrich our understanding of undiscovered social rapport associated with intersubjective flow. *Flow UnLocked* (Pavlopoulou, 2020)—a University College London funded project to explore autistic people's relationships during and after the Covid-19 'lockdown' in the UK—used creative practices to weave together explorations of the personal and sensory relationships that had sustained autistic collaborators through the pandemic. Group activities and social encounters often generate shared flow (C. Walker, 2021). 'Rapport', a highly intuitive characteristic of intersubjective engagement that often involves mutual attentiveness (creating focused and cohesive interaction), mutual affective-emotional positivity, and behavioural coordination, or being 'in sync' (Tickle-Degnen & Rosenthal, 1990), has also been repositioned as a kind of *optimal experience* (Tickle-Degnen, 2006): in the Csikszentmihalyian sense. However, when two autistic individuals—potentially more pre-disposed to entering flow states—fall into sync with one another, an increased intensity of shared flow states can often occur (G. L. Williams et al., 2021).

The observation that autistic people appear to experience (and often report) improved interpersonal synchrony when communicating with others of a similar neurotype is reflective of

the *double empathy problem* (Milton, 2012; Milton et al., 2020), an autistic-led theory situated within a non-pathologising social model of disability (Oliver, 2013). According to the double empathy problem, in interactions between two individuals of different neurotypes (i.e. between autistic and non-autistic individuals), mutual understanding is troubled by 'a disjuncture in reciprocity between two differently disposed social actors' (Milton, 2012, p. 884), 'who hold different norms and expectations of each other' (Milton et al., 2020, p. 1). Instances of non-understanding and breakdowns in social flow that have traditionally been attributed to autistic people are reframed, in this way, as a lack of attunement between two individuals with very different dispositions.

The double empathy problem is now increasingly supported by empirical research: demonstrating both the difficulties that non-autistic people appear to experience in understanding the affective and mental states of autistic individuals (Brewer et al., 2016; Edey et al., 2016; Heasman & Gillespie, 2018; Hubbard et al., 2017; Sheppard et al., 2016), as well as the high levels of within-group autistic interpersonal attunement (Crompton, Hallett, et al., 2020; Crompton, Ropar, et al., 2020; Morrison et al., 2020; G. L. Williams et al., 2021). The double empathy problem and associated research also sit comfortably alongside corresponding theories from various complementary disciplines, positing that as human animals we can best understand others who have similarly organised minds (Bolis et al., 2018; R. Chapman, 2019; Conway et al., 2019; De Jaegher et al., 2013; Fein, 2018). This theory, and the evidence which supports it, highlights that there is unrealised potential for intersubjective flow between autistic people (Heasman, 2018). This therefore represents an important research area about autism and flow that has been previously misunderstood via the characterisation of autistic people as lacking social motivation (Chevallier et al., 2012). Instead, further studies that take into consideration the sociocultural environment of interactions would help to enrich understanding about intersubjective flow further.

4.3 | Autistic inertia and getting lost in flow

Flow states have a positive role in autistic wellbeing, yet autistic people may also, at times, struggle in managing and exiting them successfully.

Autistic inertia, a term commonly used by autistic people but rarely within research literature (Buckle et al., 2021; Welch et al., 2020), describes the phenomenon of sometimes extreme difficulty in initiating or ceasing activities or movement, as well as trouble transitioning between states. Such difficulties, often described from an external, medicalised perspective as pathologically 'stereotyped behaviours' (APA, 2013), 'non-compliance' (Buckle et al., 2021; O'Nions et al., 2018) or even the 'inconsistent skills and performance on tasks' (Welch et al., 2020, p. 6) are not subjectively associated with a lack of motivation to engage with the target task; in fact the individual's inability to start or stop activities or movements is often experienced as debilitating and a source of distress or discomfort (Buckle et al., 2021; Welch et al., 2020).

Buckle et al. (2021, p. 2) have observed the overlap between autistic inertia and a monotropic attention style, in terms of 'the autistic tendency to focus narrowly and deeply on topics or objects of interest' with both positive and negative outcomes. Some positive aspects of what has been referred to as autistic inertia have been noted: namely the momentum (once started) to keep engaged with a task in hand (Dekker, 1999, p. 8), possibly due to a reduced ability to disengage and a deep, pleasurable immersion in an activity with associated time dilation and

loss of self-consciousness (Buckle et al., 2021; Rapaport et al., 2023a). However, more often than not such experiences are described as some of the most disabling aspects of being autistic (F. Murray, 2017), involving loss of volitional control of bodily movements (Buckle et al., 2021), and a much darker experience of time dilation:

> I am aware of my surroundings, but time feels slower, more drawn out and I don't remember being able to feel my body other than being frozen but it feels as if I go completely into my head, like an out of body experience but in my mind. ("Kelly", autistic contributor in Buckle et al., 2021, p. 9)

One central characteristic of flow states is that they are 'autotelic' in nature: the activity inducing the flow state is undertaken as an end unto itself, as something intrinsically rewarding. McDonnell and Milton (2014, p. 44) have suggested that this may lead to some activities becoming 'all consuming' with the potential for negative consequences for the autistic individual's wellbeing: something that can certainly be seen in instances of autistic inertia.

4.4 | Similarity and difference between autistic phenomenological accounts and traditional accounts of flow experiences

The accounts explored have highlighted similarities, but also differences, between autistic experiences and what might be termed the traditional model of flow outlined above. In a recent study of autistic phenomenology, differences in attentional patterns were discussed such that 'the contrast between attentional tunnels and the unattended world is likely to be more abrupt, and this affects directly and via feedback loops into how attention is spread' (D. Murray et al., 2023, p. 227). This suggests that there may be different potential for discovering and sustaining flow between autistic people and typically developing people, and the idea that they may be qualitatively different as a result is discussed further below. However, beyond dispositional differences of attention, we highlight two aspects of flow theory that may indicate a qualitative divergence within an autistic flow model: the skills-challenge fit and the concept of control.

When examining evidence for the prerequisites for experiencing flow, the ability to discover flow and gain feedback on progress is supported by autistic people's heightened sensory stimulation. However, a further prerequisite for ensuring that there is a perceived fit between situational demands and individual skill may represent a potential area of difference in need of further investigation. Autistic people's unique sensory connection to the world means that a greater range of activities could potentially induce flow, which for non-autistic people may not be of interest e.g., stimming. These activities are consistently identified by autistic accounts as consisting of the merging of action and awareness. Autistic flow can encompass activities that might from the outside of one's subjectivity be potentially considered a low demand task, depending on the disposition of the perceiver. However, it is important to keep in mind that the skill-challenge fit is a relational one, specific to the individual and their activity; thus, the more idiosyncratic the activity the harder it is to gauge objectively one's corresponding skill level. Indeed, the skills-challenge fit has received some critique as one of a number of possible 'motive-specific incentives' for flow (Schiepe-Tiska & Engeser, 2021). It therefore remains to be seen the exact role the skill-challenge fit has as a pre-requisite for autistic flow to occur.

Further corresponding evidence from autistic accounts in support of flow include widely reported intense focus, a loss of self-consciousness and a sense of time distortion when engaging in flow activities, elements which have been observed in a recent empirical study on autistic hyperfocus and monotropism (Rapaport et al., 2023b). However, the component of 'control' within traditional models of flow may be another point of qualitative difference in comparison to autistic experiences. In the traditional flow conceptualisation, control may refer to a sense of task mastery (internal to the activity); however, for autistic people control may have added significance given its potential link to wider psychological factors, including safety and security from an otherwise unpredictable and overstimulating world. Highlighted within autistic accounts is the idea that the ability to be absorbed in one's attentional tunnel is advantageous when struggling with being overwhelmed by external stimuli or unpredictable social events. The concept of control within an autistic flow model therefore requires further critical reflection as to how it is entwined with the motivation to avoid negative experiences as much as enhance positive or optimal ones. Indeed, central to the phenomenology of autistic accounts are themes of trust, the sensory world, interests and attention, states of mind, social joining and emotionality (D. Murray et al., 2023). These all represent prominent topics that autistic people both reflect on and navigate in daily life. The traditional conceptualisation of flow, however, exists independent of such sociopsychological factors, and thus may not fully capture the qualitative experience of flow for autistic people.

5 | POTENTIAL FUTURE CONTRIBUTIONS OF AUTISTIC FLOW THEORY TO RESEARCH

Autistic autobiographical accounts highlight that flow-like experiences are a common and integral feature of everyday life. We aim to draw together evidence about the relationship between flow states theory and autistic lived experience in a form that can be explored, tested and extended through future research. We suggest that the following key principles are relevant to developing a theory of autistic flow, one which is specific to autistic people and lays the theoretical foundation for future empirical exploration.

5.1 | Autistic people are uniquely placed to discover and manage flow due to dispositional characteristics and monotropic focus

There are a range of dispositional characteristics associated with autism that are conducive to encouraging flow states. The attention pattern of monotropism, where autistic people are inclined to focus deeply on a narrow set of phenomena (D. Murray et al., 2005), increases the likelihood of flow states to occur and be sustained. Monotropism echoes the traits of autotelic personality and action-state orientation already observed as key characteristics associated with heightened flow experiences (Baumann et al., 2016; Diefendorff et al., 2000). The unique sensory sensitivities that autistic people experience establish an even greater window for flow to be discovered and stimulated in the first place (Baggs, 2007; W. J. Davies, 2019). Sensory stimulation further helps to facilitate enhanced feedback during the course of flow activities (Leong, 2016) and helps to quickly identify distractors to flow (Kapp et al., 2019). However, it could also lead to distraction to flow from external stimuli (D. Murray et al., 2023). Indeed, the motivation for seeking out familiar structured activities (D. Murray, 2018) aligns naturally with

the environmental conditions (e.g., clear proximal goals) that have been observed to help facilitate the occurrence of flow states. The idea that autistic people are uniquely able to discover and manage flow suggests that future research may identify a broader range of activities that could be flow inducing for autistic people which are not for non-autistic people.

5.2 | Autistic flow may qualitatively diverge from traditional models of flow

Autistic flow aligns closely with many aspects of traditional flow theory accounts, however there are some points of divergence that may mean it is a qualitatively different experience. As mentioned above, the threshold for what can count as a flow activity may be much broader for autistic people due to the unique sensory connection to their environment. This highlights how the traditionally conceptualised skills-challenge prerequisite for flow may potentially not be as relevant for understanding autistic flow. Indeed, if there are a broader range of flow activities, which have the potential to be very idiosyncratic, measuring task demand and individual skill will be increasingly difficult from outside of one's phenomenology.

A second point of qualitative divergence is how the flow component of 'control' has a different meaning within autistic lives. Flow represents opportunities to enhance wellbeing both individually and interpersonally. In terms of individual wellbeing, flow is linked with intrinsic joy, it can enhance self-esteem through gaining a sense of mastery and control over activities and can aid the development of creativity to express oneself. However, gaining control over one's activities may also represent the avoidance of negative experiences (e.g., societal barriers). Autistic flow may therefore be deeply linked with wellbeing since feelings of control provide a source of stability within autistic lives, enabling an awareness of one's own being-in-the-world (D. Murray et al., 2023). This drive may also help to account for why we see flow facilitating interpersonal wellbeing in contexts where clinical literature suggests autistic people should struggle, as has been observed in interactions where autistic people's interests overlap (Heasman & Gillespie, 2019a; G. L. Williams et al., 2021).

5.3 | There is a need to examine transitions into and out of autistic flow (i.e., understanding flow as a dynamic process rather than static state)

Flow is not without its challenges and should not always be thought of as 'optimal'. There can be disadvantages with becoming too absorbed in a given activity particularly if one cannot detach oneself from a flow state or find themselves drawn addictively to such states, as has been documented in the form of dark flow (Zimanyi & Schuler, 2021). This compares with examples from autistic accounts, which highlight the challenges associated with becoming stuck in flow ('autistic inertia'), while more neurocognitive approaches have also documented similar difficulties in terms of challenges associated with switching tasks (e.g., Sawaya et al., 2021).

The accounts considered highlight a distinct pattern whereby autistic people have a strong propensity to enter into states of flow, but there may be difficulties maintaining and/or disengaging from such states. This idea supports the need to investigate the transitions into and

out of flow, just as much as the experiences of flow itself. If this pattern of phenomenology was better understood, it could facilitate the development of more enabling environments that recognise the unique strengths autistic people have in relation to states of flow, and better support the management of flow when it occurs. In order to do so, a more dynamic conceptualisation of flow would be required, one which examines flow as a time-series event interchanging with other attentional states.

5.4 | Flow theory offers a non-pathologising and contextualised way to realise autistic potential

The combination of flow being prevalent within autistic accounts, yet at the same time also subject to external disruptions and internal inertia, suggests that there may be undiscovered potential for supporting autistic people by designing environments that allow flow to flourish. An empirically-based autistic flow theory could help to reveal such potential. However, even in the short term, there is also potential to be realised by examining existing autism theories using the lens of a flow theory approach. To illustrate we outline alternative ways in which extensively documented phenomena could be explored (see Table 1). We also examine implications of such a theory in terms of how it can inform the development of environments that enable autistic people to flourish.

Further advantages to developing an autistic flow theory are that it can build on a wider impetus within psychological research for models of psychology that are dynamic and ethically reflective (Power et al., 2023). Indeed, flow theory itself originates within positive psychology, which has a natural focus on strengths. It is also a contextualised psychological theory, linking together people, activities and situations. For both of these reasons, flow has good alignment with other ethically prominent theories in autism studies including the neurodiversity movement (via highlighting strengths to counterbalance deficit-framed approaches), and the social model of disability (via recognising the role of the environment in shaping one's potential).

An autistic flow theory, as preliminarily suggested here, has the advantage that it deprioritises the focus on (neurotypical) social cognition as the discriminative criteria for autism. Instead, an autistic flow theory would offer an inherently phenomenological positionality that accounts for contextualised behaviour. Flow states are experienced subjectively, by an engaged agent. Rather than medical professionals making assessments of externalised behaviours, autistic flow theory could open up pathways for articulating and potentially measuring embodied autistic 'expertise' (Gillespie-Lynch et al., 2017; Milton, 2014) around autistic ways of being - thereby, addressing long-standing problems around the normative framing of behaviour and using a deficit model approach to autism.

However, it should also be noted that a theory of autistic flow could still be used in contexts that are pathologising and deficit-framed. An example of this would be if one were to ignore the positive aspects of flow in pursuit of examining purely negative consequences. We would argue that any approach which excludes the potential strengths of flow states altogether would not be consistent with the positive psychology origins of flow states, and by extension an autistic flow theory. Rather it would represent a transformation of the flow states theory into an existing deficit-model of autism. In short, autistic flow theory would require at its core an essential property of being orientated towards detecting strengths and recognising the agency of autistic people, i.e., it is an inherently non-pathologising approach.

TABLE 1 Using flow states to reconceptualise existing theories of autism.

Theory	Central claim	Alternative explanations and research pathways through using autistic flow theory
1. Theory of mind (e.g., Baron-Cohen et al., 1985)	Autistic people are specifically impaired in their ability to impute mental states to themselves and others.	A. The sustained attentional resources required for nuanced social predictions may not be readily available if one is easily engaged within other flow states of interest. B. One may not be easily understood by others outside of a given flow state thereby creating downstream effects which impact future opportunities for theory of mind. C. When interests between interlocutors align, then there would be possibilities for intersubjective flow states whereby where social interaction, communication and cooperation work seamlessly as if in one mind.
2. Weak central coherence theory (e.g., Happé & Frith, 2006)	Autistic people struggle to process information in context, instead focussing on details rather than the global picture.	A. The propensity towards entering flow states, but potentially struggling to exit flow states, may account for strengths in observing details. B. Being frequently absorbed in flow states may make changes in context (i.e., external phenomena to flow state of interest) harder to monitor.
3. Executive dysfunction (e.g., Happé et al., 2006)	Autistic people struggle with executive control in planning, memory, organisation and decision-making.	A. Autistic inertia describes the phenomenon whereby autistic people experience difficulty exiting flow states. This could impact executive skills in the moment but does not imply the skills are absent altogether. B. Cognitive capacity is consumed by intense focus involved in flow state and therefore has limited resources available for executive skills.
4. The (lack of) social motivation hypothesis (e.g., Chevallier et al., 2012)	Autistic people have diminished social motivation and as a result experience difficulties in social cognition.	A. The pervasiveness of flow states highlights that autistic people are highly motivated to interact with their world, and this can include, in the right circumstances (i.e., double empathy barriers removed) other people.

TABLE 1 (Continued)

Theory	Central claim	Alternative explanations and research pathways through using autistic flow theory
		B. In addition to the existing societal barriers (such as stigma and ableism), in an inverse of (1c) above, discrepancies in interest (on both micro and macro levels) may make it substantially harder to achieve shared flow states. C. Apparent disinterest in engaging in social activity may reflect a state of autistic inertia where an autistic person is unable to engage despite wishing to do so.
5. Intense world hypothesis (e.g., Markram & Markram, 2010)	Autistic people have extremely sensitive and flexible neurons leading to hyper perception, attention and memory making the world painfully intense.	A. If entering into flow happens quickly and easily then it is possible that deep and intense experiences occur in relation to phenomena/stimuli that are not always a priority.
6. Empathising-systemising theory (e.g., Baron-Cohen, 2002)	Autistic people have below average empathy and above average interest in systems.	A. The structure and routine required to facilitate flow may result in behaviours where autistic people seek patterns, which from outside of the subject, may look like an overt interest in systems. B. Empathy is not a key part of flow states theory therefore there is no reason to suggest that focussing on structure and routine would diminish one's ability to empathise.

5.5 | How can autistic flow theory help us to reconceptualise clinical definitions of autism?

Autistic flow theory may help to inform aspects of autism research that have been previously described in clinical literature. Sensory sensitivities occupy a specific criterion within the diagnostic framework for autism (APA, 2013; Perner et al., 2007). Flow states could further explain the relationship between autism and sensory sensitivity. It has previously been documented that autistic people can become fixated or lost in activities of interest, seemingly unable to hear or respond to other social stimuli. Far from being problematic, these experiences could be the harnessing of flow, whereby autistic people preserve attentional energy from becoming overloaded. Indeed, being in states of flow regularly may detract attentional resources required to monitor and respond to social stimuli, thus helping to account for some of the social interactional criteria observed in relation to autism. It may also explain why, from outside the

intense subjective experience of being in a flow state, the behaviour of autistic people is hard to understand by observers (Crompton et al., 2021; Milton et al., 2020).

Clinical literature also highlights a range of social interactional criteria for autism, including proposed challenges with social-emotional reciprocity, nonverbal communicative behaviours, and developing, maintaining, and understanding relationships (APA, 2013). However, highlighted in autistic autobiographical accounts and recent research (Heasman & Gillespie, 2019a; G. L. Williams et al., 2021) is the potential for intersubjective flow, where autistic people who share similar interests are able to reach intense and sustained heights in interaction. Deep intersubjective flow, where minds come together to seemingly act as one, could result naturally from the depth of interest autistic people are able to generate on a particular topic. Thus, flow may be a vital social catalyst for autistic people to form and build connections with others.

As well as informing clinical definitions, autistic flow theory could help to reshape theoretical approaches to autism research (see Table 1). Phenomena that researchers have tried to understand previously could have alternative explanations related to flow. For instance, being absorbed in a flow state can make psychological phenomena outside of the flow states more difficult to monitor as attentional resources are depleted. This could impact the ability to make predictions about social events (as described in the theory of mind and social motivation hypothesis), to see the global picture outside of details of interest (as described in the weak central coherence account), and to multi-task (as described in executive functioning). Likewise, being rapidly absorbed in activities of interest can make the world seem intense (as described in the intense world hypothesis) due to focussing in-depth for long periods of time on specific details. Autistic people may seek out structure and routine to help facilitate flow experiences (as described in the systemising component of empathizing-systemizing theory) and experience difficulty exiting states of flow to attend to other priorities, resulting in observed difficulties around task-switching, time-management and negative thought spirals (as described in autistic inertia).

Similarly alternative explanations afforded by autistic flow theory also open up more strengths-based research questions. For example, the high social rapport observed in interactions between autistic people may highlight that intra-psychological flow can be turned towards intersubjective flow if the social conditions are right (i.e., shared interest and flexibility around norms of engagement). Likewise, previously observed cognitive difficulties around interpreting minds and task-switching may be understood as socially-situated and explained as a by-product of flow in the moment. These strength-based approaches have the advantage of shifting focus onto the conditions that support socio-cognitive skills, rather than focussing heavily on measuring the perceived lack of socio-cognitive skills. In doing so, it also has important implications for autistic agency, suggesting that there is still the potential, if the conditions are right, for such skills to be observable in daily life. Further empirical research on this would be of great value to understanding the potential for autistic social flow.

A further consideration going forward for research will be how to develop methodologies for measuring flow, particularly without disturbing it or making autistic participants uncomfortable in the process of gathering data. This will largely depend on the research questions being asked, thus the options are not possible to enumerate here; however two aspects we have outlined (the focus on flow-transitions and the non-pathologising approach of flow theory) highlight that methodologies may need to include time-series data (i.e., data recorded over constant intervals of time), and participatory approaches (i.e., including autistic people in the process of generating knowledge about autistic subjectivity).

5.6 | How can autistic flow theory inform the development of environments that allow autistic people to flourish?

Through recognising the possibility that life, particularly for autistic people, is structured around states of flow, new opportunities emerge for enhancing environments that allow autistic people to flourish. Specifically, such environments can be better designed to support learning and wellbeing. This can be achieved through identifying moments of flow and deepening understanding about how it can be supported, including minimising distractors from flow.

In terms of wellbeing, flow acts as a vital source of intrinsic pleasure for autistic people given the high chance of experiencing a co-occurring mental health issue (Au-Yeung et al., 2019; Cassidy et al., 2018). Moments of flow represent a source of catharsis to balance wider mental health challenges autistic people may face. Inherent properties of flow such as the requirement for structure and routine provide predictability about one's environment which would be essential in scenarios of anxiety and uncertainty (e.g., navigating the social world).

At the intersection of flow and wellbeing exist novel opportunities for expressing oneself through acts of creativity. This is especially important for autistic people who may find traditional socio-communicative routes challenging. Creative endeavours facilitated by flow can allow the expression of subjectivity to others that otherwise may be harder to access, as observed in autobiographical accounts such as Mel Baggs' (2007). In doing so, it may also enhance one's self-esteem, since many flow activities involve mastering particular skills to a very high standard (Csikszentmihalyi, 2014). Flow can also help to inform aspects of how autistic inertia can be better managed. Through focussing research on the transitions into and out of flow, environmental supports can be identified and made accessible to autistic people to help prevent or ameliorate the negative aspects of flow experiences.

Flow has important implications for learning and development. Conventional educational settings can be aversive for autistic learners in terms of sensory, social and task demands and when teaching practices are not neurodiversity-affirmative (Humphrey, 2008; Jones et al., 2020). As a result, autistic learners are less likely than their neurotypical peers to achieve educational outcomes in line with their abilities (Guldberg et al., 2022). Indeed, companies which have adopted an inclusive approach to autism have specifically altered their workplace environments to enable autistic skills to flourish (J. Davies et al., 2022).

Education environments are often experienced by autistic learners as intensely stressful, and many of the factors contributing to autistic exclusion are related to the inaccessibility of flow states (Goodall, 2018; Wood, 2021). School curricula and systems are often rigid in terms of what they expect children to learn, and how they spend their time. There is little space for self-directed learning in most secondary/high schools, with students being required to prioritise topics chosen by others, with few opportunities to dive deeply into subjects of particular interest to them (Koegel et al., 2013; Mesa & Hamilton, 2022a; Wood, 2021). The timetable is typically divided up into periods assigned to different subjects, so that even when a learner does have the opportunity to enter a flow state, it is likely to be short-lived and may be interrupted by loud bells. In higher education settings, there is generally more scope for autonomous learning. Nonetheless, experience and outcomes for autistic university students are often compromised by inflexible processes, a high burden of self-advocacy in order to access accommodations, and low academic self-concept following cumulative negative experiences in pre-tertiary education (Hamilton & Petty, 2023).

Schools and universities are often busy places, with a wide range of sensory distractors and often unpredictable social demands. In many cases, students are discouraged from engaging in

self-regulating activities (e.g., stimming, walking around) and using the kinds of assistive devices (e.g., headphones, dark glasses) that might allow them to block out or compensate for those distractions (Mesa & Hamilton, 2022b). The message, whether explicit or implicit, that these self-regulating strategies are undesirable in 'mainstream' educational settings, can encourage harmful masking behaviours in autistic students (L. Chapman et al., 2022).

Some educational settings do make efforts to allow students the agency and space they need to be able to access flow states. This is more common in the early stages of schooling, and in some traditions of alternative education (Fisher, 2023; Goodall, 2019). Many autistic learners who struggle with mainstream education thrive when they are given the opportunity to learn about whatever interests them, whether at home or in a different learning environment (Guldberg et al., 2022; Simpson & Adams, 2023). They report that deep absorption in topics and projects allows them to learn rapidly, and that almost all learners will eventually attain most of the key learning objectives of formal education. Harnessing flow experiences through strengths-based pedagogical approaches has potential to benefit autistic learners in ways that are yet to be formally investigated.

Flow states allow us to discover and extend our abilities and might therefore create optimal conditions for learning (analogous to Vygotsky's zone of proximal development; Vygotsky, 1978). Strengths-based and self-directed approaches to education would harness the autistic propensity to enter flow states, by allowing learners to pursue their own specialist interests and remove barriers to flow.

6 | CONCLUSION

In conclusion, our interdisciplinary and neurodiverse co-authorship brings together a variety of expertise across lived-experience and academic literature to highlight the potential for flow states theory to enrich research on autism by moving towards autistic flow theory. There are numerous points of connection between flow states literature and autistic autobiographical accounts that make this phenomenon worthy of further study. Monotropic focus, autotelic personality traits and sensory routes to flow are all dispositional characteristics autistic people describe which impact the potential frequency, intensity and duration of flow states. Yet there may also be qualitative differences within autistic flow compared with the traditional model of flow particularly around the skills-challenge fit and the concept of 'control'.

Flow activities have far-reaching consequences for autistic wellbeing and should be encouraged, rather than prevented, when designing supportive environments. When combining literatures between flow states theory and autistic autobiographical accounts, a pattern emerges wherein autistic people demonstrate a unique strength in finding and entering into states of flow, but equally maintaining, disengaging or transitioning to other states and activities may sometimes be associated with challenges—particularly if the importance of flow is poorly understood or unsupported in the first place. Future research should investigate how environments can be more enabling in terms of empowering autistic people to enjoy and manage their flow experiences. To do so will require a more dynamic conceptualisation of flow and methods which examine moments of transitioning into and out of flow.

Autistic flow theory also offers an alternative route to understanding the challenges of becoming too absorbed in flow which has been described within autistic accounts, but also heavily documented in clinical literature. We suggest that autistic flow theory could offer a non-pathologising approach to understanding aspects of autism outside of the constraints of a

deficit-framed model. However, for an autistic flow theory to continue to be non-pathologising in this context, it must maintain at its core a strengths-based focus. A theory of autistic flow has the potential to inform how we change the way environments are made enabling for autistic people, in particular through enhancing learning and development by making better use of individual motivations and highlighting the need to remove potential disrupters to flow. We therefore believe there is a considerable opportunity for enriching future research by integrating flow states literature into autism research in the form of autistic flow theory.

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