

# Autistic Situated Knowledges and the Science Question in Autism: Non-Innocent Metaphors in the Theory of Monotropism

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## ABSTRACT

This paper starts from the observation that in a world of pathologising and ableist autism science, identifying as autistic has meant navigating between the necessity of putting words to lived experience and the risk of self-pathologising through problematic metaphors or frameworks. Following the contributions to feminist epistemology offered by Donna Haraway, I ponder the “science question in autism” and consider what kinds of situated knowledges autistics can claim. To do so, I examine the theory of Monotropism’s production, dissemination, and reception. First, I show how the theory of Monotropism constitutes a case of situated knowledge of autism which could reach a higher form of objectivity. Then, I show that its production, dissemination, and reception rely on non-innocent metaphors of nonhuman movement, mostly taken from physics and plant life, starting with the very term “tropism”, which tends to liken autistic cognition to the interactions between plants and their environments. Finally, I show how, in the age of a hegemony of reductionist science and of renewed binary debates opposing free will and biological determinism, the theory of Monotropism is sometimes taken up in a form that fuels a self-pathologising of autistic individuals. In turn, I call for greater accountability and reflexivity in the production, dissemination, and reception of autistic situated knowledges.

## 1. Introduction

For a long time and to a large extent still today, autistic people have been equipped with little more than pathologising and reductionist theories about our alleged deficits and abnormal cognitive, behavioural, and affective traits, offered as tools of self-identification. Autism, as we known, did not always exist as a category of individual and community self-identification, but was reclaimed in the aftermath of a decades-long history of scientific elaborations within the fields of

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psychiatry and psychology. Autism, in this context, is seen as a collection of traits whose very coherence tends to rely either on searching for a single aetiology or attempting to formulate an encompassing theory.

Even today, autism science is marked by a widespread desire for the comforting and objective truth of a single aetiology, meant to finally solve the mystery that autism is portrayed to be. This search for origins as a way to finally resolve the puzzling nature of autism has faced increasing objections from the autistic community. Autistics have called on scientists to focus on what actually matters to us<sup>1</sup>, like the ways to help us flourish at every stage of our lives, e.g. through improving sensory experiences, life skills, and public services (Pellucano et al. 2014, Silverman 2019). These failures of mainstream autism science can be attributed to a lack of interest in the input of autistics regarding our own experiences and testimony to pervasive and “systematic power imbalances” (Murray 2022: n.p.).

Increasingly, though, latent first-hand experience of autistics crystallises through the conception and dissemination of new ideas, models, and theories within the autistic community or by autistic scientists. The recent development of new models and theories of autism by autistic people themselves, like the Intense World Theory (Markram & Markram 2010) or the theory of Monotropism (Murray et al. 2005), has generated significant interest and approval within the autistic community, notably due to their focus on traits from the autistic experience judged more meaningful by the community. This minor yet growing agency among autistics in the making or shifting of autism science has brought the autistic community an increased ability to set the agenda for scientific and linguistic considerations. This approach, encapsulated by the slogan “nothing about us without us”, amounts to emphasising the necessity of starting with the insights, inputs, and needs of autistic people in the elaboration of knowledge on autism.

The emerging phenomenon of autism science made by autistics could be seen as part of what has been called “situated knowledges” (Haraway 1991), a notion often used to argue that minority or subjugated experiences are better understood by those who experience them first-hand. In this sense, rather than

<sup>1</sup> This article aims to call for more accountability in the situated knowledges of autism developed by autistic individuals. It is written by an autistic person and targeted, in part, at other autistics, and considers the decentring of non-autistic perspectives from autism science as a strategic epistemic move. For these reasons, I have decided to write from the first-person perspective, both singular and plural.

focusing on the origin of autism in order to open the way to new treatments and cures, the conceptions of autism brought forth by these new theories have offered autistic people new tools to make sense of our experiences in a more meaningful and encompassing way. Moreover, the notion of situated knowledges has led some to suggest that “in the absence of really solid [autism] science, [anecdotal information] is often the best we can get” (Murray 2022: n.p.). Indeed, when one wants to learn more about autism, the best advice one could be given is to start with the writings of autistics and to engage in conversation with us (Murray 2022: n.p.).

Yet, often, the idea of “situated knowledges”, taken from the field of feminist epistemology, is turned into risky forms of “‘identity’ politics and epistemologies” (Haraway 1991: 192) according to which not only is it necessary to be *of it* in order to say something true *about it*, but it is also sufficient. Because I am autistic, I must know what autism actually is. Nonetheless, because current language shapes and orientates what can be thought, it is not self-evident that autistic-led research would immediately bring a radical and definitive break from problematic conceptions. In other words, transparent first-hand experience does not immediately translate, like a perfectly calibrated mechanism, into bias-free self-perception and self-knowledge. As Haraway reminds us,

Vision is *always* a question of the power to see – and perhaps of the violence implicit in our visualizing practices. With whose blood were my eyes crafted? These points also apply to testimony from the position of ‘oneself’. We are not immediately present to ourselves. (1991: 192)

Rather, the production of self-knowledge is shaped by various path dependencies, increasing the risk of pathologising discourse within situated knowledges of autism.

Relying too easily on the idea of epistemic privilege for *all* those concerned with a given experience or material condition tends to deny the existence of diverse epistemic and conceptual positions and debates within said community, but it also assumes a purity of mind and language among its members. In a world of pathologising and ableist autism science, discourse, and representation, identifying as autistic has thus meant navigating between the necessity of putting words to lived experience – in order to foster acknowledgement and social change – and the nearly unavoidable risk of self-pathologising by identifying with problematic pre-existing images, metaphors, concepts, or frameworks. So, to what kinds of self-knowledge can autistics actually lay claim?

In fact, the very notion of “situated knowledges” offered by Donna Haraway (1991) aimed to avoid such easy and dangerous politics and epistemologies based on identity. It insisted that the privileging of “the positionings of the subjugated” in the search for objectivity relied on their locatability within systems of power, that is, on the ease with which they tend to be “called into account” and made “answerable” or “responsible” (Haraway 1991: 190–191):

The positionings of the subjugated are not exempt from critical re-examination, decoding, deconstruction, and interpretation; that is, from both semiological and hermeneutic modes of critical enquiry. The standpoints of the subjugated are not ‘innocent’ positions. On the contrary, they are preferred because in principle they are least likely to allow denial of the critical and interpretative core of all knowledge. (Haraway 1991: 191)

In this sense, Haraway reminded us of the complexity of the “science question in feminism”, torn between a radical constructivist view for which all knowledge is historical construction and objectivity is little more than a myth, and a form of “feminist empiricism” (1991: 186) which searches for a new positive and objective truth founded on the experiences of women. The solution, according to Haraway, lies in the difficult practice of “[holding] on to both ends of the dichotomy” (1991: 188).

In the context of autism, the new doctrine of objectivity offered by the “partial perspective” of “situated knowledges” might involve moving beyond simplistic empiricism by emphasising the socially or politically charged nature of metaphors and concepts, while aiming to acknowledge the particular modes of vision and attention granted by autistic embodiment. To formulate true and objective facts about autism when one is autistic, one therefore needs to consider what it means to perceive reality through an autistic bodymind and how these modes of perception are socially and politically shaped and regulated.

Yet, “[t]o see from below is neither easily learned nor unproblematic, even if ‘we’ ‘naturally’ inhabit the great underground terrain of subjugated knowledges” (Haraway 1991: 191). Autism is not just something one is, but something that one becomes in the form of a “coming-to-know” (Yergeau 2018: 160), a process through which one might never enjoy the comfort of knowing that truth has finally been reached for good. In this sense, if we, as autistics, are to understand our own modes of embodiment and cognition, that is to produce objective truth about ourselves and about autism, we need not take our object of inquiry as something immediately accessible. On the contrary, we

might need to question the very naturalness of our own autism and make ourselves accountable for our claims.

Interestingly enough, the question of embodiment (i.e. the ways in which autistic individuals perceive, sense, and pay attention to the world) constitutes the very focus of recent theories of autism developed by autistic scientists, like the Intense World Theory and the theory of Monotropism. Attending to how autism is, in such models, both presupposed as a pre-existing form of existence and embodiment *and* actively shaped through the languages of cognitive science and neurobiology, can help us ponder *the science question in autism*.

This paper uses the theory of Monotropism as a prime example of autistic situated knowledge illustrating *both* the newly acquired ability of the autistic community to shift the agenda within autism science *and* the risk of self-pathologising raised by the use of questionable metaphors and conceptions in the theory's dissemination and reception.

First, I show how, through its development by autistic scientists, its focus on reflecting the first-hand experience of autistics, and its broad scope and ambition, the theory of Monotropism may well constitute a case of situated knowledge of autism that could, therefore, lay claim to a higher form of objectivity.

Despite its foundation in complex cognitive psychology and its conceptualisation as an interest-based approach, I demonstrate that the theory of Monotropism relies on a non-innocent constellation of metaphors of nonhuman movement, mostly drawn from physics and plant life, starting with the very term "tropism", which tends to liken autistic cognition to the interactions between plants and their environments. I take this opportunity to reflect on the centrality of metaphors in the production and dissemination of scientific knowledges.

Finally, I show how, in the age of the hegemony of reductionist autism science, the theory of Monotropism has been faced with difficulties at the scale of reception. I suggest that, in a context of renewed binary debates between free will (or choice) and biological determinism, the theory is sometimes taken up in a form that fuels the self-pathologising of autistic individuals. I offer a counter-discourse focused on the phenomenological aspect of the theory, which I argue constitutes a promising orientation of discourses about autistic embodiment and cognition when it comes to remaining accountable for the metaphors and frameworks one uses.

## 2. The Theory of Monotropism as Situated Knowledge of Autism

Dinah Murray (1946-2021) was an autistic autism researcher and a political activist. Together with Wenn Lawson (1952-), an autistic author and autism consultant, and with philosopher of mathematics and political activist Mike Lesser (1943-2015), who was probably autistic as well, she developed a theory of autistic cognition that would later be known as the theory of Monotropism (Murray et al. 2005)<sup>2</sup>. In short, the theory of Monotropism posits that autistic individuals tend to focus intensely on a limited number of interests or activities at once, which shapes our way of perceiving and engaging with the world, whereas non-autistics tend to focus on more things at once and less intensely. Both Murray and Lawson had been working independently on a theory of autistic cognition based upon the idea of a singularity of focus or objects of interest, but their meeting at a conference in 1998 sparked a rich collaboration and friendship that lasted for decades (Murray & Lawson 2022).

Fuelled by its creators' background in cognitive psychology, the notion of 'monotropism' came with the opposite term of 'polytropism'. While the former refers to an autistic tendency to direct attention to only one thing at a time, the latter refers to a less closely targeted attention and a larger scope of interest in non-autistics. From this observation, the idea of a heightened intensity (or "arousal") of autistics' interests followed, which needs to be differentiated from the more flexible but also less intense (or "aroused") interests of allistics. This could be explained by the limited amount of attention available to an individual mind at any time, and thus by the different "strategies employed for the allocation of attention" (Murray et al. 2005: 140).

This theoretical foundation of the theory of Monotropism echoes the empirical observations made by and about autistic people and has granted the theory a positive reception from the autistic community. The idea of narrower but more intense attention could explain what autistics describe as 'special interests', understood as generally long-lasting interests on specific topics, usually "detail focused", which lead autistics to become near-specialists or experts

<sup>2</sup> The work on monotropism has resulted in the creation of different names for the theory, such as "Interest Theory" by Dinah Murray (2003) or "Single Attention and Associated Cognition in Autism", or SAACA, by Wenn Lawson (2011).

of said subjects<sup>3</sup> and to experience specific forms of “satisfaction or even ecstatic joy” (Murray et al. 2005: 141), often named ‘autistic joy’. On the contrary, taking an interest in the objects of attention of others when they don’t echo one’s own, or simply imagining what others are going through when one is so engaged in one’s own flow of attention, can feel very “hurt[ful]” and be experienced as a form of “coercion” (Murray 1992: n.p.).

Additionally, Lawson argued that the monotropic tendency of the autistic mind could result in the autistic need for routines and structures, which are less tiring and better suited to satisfy our monotropic tendency (Murray & Lawson 2022). Monotropism is also set to explain the autistic preference for monotasking and the autistic difficulty in switching between tasks or in imagining one’s potential future mental or emotional state, which is sometimes referred to as ‘autistic inertia’ or ‘executive dysfunction’<sup>4</sup>.

Monotropism would also explain the autistic struggle to maintain eye contact during conversations, because the additional information the autistic person must process makes it more difficult for them to focus on the spoken information being communicated by the interlocutor (Murray et al. 2005: 150). In this sense, monotropism could function as an explanation for the fact that autistic behaviour is often seen as “outside the bounds of social acceptability” (Murray et al. 2005: 144). Moreover, the notion of monotropism sheds light on the autistic tendency to lose awareness of one’s surroundings when engaging in a highly stimulating and interesting activity, an experience which neurodivergent communities have embraced under the term ‘hyperfocus’<sup>5</sup>.

<sup>3</sup> Curiously enough, our skill sets are also said to be more “uneven” (Murray et al.), “fragmentary”, and “patchy” (2005: 148-149), resulting in a “hindrance” (p. 149) to the enactment of pro-social behaviours. Although I do not engage in this discussion in this article, the language used in the initial paper on monotropism seems somewhat pathologising.

<sup>4</sup> Murray et al. argue that: “to a person in an attention tunnel every unanticipated change is abrupt and is truly, if briefly, catastrophic: a complete disconnection from a previous safe state, a plunge into a meaningless blizzard of sensations, a frightening experience which may occur many times in a single day. Following such an episode it may take a long time for any other interest to emerge” (2005: 147).

<sup>5</sup> Lawson himself related such an experience in the Murray et al. paper: “It’s as if I am tuned in to watching out for the birds. If a bird flies past, over or in front of me, it ‘catches’ my attention immediately. It doesn’t matter what else is going on, within or without me, my interest is the birds. I can watch them for hours, and during this time I am in a state of intense joy. Sometimes this intensity makes me cry” (2005: 145-146).

Interestingly, the theory of Monotropism, unlike the Intense World Theory, does not rely on neurobiology but on cognitive psychology<sup>6</sup>, it functions as a critical response to previous attempts to understand autistic cognition, judged pathologising and limiting – because they are based on a deficit approach – such as the arguments about “Theory of Mind”, “weak central coherence” or “executive dysfunction” (Murray et al. 2005: 140–141). The specificity of the theory of Monotropism might lie in its attempt to provide a more generous interpretation of autistic cognition, which leads to its notion of “aroused interest” being defined as “an interest charged with feeling”, and the study of autistic task performance being fuelled by motivation and the need for a sense of meaning (Murray et al. 2005: 140–141). The authors rightly note that autistics thus “tend to be either passionately interested or not interested at all” and suggest that “high motivation [brings along] higher levels of attention” (Murray et al. 2005: 142–144). This foray into affective dispositions prompts them to reject narratives of capacity and incapacity, which tend to rely on black-and-white portrayals of autistic skills, and instead argue for speaking in terms of degrees of “difficulty” (Murray et al. 2005: 144).

Consequently, the theory of Monotropism, as noted by Fergus Murray, Dinah Murray’s child, might represent the most comprehensive attempt to date at understanding autism (Murray 2018a), and is increasingly revised to encompass ADHD as well (Dwyer 2021, Boren 2022, Murray & Hallett 2023). In the context of my discussion of the situated knowledges of autism (i.e. by autistic people), it appears that the theory of Monotropism qualifies as a form of situated knowledge produced within the field of autism science, although it has mostly been relegated at the margins of the field and still has not led to a radical shift. Despite this marginality, the theory contributes to setting the agenda of autism science<sup>7</sup> and raises the scientific and political standards of the field, fostering hopes for what Donna Haraway calls a more *embodied* form of objectivity.

<sup>6</sup> Murray et al. (2005) argue that: “Our own proposal is about cognition: we do not know its relevance to neuronal activity” (144).

<sup>7</sup> Fergus Murray and Wenn Lawson explain that “It took a long time for the psychology establishment to take much notice, but in recent years, Monotropism has been receiving a good deal of attention not just within the autistic community but also among autism researchers – especially, but not exclusively, autistic autism researchers. New peer-reviewed work comes out most weeks that talks about it, and Monotropism is covered in more and more university autism courses” (2022: n.p.).

### 3. The Theory of Monotropism and the Non-innocent Metaphors for Autistic Cognition

The theory's interest in affective cognition, which nurtures a curiosity about what autistic individuals actually experience from the inside, should remind us of Donna Haraway's invitation to learn *what it means* to see and which technologies and apparatuses mediate our perception and knowledge production. In the case of autistic embodiment and cognition, Murray, Lawson, and Lesser argue that the autistic subject is akin to "a phenomenologist, trying to learn from what is seen, heard, felt, smelt, rather than from what can be implied or inferred from these sensations" (Jordan 1990, as cited in Murray et al. 2005: 143). According to them, autistic people, because we are predominantly sensory beings, might be less concerned with linguistic considerations of meaning or function, and with "*thinking strategies [...] such as comparisons, metaphors, contextualization and social motivation*" (Jordan 1990: 143).

This idea was confirmed during a brief exchange of emails with Fergus Murray (E-mail message to author, May 1, 2024), in which I aimed to inquire about the origin of the very term, 'monotropism'. I knew the notion had been suggested to Dinah Murray, Fergus's mother, by her friend Jeanette Buirski (Murray 1992), but I wondered what had sparked interest in the realm of tropisms. According to Fergus Murray, Dinah had never explicitly linked monotropism to the biology of tropisms, and it was unlikely that she and her co-authors had taken inspiration from John Bowlby's theory of monotropy. Fergus Murray explained that the term was likely inspired by etymology, with 'tropism' coming from the Greek *τρόπος* (*tropos*), which evokes the act of 'turning'. Feeling one's attention shifting towards or setting into a specific object of interest is indeed something most autistics can easily get a sense of when hearing the word 'tropism'. This account was confirmed by Wenn Lawson (E-mail message to author, May 21, 2024), who explained that 'tropism' might have emerged in the discussion as a way to signify the "orientation" or "channel" of attention. As Donna Haraway herself taught us, though,

"[a]ll stories traffic in tropes, i.e. figures of speech necessary to say anything at all. Trope (Greek: *tropós*) means swerving or tripping. All language swerves and trips; there is never direct meaning, only the dogmatic think that trope-free communication is our province" (2003: 20).

'Monotropism' as a word is no exception, and functions as a linguistic trope which swerves and trips. To say 'tropism' (which expresses a *turn* of the mind

towards something) says something else than to say ‘attention’ (which expresses a *tending* or *tension* of the mind towards something). In this sense, ‘tropism’ is no less a trope or metaphor than other words. To *turn* towards (or to *be turned* towards) is not the same thing as to *tend* towards something. As ethnographer Marilyn Strathern taught us through Haraway, “it matters what ideas we use to think other ideas (with)” (2016: 12).

Precisely, the production, dissemination, and reception of the theory of Monotropism have brought forth a constellation of explicit images and metaphors for autistic psychology and particularly autistic cognition and attention. In the original article by Dinah Murray, Wenn Lawson, and Mike Lesser, an optical metaphor of light and focus is used, linking the spectrum between polytropism and monotropism with the images of “diffused light at one extreme and a torch beam at the other” (2005: 140). Thirteen years after the publication of the joint article, Dinah Murray expressed a change of heart, relating that “we now prefer a water analogy, as water has flow and turbulence, and finds its way through any gap: monotropic people appear especially good at spotting the cracks and gaps” (2018: 2).

Then, in a conference presentation from 1998, Dinah Murray and Mike Lesser provide background context for their development of an “ecological model” of the autistic mind. As they remind us, their mathematical model of attention is inspired by scientific work carried out by Lesser and his colleague Peter Allen: “a fundamental and limited resource, solar radiation, is competed for by a spontaneously arising hierarchy of life forms. In our model the fundamental and limited resource is mental attention” (n.p.).

Finally, a visual metaphor for monotropism is found at the top of one of Fergus Murray’s articles, that of the opposition between a “smoothly curving trunk” – representing monotropism – and the “heavily branched” tree of polytropic attention (Murray 2021: n.p.). Murray explains this choice at the end of the text:

“[t]he photos at the top are my own; I thought it could be good to have something that illustrates the idea of degrees of branching, and after spending a while looking at satellite images of gorges and deltas this is what I came up with” (Murray 2018b: n.p.).

Wenn Lawson (2011) uses a similar metaphor in his book on autistic learning styles when he suggests that

The solid filled tree foliage background in AS [autism spectrum] represents the brain's resultant interests from available single attention as highly focused interests. The 'see through' form in NT [neurotypical] represents the brain's resultant connection to attention and diffuse interests (104).

Here, one is presented with a slim autistic trunk of attention and a "narrow and deep" foliage of interest on one side, and with a larger neurotypical trunk of attention and a "broad and shallow" (Lawson 2011: 105) foliage of interest on the other.

Other metaphors come from commentators of the theory of Monotropism. For instance, a Twitter user presents a seasonal metaphor for monotropism where each season is associated with a different type of mental state (spring as change of interests, summer as flourishing into one's passions, autumn as inertia and burnout, and finally winter as rest and recovery)<sup>8</sup>. Autism advocate Kieran Rose, in an animated video on monotropism shared on Fergus Murray's Monotropism website, offers the black hole metaphor, arguing that

the monotropic brain is looking for an 'in', a 'hook', something to spark its interest [...] [and] when it has found that hook, the Autistic brain is able to hold onto it, but the focus of our attention has more mass than anything else in our environment; it's like a black hole, its gravity drags us in, we are pulled towards it with immense force (Rose & Knowles).

Lastly, in a personal communication with Wenn Lawson, H. Stone compares autistic monotropism to the fixed direction of a train set onto rails, whereas polytropism is linked to the easy change of direction of cars (Stone 2000, as cited in Lawson 2011: 107).

The choice of metaphors like light intensities and directions, water movement, or black holes, mass and gravity, draws from physics and invokes notions of energy and forces. These metaphors implicitly portray autistic attention and interests as being dragged, pulled, or pushed by physical forces and movements, rather than biological, let alone subjective ones. As I will show in the third part of this paper, they appear just a step away from a simplistic and risky representation of autistic traits as "unintentional" or "involuntary".

The tree metaphor and that of life forms competing for the limited resource that is solar radiation, though, evoke the realm of plant biology, and call for a discussion of plant tropisms. The concept of tropism, offered by plant physiologist Julius von Sachs, can be defined as "an obligatory movement made by an

<sup>8</sup> "1. A seasonal interpretation of #monotropism." (@AutisticRealms, May 2, 2024).

organism in a response directly proportional to a physical stimulus” (Haraway 1976: 21). Belgian author and psychologist Georges Thinhès (1966) sheds light, in *Psychologie des animaux* [Psychology of animals], on the difference between plant tropisms and animal taxes, the latter being innate *behavioural*/responses to environmental changes. In the plant world, tropisms occur during plant growth and correspond to the orientation of a specific part of the plant (roots, stems, or branches) in a given direction, whereas animal taxes imply “an overall movement [of the organism] in a particular direction” (Thinhès 1966: 137–138)<sup>9</sup>.

Plant tropisms follow from different forms of stimuli, giving rise to the notions of phototropism (attraction of light), chemotropism (attraction of specific chemical elements), thermotropism (attraction of heat), hygrotropism (attraction of humidity), and geotropism (attraction of gravity). Tropisms, as Thinhès reminds us, can be positive or negative, which amounts to movements *towards* or *opposite* the source of stimulation. Precisely, in the context of the tree metaphor used by Fergus Murray, it is relevant to note with Thinhès that “the roots display positive geotropism (catageotropism) and the stem displays negative geotropism (anageotropism)” (1966: 150), which means that roots are directed towards the inside of the Earth and the trunk grows in the opposite direction.

By using examples taken from physics (light, water, black holes) and plant biology (tropisms and season changes), rather than from animal or human biology and psychology, the theory of Monotropism is formulated or received in ways that associate autistic cognition with a particular imaginary. I want to insist on the non-innocent nature of this imaginary since, by merging physical matter, plants, and animals, i.e. physics, plant biology and zoology, it ends up echoing the reductionist representations of nervous systems in autism discourse.

In passing, let me mention one key (but recent) counterexample, namely the ‘meerkat mode’ metaphor offered by Tanya Adkin as a way to assimilate the monotropic state of attention with the “*heightened state of vigilance and arousal* [experienced by meerkats, which] *involves constantly looking for danger and threat*” (Adkin 2023: n.p.). This metaphor is interesting because it acknowledges the fundamental similarity between the subjective state of the meerkat and that of the autistic human. The proximity between plants competing for solar radiation and autistic interests competing for some of the mind’s limited attention, on the other hand, is less evident.

<sup>9</sup> All citations of Thinhès and Buytendijk are originally in French and translated by myself.

This is something Dinah Murray herself seemed to acknowledge during the conference where she first presented on autism and with whose proceedings she first published on monotropism: there, she answered an audience member's question about how to make sense of the diversity of the fields where she and Lesser aimed to apply the ecological model they had developed. She conceded: "[w]hat the relationship is between these interpretations is a very interesting question" (Murray 1992: n.p.). Curiously, though, Murray and Lesser (1998) later offered a description of the autistic mind which is more evocative of the meerkat than the plant: "[i]t is a mind optimised for searching for sustenance in a dangerous environment in which resources are scarce" (n.p.). It becomes clear that, despite the supposedly rare use of metaphors by autistic people, the very production of an (autistic) situated knowledge of autism through the theory of Monotropism has heavily relied on metaphors and tropes.

Donna Haraway, trained as a historian of science, wrote her PhD thesis on the emergence of organicism in early 20<sup>th</sup>-century developmental biology. The book which was published based on this research, titled *Crystals, fabrics and fields: Metaphors that shape embryos* (1976), highlights the role of metaphors, images, tropes, and an aesthetic sense at large in the production of scientific facts and paradigms. It shows how what we often consider mere supplements to scientific theories or tools to help with their dissemination are actually instrumental in the very process of developing arguments, theories, and paradigms.

Interestingly enough, the organicist paradigm which Haraway focused on developed as an alternative to the mechanistic paradigm in biology. As Haraway explains, "[t]heories of tropisms, physiology, biochemistry, developmental mechanics – all illustrate both the triumphs of work conducted under the mechanistic program and the strains leading to the new paradigm" (1976: 17). Tropism, initially conceived by botanist Julius von Sachs to describe plant movements, was later extended to animals by Jacques Loeb, a biologist and physiologist, and a student of Sachs. According to Haraway, "[t]ormented by a deep need to resolve the issue of free will and determinism in human action, Loeb found a solution in his doctrine of animal tropisms, first elaborated about 1880" (1976: 21). This doctrine, both influential and radical, led Loeb (1912) to develop what he called a *Mechanistic conception of life*, which relied on "the belief that biology could be understood entirely through reduction to physics and chemistry, that is, a microdeterministic physics and chemistry" (Haraway 1976: 148).

Loeb's ultimate objective was, as a good mechanist, to extend his views to humans and reduce all social relations to physicochemical forces and reactions<sup>10</sup>. Yet, as authors such as Herbert Spencer Jennings, Georges Thinhès, and Frederik Buytendijk have demonstrated, the notion of tropism has little to no validity in the context of animal movements and behaviours. As early as 1906, "Jennings demonstrated that many lower organisms did not display true tropistic behavior but rather showed spontaneous activities until a chance course of action relieved distress. Pure determinism did not explain even the behavior of simple animals" (Haraway 1976: 22). Thinhès, in the precited volume, reminds us that "tropistic phenomena [in plants] are therefore followed by molecular transmission phenomena in the stem, and these are quite different from those seen in animals, since the plant has no nerve structure" (Thinhès 1966: 139). Frederik Buytendijk notes, in turn, how the animal theory of tropisms "completely eliminates psychology as a science" (Buytendijk 1928: 53) and renounces all considerations of subjectivity as part of animal movements and behaviours. All causes and effects, then, could be traced back to a physiological substratum such as the nervous system.

According to Buytendijk though, animal movements and behaviours rely on different factors than the movements of plants. Instincts, although innate, respond to "an unconscious necessity that acts in the animal's soul" (Buytendijk 1928: 57), i.e. a goal towards which the animal tends in a specific situation. Moreover, animals, even those with a so-called 'simpler' organisation, are shown to be able to form habits going against their natural tropistic tendencies (Buytendijk 1928: 62–63). As Buytendijk shows, the theory of tropism, which portrays the animal as "a machine without soul" (1928: 57), rejects such ideas, and should therefore be rejected (Buytendijk 1965: 78–79).

As such, there is a clear difference between sunflowers – which are *drawn* towards the sun, not intentionally orientating or *tending* towards it – and autistic humans. What moves the sunflowers in the direction of our star (a phototropism) is not a subjective experience or a preference, but a blend of physical and chemical interactions – as complex and relational as they might be. Sunflowers don't behave; rather, they biologically interact with and adapt to parts of their environments through physicochemical processes. Autistics, on the other hand,

<sup>10</sup> In his book on the psychology of animals, Frederik Buytendijk quotes a claim by Loeb that even "the constant love of a man for a woman [...] is a complicated tropism" (1928: 53–54).

and in this sense like other human and nonhuman animals, behave and move spontaneously (Buytendijk 1965: 78–79) and subjectively, although perhaps at times in innate and non-reflexive ways<sup>11</sup>.

#### 4. Free Will and Determinism in the Theory of Monotropism and its Reception

The theory of Monotropism, though it is anchored in a cognitive framework which attends to the complexities of interest and motivation, takes part, at least implicitly, in the debates surrounding free will and determinism that tormented Loeb and interest me here. Indeed, in his book on the learning style of autistics, Wenn Lawson (2011) argues that “[i]n AS [autism spectrum], monotropic attention is not seen as a *choice* but as integral to our learning style” (107, emphasis mine). The discourse of determinism here could be seen as challenging the widespread rhetoric of choice and responsibility in the neoliberal era, shifting guilt from autistics to intolerant allistics. Yet, in doing so, it takes the risk of going back to a mechanistic conception of life, for which attention tropisms are the mechanical effect of an internal and/or external physical cause, without being taken up by a subjective agent.

What is at stake in the debate between free will and determinism is the role these notions have played in the marginalisation and exclusion of specific classes of beings in the history of Western thought and politics. The mechanistic and deterministic conception Loeb radicalised in biology is often traced back to Descartes, for whom animals could be described as automata moved by the laws of nature rather than animated from the inside. This very rhetoric of deterministic and mechanistic causes of behaviour has also been applied to the humans encountered by colonisers in the so-called ‘New World’ or, more recently, to disabled and neurodivergent humans. In the words of autistic scholar M. Remi Yergeau (2018), the rhetoric of ‘involuntarity’ has, in many ways, become the standard framework for understanding autistic cognition and behaviour. Emphasising

<sup>11</sup> Recent findings in plant biology and biosemiotics highlight the complex modes of interactions between plants and their environments (including with other living beings). These interactions are often presented as evidence of plant cognition, intelligence, subjectivity, or even sentience. While there is an important sense in which these biological findings can help us foster a new understanding of plant life, I diverge from the philosophical, interpretative, and terminological framework they rely on, which seems to flatten and negate the differences between plant and animal life. My understanding of the ontology and phenomenology of plant life and animal existence relies on Burgat 2012, 2020.

involuntarity and unintentionality therefore contributes to denying autistics the chance to express ourselves agentially and autonomously and underlies problematic forms of autism policy, education, and therapy, such as Applied Behavioural Analysis, or ABA (Yergeau 2018).

Certainly, through its focus on affect, motivation, and goal-orientedness, the theory of Monotropism escapes the accusation of mechanism. Yet, the dualism between choice or free will (which implies moral responsibility, if not guilt) and passivity or determinism (which tends to eschew individual or subjective response-ability), which Lawson seems to draw from – and which has become so common in the situated knowledges of most marginalised communities today – is a false opposition. Subjectivity should not be reduced to the reductive idea of reflexive, free will and transparent consciousness: it can also be understood as unconscious or infra-conscious intentionality. Similarly, rather than being described as a mechanism where one cog moves forth the next in linear causality, the “autistic mind” can be thought of as a pre-existing disposition that needs to be taken up and enacted by the individual through spontaneous movements and behaviours, i.e. as a structure which orients without determining. Here, the notion of “strategies”, as introduced by the original authors in 2005, serves as a good example of the nuanced nature of agency<sup>12</sup>.

It could be that the main challenge for the theory of Monotropism lies at the level of its reception and interpretation. It has become common in neurodivergent communities to hear autistic and/or kinetic<sup>13</sup> individuals explain their difficulties with multitasking and eye contact, or their need for routines and structures, by an easy and innocent “my brain is just wired that way”. Or perhaps, “I wanted to complete this task but my brain didn’t let me”. For instance, an anonymous Twitter user explained that “[a] #monotropic brain *can* only focus on one thing at a time. Other people can misunderstand us, thinking we are *deliberately* being difficult when *it is actually our neurology and not our fault*” (@AutisticSelves, 2022, emphasis mine). Context matters and the expressions and metaphors I am quoting here serve the important role of challenging the erroneous perception of autistics as lazy or careless. In such contexts, they might

<sup>12</sup> According to Damian Milton, the term can be explained by the idea that, in the context of sensory hypersensitivity, for instance, monotropism becomes a positive issue rather than a dysfunctional thing, because it brings the individual “predictability”, “control over [one’s] immediate environment, a “sense of achievement”, and “in-the-moment fun”. (Studio III Atass 2018).

<sup>13</sup> ‘Kinetic cognitive style’ is the term offered by Nick Walker as replacement of the pathologising ‘ADHD’.

elicit epistemic generosity from allistics towards autistics. At the same time, such a biologically deterministic and mechanistic representation of autism implicitly substantiates and validates the pathologising view of autistic cognition and behaviour as unintentional and involuntary.

As mentioned, the theory of Monotropism is not formulated based on a neurobiological background, yet it is often explained and described as a discussion of the “monotropic brain”<sup>14</sup> or “monotropic neurology” (Rose and Knowles n.d.). For instance, the video narrated by Kieran Rose cited above, argues that “if you’re not aware of Monotropic *neurology*, it can be easy to assume that while in a flow state, an Autistic person is *deliberately* disengaged, *deliberately* not listening, or not paying attention on purpose” (Rose and Knowles n.d., emphasis mine). Whereas the end of the video uses the language of difficulties and transitions, the physics metaphor of gravity and black holes tends to portray monotropic tendencies as passively and unintentionally experienced, unilaterally caused, or determined by one’s Monotropic brain. This view backgrounds the subjective (although not necessarily rational or reflexive) dimension of the state of flow which is, once again, interest-based. It becomes clear that neurocentrism (the focus on brains and nervous systems) often leads to neuroreductionism (the reduction of subjective phenomena to physicochemical processes). Because neuroreductionist rhetoric portrays autistic cognition as unintentional and subjectively disconnected from the exterior world, it thus proves pathologising.

In this sense, as Dinah Murray (2020: n.p.) testimonies,

Unfortunately, the fundamental idea of monotropism has to some extent been misunderstood and misrepresented since we first published it (Murray 1992, Lesser and Murray 1998 [...]) because it has not been understood in the context of minds as interest systems.

In other words, the problem lies in the way the theory of Monotropism has been received in reductionist and mechanistic terms, missing the ecological (i.e. dynamic) modelling with which it defines autistic cognition. Oftentimes, in our age of a hegemony of the neurosciences, neurodivergence is understood as a discrete nervous structure that is well differentiated from the neurotypical. In this

<sup>14</sup> At the time of writing, a search for “monotropic brain” in the search engine of Twitter/X results in almost a hundred examples of assimilation of autistic attention to the idea of the autistic or monotropic brain.

sense, autism is seen as something one is born with and which fully determines one's abilities and inabilities, experiences, and actions. Thus, the ways in which autism presents at different stages of life are not always explicitly understood to follow from a dynamic engagement with one's subjective experience and environment.

On the contrary, Dinah Murray understood autism and allism as the two poles of a spectrum of neurodiversity and, instead of focusing only on their differences, insisted on the commonalities between them (Murray et al. 2023). Moreover, she argued that monotropism is the shared condition of all human babies (Murray 1992) and that more or less supple or rigid forms stabilise later based on the effort of relatives to engage the baby in a variety of interests. The reception of the theory of Monotropism within a hegemonic and collective neuroreductionist mindset has thus taken the form of the view that autistic neurology, because it is fundamentally different from allistic neurology, determines autistic experiences without leaving room for choice, free will, or subjective intentionality, let alone infra-conscious or pre-reflexive intentionality.

My goal here, in critiquing this reductionist mindset, is not to claim that there is no experience of passivity, constraint, or limitation in autistic cognition, or that special interests may never feel like one is *drawn towards* or *absorbed by* the object of interest. Yet, again, the kind of passivity described by the theory of Monotropism is not one that leads to full-on inabilities, but to *difficulties*. The complexity of the discussions surrounding autism and disability is such that no way of framing and phrasing our experience is ever innocent, and neither is the notion of 'difficulties' I am addressing here. To be clear, stating that autistics experience difficulties rather than inabilities in the context of monotropism does not mean that autistics should be forced into behavioural or cognitive styles that are not "natural" for us or "preferred" by us. The flexibility of autistic bodyminds does not make it ethically acceptable to coerce them into neuronormative attention styles.

Rather, speaking of difficulties is a way to call for concrete changes in the ways allistics engage with autistics. As Murray, Lawson, and Lesser (2005) argue, autistics may encounter "*difficulties with shifting cognitive set* except where the target is a strong attractor for that individual: that is to say, where it appeals to one of that person's few prior interests" (143). In that sense, during monotropic states, "[n]o alternative attractor may be *apparent*" (Murray et al. 2005: 146, emphasis mine), and this is indeed a question of perception, including, as Haraway reminds us, of vision. The vocabulary introduced by Murray,

Lawon, and Lesser thus bears significant consequences on clinical and interpersonal practices: the authors suggest that rather than attempting to redirect the attention of an autistic subject through constraint, relatives and clinicians “start where the child is” (2005: 153). They encourage allistics to ensure that autistics build connections to other individuals, activities, and things through the pursuit of their *own* interests and endogenous motivation.

Admittedly, there is something quite intriguing (perhaps more-than-human<sup>15</sup>) about the idea of attractors of interest. It is interesting to explore the multiple ways in which we, as human animals, are not *as* free to determine ourselves and our actions as we imagine. However, hyperfocus relies more on interests than on mechanics; and interests (from Latin “*inter esse*”, “being in-between”) are forms of spontaneous movements that allow us to get out of ourselves. *To be interested* means letting oneself drift into the space between subject and object. It means entering a transformative “contact zone” (Haraway 2003) opened by the situated encounter with otherness. The “ecstatic joy” mentioned by Murray, Lawson, and Lesser (2005: 141), speaks to this experience: autistic interests are all about *ekstasis*, about standing outside oneself and being transported. Interests, therefore, embody both a form of capture and a means of letting oneself go.

The state of flow, which psychologists Jeanne Nakamura and Mihály Csikszentmihályi (2009) describe as “the experience of complete absorption in the present moment”, requires a positive affective, cognitive, and physiological disposition. To enter a state of hyperfocus, monotropism, or flow implies a disposition to letting oneself go. For me, hyperfocus is when I feel most connected to the world and to others: ideas flow through me as I give myself over to the joy of infodumping my partner about my current special interest, or of writing a research paper like the one you’re reading. Hyperfocus differs from interactions with allistics or from standing in an unbearably overstimulating environment. In those latter cases, I feel *taken* out of myself, *captured* by others in a way I do not desire. Yet I resist. I can feel myself *tending* to other objects of interest than the ones imposed on me. The difference between hyperfocus or monotropism and capture by or acclimatisation to unpleasant objects lies in desire. Hyperfocus oozes with desire, it brings me a sense of meaning, fulfilment, and connection.

<sup>15</sup> Dinah Murray (2020: n.p.) explains that: “Though this is mainly about humans, all living things have survival interests and act to further them”. Here though, one might wish the broad category “living things” were broken down to explain the differences between plant reaction and animal behaviour.

In contrast, masking and acclimatising to an unwelcoming environment or social setting feels effortful, exhausting, and meaningless.

As such, what the theory of Monotropism should prompt us to say, is not so much that autistics are drawn to restricted and closed interests rather than multiple open ones (because of our neurology), but that we (perhaps unconsciously) desire transportation, to such an extent that we deprive other objects of the ability to affect us. Autistics possess a particular disposition to letting ourselves go, to *giving ourselves over* to our objects of interest. In this sense, the affect- or interest-based nature of the theory of Monotropism makes it compatible with a phenomenological approach and a non-mechanistic understanding of biology and psychology<sup>16</sup>. Phenomenology, indeed, does not presuppose the validity of our preconceptions about ourselves, which are often based on theories and tropes which we might not be consciously aware of. Rather, it requires that we interrupt our common sense – our natural impression of knowing ourselves and the world – and attend to the ways and modalities through which our consciousness actually turns to world objects. With the theory of Monotropism, it might follow that autistic phenomenology – if such a thing exists in singular form – is characterised by a disposition for being intensely interested in singular objects at a time.

## 5. Conclusion

Through the case study of the theory of Monotropism, this paper has aimed to complicate our understanding of autistic situated knowledge production and self-identification. Following Donna Haraway's insights about the complexities of navigating between naive empiricism and identity politics, on the one hand, and radical social constructivism, on the other, my goal was to reflect on the kind of objectivity that autistics could claim in our production and dissemination of knowledge about autism.

As I have demonstrated, knowledge and identification often do not derive immediately and causally from direct experience but are mediated by histories of science (such as the age-old debates about free will and determinism) that are riddled with power imbalances and political (or clinical, or pedagogical) consequences even today. This reality calls for renewed attention to the non-inno-

<sup>16</sup> Phenomenology is, precisely, the methodology used by Dinah Murray, et al. (2023) in the last paper Murray published before she passed away.

cent implications of the metaphors, tropes, and images we use, and to the complex entanglement of various regimes of pathologising. More than mere supplements that help to popularise scientific facts, tropes and metaphors play a determining role in the production, dissemination, and reception of scientific facts and paradigms. *It matters what ideas we use to think other ideas (with).*

In engaging with the theory of Monotropism in this piece, I have not aimed to cast it in a negative light or to present it as an example of failed situated knowledge of autism. On the contrary, my intention has been to demonstrate that no theory, regardless of its solid theoretical framework, serious engagement with first-hand autistic experiences, or best intentions, is ever innocent or immune to the risk of conveying or facilitating damaging metaphors and images, let alone of being misinterpreted or applied in questionable ways.

Through my exploration of the metaphors and tropes drawn from the fields of physics and plant biology, particularly the concept of biological tropisms, I have sought to emphasise the importance of contextualisation and mediation, countering the myth of the transparency and innocence of language and ideas. As I have illustrated, in a world rife with ableist and pathologising rhetoric about autism across science, culture, and activism, it is crucial to remain accountable for the tropes, swerves, and shifts that we (sometimes unconsciously) adopt, and the contexts in which we use them. The example of biological tropisms encapsulates a range of politically charged imaginaries about free will and involuntariness, choice, and determinism, making it an ideal case for nuanced discussion. As I have tried to show, what is at stake is not putting non-innocent (let alone, guilty) metaphors on trial and replacing them with innocent ones, but rather asking ourselves what prompts us to use particular metaphors and which frameworks and realities we are calling into being with the figures we use. With Leigh Star, cited by Haraway (2018: 38), we need to ask ourselves: “*Cui bobo?*” Who benefits when we use this or that metaphor?

To remain accountable for the knowledge we create, or rather “response-able” (Haraway 2008; 2016), is to answer *for* the contexts from which we speak and the sometimes unpredictable consequences that might ensue from the production and dissemination of situated knowledge. As such, I am not suggesting we cut plant or physics metaphors out of the picture when addressing human or animal subjectivity simply because they tend to put focus on involuntariness. Instead, I suggest we use them more knowingly and learn to stay aware of their possible pathologising effects.

More than a game of naming and blaming, then, my endeavour with this paper on monotropism has been to foster a broader sense of accountability and response-ability in addressing self-pathologising tendencies, with the hope that we can collectively move towards stronger and less innocent situated knowledges of autism.

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