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#vagusnerve: Self-help Discourses That Move Bodies Towards Novel Forms of Biosociality

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Abstract

As the largest nerve in the parasympathetic nervous system, the vagus nerve (VN) is in charge of the restorative functions of the body. This nerve tracks the conditions of the internal organs that message it to the brain. This analysis explores the discussion of this organ on social media platforms where the VN is framed as a health enhancement apparatus and the online audiences are invited to practice what is referred to as 'vagus nerve activation'. By implementing practices of governing health, therapists/influencers tagging #vagusnerve distribute VN-related information to market a workshop or an online course that addresses trauma and focuses on healing nervous system dysfunctions. Following the #vagusnerve hashtag circulating on Instagram and looking at the underlying conceptions of the discourse drawn from the Polyvagal Theory (PVT), I map how the discourse becomes embodied. The materials assembled for analysis exemplify how VN discourses surrounding the nervous system play a role in people's understanding of their body, generating new types of biosociality. This analysis contributes to the objectives of critical disability studies by looking specifically at how neuronorms are reinforced within the self-help discourse on the vagus nerve and how biological discourse creates social belonging.

Keywords: vagus nerve, polyvagal theory, neuroscience, co-regulation, self-help, biosociality

Introduction

Scrolling Instagram can be a journey of becoming aware of one's nervous system while learning simple hacks for activating the vagus nerve (VN). One can, for instance, alter breathing patterns or perform simple stretches that produce a feeling of relief. The VN is a bidirectional neuronal pathway of the gut-brain axis. According to traditional and established anatomical and neuroscientific understandings, the VN belongs to the parasympathetic nervous system which is identified as facilitating the rest and digest mode, whereas the activation of the sympathetic nervous system produces what is referred to as the fight-or-flight response. As the longest cranial nerve in the parasympathetic nervous system, the VN participates in the maintenance of corporeal homeostasis by transmitting information from the viscera to the brain and vice versa (Fulling et al. 2019), regulating immune system (Pavlov and Tracey 2012), and all internal organ functions to restore balance (Breit et al. 2018).

The VN that I have explored on Instagram through #vagusnerve is described in terms of health-enhancing functions. The specific area that intersects neuropsychiatry and different types of body therapies provides the discourse and practices circulated within the #vagusnerve. Originating from a mixture of different somatic therapies that are largely derived from Polyvagal Theory (PVT), people are instructed to swing, shake, rotate, tap, or stroke their bodies in specific ways, dip in cold water, hum, hug, and the list goes on. These self-help tips are claimed to activate, tune or tone the VN, which would then impact overall well-being favourably. The VN is portrayed by using the mechanistic physiological depiction, but what makes it compelling for the lay public is the manner in which it opens a space to govern the VN.

Many of the self-help articles, blogs, and social media posts begin by stating that the vagus nerve is from the Latin word vagabundus, meaning wandering, because the nerve

travels around the body, connecting the brain, visceral organs, and the gut. They explain the metaphor of wandering and invite people to become subjects of the VN by directly engaging the reader's attention with an intriguing narrative. Not only is the VN depicted as the 'great wandering protector of the body' (@influensser1), but it is promised to be the key for enhancing the body and mind: 'learning the language of the nervous system is the way to hack into your neurology and ensure long-lasting mind+body changes that, create a 2.0 version of you' (@influensser6).

With these promises, it is difficult to follow #vagusnerve without being tempted to try out all the different hacks such as the 'butterfly hug' (crossing one's arms around oneself and tapping on one's chest). All of a sudden, the body of the potential VN tuning practitioner has an agent that was not previously there because there was no knowledge of it. Understood this way, it is as if there is now a lift or a busy highway that meanders around the brain, neck, chest, and gut that is in charge of the interrelated functions of breathing, heartbeat, digestion, and mood. From the beginning of my research the hacks delighted me as much as my critical sociological lens guided my positioning with the discourse. The narrative suggests that in the age of stress-related dysfunctions, it becomes more difficult to reach the restful mode of the nervous system that restores the balanced functions of the body: with vagus nerve activation one could manage all of the conditions that busy and distracting, inflammatory modern lifestyle causes.

Although self-help offers solutions for health problems, it has been criticised for rendering subjects self-responsible (Rimke 2020) for meeting health norms and ignoring external and structural impacts on health, which can be outside of a subject's self-control. Individuals benefit from the VN activation methods, but like in any self-help, the science behind it has undergone commercialisation. Interpretations of medical data are obscured already on the path from scientific findings to their applications, and meaning is attached to

the data in various stages of its circulation, especially when the knowledge enters the social media platform context. The objective of this paper is to go beyond an uncritical embrace or rejection of neuroscience. Rather it is to find novel ways to engage with neuroscientific approaches, and keep space open for the meaning of vagus nerve science (Choudhury and Slaby 2012.) I align with feminist science and technology studies (STS) in seeking other ways of looking at biological matter than the critically anti-biological or affirmatively enthusiastic (Wilson 2015). Aligning with the feminist, new materialist STS approaches the concept of somatechnics enables readings of biology that bring together the social and the technological as always already embodied (Murray and Sullivan 2011).

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The self-help that builds on #vagusnerve discourse is informed by neuroplasticity, a dominant concept in contemporary neuroscience. The personal growth that targets brain plasticity offers a novel approach to governance and self-help by introducing the brain as malleable and transformable (Rose and Abi-Rached 2013). A wide range of discourses, images, and practices industrialised within neurosciences have gained considerable attention in self-help. These practices and discourses aimed at maximising brain performance to produce 'somatic "bioidentities" that replace psychological and internalistic notions of personhood' (Ortega and Vidal 2007: 256). After guiding the reader through the neoliberalisation of neuroplasticity, and identity production inherent in self-help also in my materials, I examine the implications of neuroplastic governance in the context of VN management.

The main source for the #vagusnerve discourse and practices is Polyvagal Theory (PVT). PVT, in its aspiration to produce a holistic understanding of mental and physical health, has been praised for explaining the emergence of complex social behaviour (Beauchaine et al. 2007). The theory rests on the work of professor of Psychiatry Stephen Porges, whose studies intersect psychology, neuroscience, and evolutionary biology. I

analysed how articles written by Dr Porges and Instagram posts with the #vagusnerve together contribute to the way claims regarding the VN become materialised in society. I selected the most important themes that arose from the data for discourse analysis, which are neuroplasticity and co-regulation.

Gradually introducing a novel set of concepts for nervous system management, the PVT bridges the gap between separated domains of societal and biological. Through the concept of co-regulation, PVT offers a physiological explanation for endeavours that the neuroplastic paradigm has also aimed at. In life sciences this has been discussed as biosociality, which should be carefully reconfigured as ongoing interdisciplinary relationality accounting humanity, evolution, culture, and social life (Ingold and Palsson 2013). Biosociality refers, for instance, to how identities and social structures are shaped based on biological knowledge. To investigate this phenomenon within the social media materials is justified because the internet can be identified as the vehicle for new forms of biosociality (Ortega 2009). I focus particularly on what emerges on the biosocial field within the PVT and #vagusnerve. Turning to critical neurodiversity literature, my paper will show how co-regulation produces a certain form of biosociality that depicts social behaviour outside of neuronorms as a failure to self-regulate.

The societal ideations present in social media posts tagged with #vagusnerve exemplify how neuroscientific discourse can become an object of fascination within different public spheres. Online publics are exposed to new conceptions of thinking about neuroscience and society, and sociality is strongly incorporated in the narration of health management. The sociopolitical meaning, and promises that the neurosciences create, should be analysed as they exaggerate and inflate expectations of health management. Health management that is legitimated by neuroscientific claims demands social scientific attention as a new ethical obligation is being facilitated and subjectivities are being shaped in the

procedure (Rose and Abi-Rached 2013). The critique as well as the enthusiasm of the social sciences and humanities have previously focused upon the brain in neurosciences (ibid 2013) has lacked an exploration of the vagus nerve and especially theories such as PVT. The objective of this paper is to tap into the potentially influential VN-related self-help field that moves bodies towards novel management of well-being creating a narrative of neuronal bodies. The self-help practices displayed within #vagusnerve reveal how the brain's new role in the body continues to evolve and constructs explanations for bodies and their mental and physical pathologies accompanied by the wish to explain sociality.

Methods and Materials

Instagram acts as a platform for translating the vagus nerve (VN) discourses into practices as lay audiences tap into the promises of VN tuning as a healing apparatus. To avoid confusion between the VN as a medical or biological object, for the purpose of the present analysis, the #vagusnerve refers to the VN presented in my Instagram data. Hashtag-generated content collects the discourse that feeds the discussion engaging outside digital platforms (Burgess and Baym 2020). My research focused on #vagusnerve because topics distributed by hashtags allow classification as well as the identification of specific online content (Loukianov et al. 2022). The #vagusnerve materials I selected provide textual explanations that were sometimes accompanied by video tutorials or graphic illustrations. I have focused on seven of the most popular influencers who explain the functions of the VN in their posts and suggest how the functions can be applied to therapy.

The materials consist of posts that I have collected since 2021. I selected 99 posts that captured the central meaning that demonstrates how scientific language is utilised in the casual discourse of self-help that departs from the medical context. To obtain a similar experience as any self-help enthusiast following the hashtag, I collected the data from my

account. I extracted quotations that pinpointed the VN as a powerful organ for well-being management, and became interested in the biosocial aspects of the narrative. Influencers who market their online courses or workshops do not produce sensitive or personal data but manifestly make their material to inform the public about self-help tips as a teaser for larger workshops. A factor in choosing the representativity of the posts was their popularity measured by the amount of likes – all posts by the time I saved them were up to 1000 likes or more. Most of the posts were from accounts based in the United States and Europe.

My main focus was on the content co-produced by influencers and scientists. The hashtag led me to one of the most important sources that provide facts and theorisation for the #vagusnerve. Therefore, my data include sources such as blogposts, online lectures, and research articles from American psychologist and a neuroscientist, Stephen Porges, who presents the Polyvagal Theory (PVT) to wide audiences outside the scientific community. The PVT requires special attention here as a facilitator of clinical research, therapeutic application, terminology, and practices for VN activation. The baseline of the popular discourse in media platforms such as Instagram is often either sourced from the PVT directly or indirectly circulated in speech.

The narrative of PVT is taking space in therapy discourse that has an impact on audiences, who for various reasons become subjects of these therapies and thus also learn a new biosocial paradigm associated with PVT. The quotations that originated from psychoneuroscientific articles, neuroscience community blogs, or other online sources by the Polyvagal Institution founded by Dr Porges are analysed with Instagram materials without separating them according to their level of expertise because scientific knowledge is embedded in the discourses that are entangled with social norms and hierarchies (Jasanoff 2004). Thus, I look at the co-production of the #vagusnerve discourse. I eventually draw from the critical disability studies method for ‘scrutinising not bodily or mental impairments but

the social norms that define particular attributes as impairments, as well as the social conditions that concentrate stigmatised attributes in particular populations' (Schalk 2017).

Theoretical baseline

Neuroscientific findings of past decades have been interpreted in alignment with the hopes, expectations, and quests for new techniques to govern health. Simultaneously, brain sciences have been moving from genetic reductionism to neuro-reductionism, aligning with the ideas of choice, responsibility, and consciousness that are espoused by contemporary liberal societies. Instead of approaching neurological issues in terms of genetic heritage, the new neural approach to brain functions is the synaptic "rewiring" of the brain (Rose and Abi-Rached 2013.) In the case of my paper, the whole of the nervous system is the target of the neoliberalisation described above: even though the brain-focused neuro-hype has settled, the need for negotiation about the meaning of the neuroscientific facts continues, now also in the form of the relevant new societal impact embedded in the VN sciences.

Governing of bodies within self-help is typically diagnosed as biopower operating upon subjects. The biological life of humans is managed, producing subjects with greater health, and establishing various norms (Foucault 1976). The way well-being is constantly refashioned by life-sciences (Palsson 2013) has been interpreted as a form of biopower that establishes norms for society (Foucault 1976). The previous feminist studies, for instance, that analyses how a disciplined body is created discursively, are often aligned with notions of biopower (Birke 2000). My inquiries into vagus nerve aligns with the question by feminist biologist and STS scholar Lynda Brike: 'what are the political consequences of particular understandings of bodily functions?' (87).

I further align my approach with discussions on biosociality, as 'apolitical sociality formed by groups of private interests that are no longer organized according to grouping

criteria such as race, class, social status or political orientation, as was the case in the 19th-century biopolitics analyzed by Michel Foucault. Biosocial groups are rather structured according to criteria of health, bodily performances, specific illnesses or longevity' (Ortega and Vidal 2007: 257). The biosocial implications, or rather the embeddedness of neuroscience in the social fabric (Ortega and Vidal 2007), is discussed in the VN activation context of my analysis in two ways: a) how bodies are orienting themselves in neurosystemic terms by #vagusnerve, and b) how neuroscientific knowledge reinforces normalising and ableist discourse for sociality. The latter part of my materials directed me to identify biological conceptualisations for social behaviour through the way neurosystemic embodiment is framed, and delivered my analysis towards the objective of crip theorists who dismantle the dominant discourse concerning what is considered to be "normal". To recognise how self-care rhetoric is often toxic and ableist, it must be acknowledged how it is produced from privileged positions that ignore marginalised identities (Prisloe 2022). In its conclusion, this paper critically highlights damaging interventions that attempt to normalise individuals, producing neurotypical hegemony (Bertilsdotter Rosqvist et al. 2020).

As my materials are partly self-help literature sourced from Instagram, it is worth noting that an eagerness to offer new ways to manage health and create hype means that the self-help discourse easily slips into the grey area of neuroscience. It has been demonstrated how self-help applications translate into overinterpreted forms because value is being placed on fostering commercial research, efficiency, outcomes, profitable patents, and so on (Choudhury and Slaby 2012: 41). Research has been conducted to demonstrate how self-care is presented as an individual responsibility (for instance, see Prisloe 2022), governing the self benefits neoliberal societies (Rimke 2020), and the discursive space of the social media platforms circulated by hashtags are favourable for corporate interests (Loukianov et al. 2022). The simplifications in the different stages of the neuroscientific knowledge production

are not in the scope of this paper. Instead I focus on one aspect of simplification carried along the neuroscientific story of PVT and #vagusnerve. My materials directed me to neuronorms particularly. Being aware of the self-responsibility inherent in self-help, I operationalise the critique towards normative conceptualisations of the bodies associated with well-being management.

Having a feminist new materialist ontological basis for perceiving embodiment as processual, relational, in becoming with science, I draw from Elisabeth Wilson who builds a relationship with neurosciences that is 'moving between the central and peripheral nervous system and among the cognitive, the affective, and the unknowing, in an attempt to build a critically empathetic alliance with neurology' (2004: 29). I look at how practices for nervous system management produce novel conceptualisations of bodies and their social relations. In my approach to PVT and #vagusnerve I refer to STS understandings of knowledge as co-produced by scientific, technical, and social realms (Jasanoff 2004). The circulation of knowledge is a mutually constituted social and scientific co-enactment that produces not only science but bodies, identities, and subjectivities (Barad 2007).

Vagus nerve: from scientific sources to popular media

In scientific terms, VN signalling is the complex bidirectional, neurochemical messaging between visceral organs and the CNS to provide a sense of the body's physiological condition. VN is one of the key players in the interoceptive feedback loop that refers to the internal ability of an organism to track what is occurring and adapt accordingly to maintain homeostasis (Fulling et al. 2019). The VN is studied in the different disciplines of neurosciences, from neurology to immunology, producing medical and anatomical understandings derived primarily from animal models. Neuropsychiatry collects data by different brain imaging technologies. I began the analysis from what I consider the premise

for the main source of knowledge production for the popular discourse on #vagusnerve. The discourse that attempts to shape bodies is widely formulated by Dr Porges. The dysfunctional vagus nerve is proposed to play a significant role in mediating diseases such as depression, inflammation, metabolic syndrome, and heart disease. As claimed by the Polyvagal Institute, healing from trauma and many inflammatory diseases can be managed by methods that activate the VN (Porges et al. 2013).

Porges, who discovered the link between the heart rate variability (HRV) and vagus nerve, has published research from 1969 onwards, speculating on the neurophysiological relations between the HRV and frequency of breathing, such as respiratory sinus arrhythmia (RSA). These mechanisms are also proposed to indicate VN activity that enables social engagement (Porges 2022). Sourcing from these same findings, 'many studies interpret their data to conform with a preferred hypothesis of autonomic dysfunction as a trait of autism, related to the polyvagal theory, but the HRV evidence is to the contrary' (Barbier et al. 2022). This should be kept in mind in assessing PVT discourse and I return to the ableist implications of the discourse later on. The assumptions on the relations between the vagus nerve, cardiac vagal tone, RSA, and prosocial behaviour are more complex than the PVT suggests and has been widely disputed most visibly by Dr Paul Grossman (2023) but has not yet been discussed by social scientists. The controversial interpretations of the clinical findings by PVT are beyond the scope of the present analysis. Still, I touch on them here as they have nonetheless paved the way for therapists and psychologists to incorporate various methods into their toolboxes. While these forms of therapy are welcomed with enthusiasm and offer needed tools for nervous system management, I will discuss their societal biosocial implications in the following sections.

Polyvagal Theory and the Hierarchy of the Nervous System

Depending on several disciplines, research methods, and literature, Porges has introduced an architecture of three branches of the nervous system, which departs from the traditional binary branches of the parasympathetic and sympathetic nervous system (Porges 2021). PVT suggests that the three states are: 1) Dorsal Vagal Complex; 2) the Sympathetic Nervous System; and 3) the Ventral Vagal Complex, developed in evolutionarily linear order. Porges promotes what he calls a "social engagement system" being the evolutionarily newest branch of the VN, the "smart vagus". Humans are calm in a normatively neuro-social state but connected by this Ventral Vagal complex which can interrupt calmness. The other two modes constitute responses to acting accordingly or overreacting to danger, depending on how the NS is trained to respond. Porges argues for a hierarchical response to stimuli because enhanced social mammals with a sometimes called "smart vagus" are able to "co-regulate" with one another. According to the PVT, the nervous system is also adapted and built hierarchically through evolution making primitive vertebrates, amphibians, and reptiles, which freeze when threatened to have only the primary survival strategy (Beauchaine et al. 2007). He proposes 'that the vagus of mammals has been "repurposed" to enable sociality' (Grossman 2023). If the ventral vagal branch is not available in the case of a threat, the nervous system will activate sympathetic flight or fight response, or as a last option, collapse to the dorsal vagal branch which is the primitive adaptation to stressors (Porges 2023).

Translated into the lay language the phenomenon is discussed like this: 'If we feel safety, the social engagement state is present meaning we can be present, and we can use relationships to regulate, connect and feel safe' (@influensser2). According to #vagusnerve influencers, the dorsal state will occur 'If our nervous system perceives life threat, the body will move into immobilization or collapse-part of the freeze response', or if there is a sense of danger but the body is 'mobilized and ready to act' (@influensser2). In the latter, the body has activated the Sympathetic Nervous System. The ventral vagal state is the ideal mode of

the nervous system per PVT, but only social mammals have developed this branch. Reconfiguring health and its management has a broad impact on social life (Palsson 2013). The objective of this paper is to investigate the narrative that circulates between PVT and #vagusnerve, which embeds the social within the biological in their co-enactment. However, in its eagerness to offer explanations to evolution, emotions, and sociality without integrating social scientific aspects into the theory, the PVT might simplify all of these domains.

Theories such as those acclaimed in PVT renew the evolutionarily hierarchical structure of the nervous system that have been the concern of feminist authors (Wilson 2004). However, the work of Wilson with neuroscience shows how neuroscientists could be useful for feminism. Instead of renewing neodarwinian readings that obscure evolutionary arguments about conventional hierarchical structure of the nervous system, theories such as Maclean's triune brain[1] 'promotes a complex set of relations among three neural formation' (Wilson 2004: 86). This means for instance, that the triune brain does not have primitive and therefore less evolved parts, and new and therefore enhanced and better regions, but different brain formations overlap in cognitive and emotional processes in continuum. The idea of a series of interfacing systems in the brain 'begins to override any conventional fondness for strict demarcation of organisms, organs, and psychologies' (94). Leading towards the neurodivergent topic of the paper, the ventral superiority, or what PVT associates as chronic vagal withdrawal in children with autism spectrum disorders (Barbier 2022) is an example of demarcation that values nervous system modes over others.

Neuroplasticity as a foundation for self-help

[1] Triune brain model divides forebrain into three formations: reptilian, paleomammalian, and neomammalian, but 'MacLean displaces the classical reductionist expectation that parts of the brain are older, in evolutionary terms, govern behaviors that are rudimentary' (Wilson 2004: 85).

In the previous section I discussed how PVT posits an evolutionary capability for smart and enhanced vagus to traditionally hierarchical structures. To offer a background for understanding "smart" and enhanced vagus nerve and co-regulation in the wider context, I demonstrate how the vagus nerve becomes a site of neuroplasticity. Neuroplasticity is a bridge concept that formulates new relationships between the different branches of neurosciences (Rose and Abi-Rached 2013, Malabou 2004/2009). Neuroplasticity has also been operationalised to settle the cold war between psychoanalysis and neurology, where there is no longer a need to debate whether or not biology reduces the mind to a brain function (Malabou 2004/2009: 15). The aspiration on finding neuronal explanations for each aspect of mental and physiological deviance in terms of synaptic phenomena (Rose and Abi-Rached 2013: 94) is also thoroughly rooted in PVT and #vagusnerve discourse. Instead of producing neuroreductionism such as above, the personal growth that targets brain plasticity offers a novel approach to governance and self-help. The task of caring for our biology occurs in a neural form (Rose and Abi-Rached 2013: 23.)

The concepts mentioned in my materials such as "rewiring" and "retraining" portray neuroplasticity with the possibilities of governance. Resting explicitly on the neuroplastic principle, as exclaimed in the blog post by Polyvagal Institute, this type of management would then enable a body to regulate itself, leading to improved mood, behaviour, sociality, and immunity (Polyvagal Institute). VN-related self-help creates a new type of reservoir for neuroplasticity because the target of the management is not solely the brain. #vagusnerve discourse relocates the plasticity and malleability into the entire nervous system, and from there to the social aspects of life.

My materials also point to what Nikolas Rose and Joelle Abi-Rached (2013) understand as the objective of different neuro-disciplines in explaining heterogeneous problems of life as an "all in the brain" paradigm. Nevertheless, the idea of flexibility does

not differ substantially from the metaphor that treats the brain as a command centre. What is different in the current malleable and flexible brain paradigm is the stronger demand for responsibility for self-management (Malabou 2004/2009, Choudhury and Slaby 2012, Rose and Abi-Rached 2013). The commercial outcomes produce a common trait in the toxic self-care environment where subjects are assumed to be able to have control over their conditions. Although self-care assumes able-bodiedness and able-mindedness of the subjects in privileged position (Prisloe 2022), another aspect of self-help, such as the VN tuning, can nonetheless help individuals to cope with stressors.

The Moving Bodies Regulating the Vagus Nerve

Following from the previous section, I will now discuss the ways in which neuroplasticity is practiced in VN-related self-help. The subjects prone to self-help most likely do not want to perceive their practices as a biopower that works upon them. To disrupt the responsibility of governing health, an influencer observed that regulation echoes control and might not be suitable for gentle self-care: 'They lied, the goal was never to regulate your nervous system … it was to heal your trauma' (@influnesser6). By gently stroking herself, the influencer suggested that the rather cold physiological-mechanistic discourse should be embodied by harmonious healing exercises. Instead of considering this practice as disciplining the body, self-help technique providers and practitioners themselves envision their regulation practice rather as #selflove.

The term regulation, however, occurs in 40% of the selected #vagusnerve documents. Tips for balancing the dysfunctional VN are feasible, somatic exercises, and easy to practise when scrolling Instagram. Exercises such as forward bends, rotations as well as shaking and jumping are purported to activate the VN. Ultimately, one cannot envision any type of movement that had not been promoted as a solution. These applications are co-produced by

body therapists, the most influential of them being Stanley Rosenberg with his book titled, *Accessing the Healing Power of the Vagus Nerve: Self-Help Exercises for Anxiety, Depression, Trauma, and Autism* (2017).

Instagram materials derived largely from the PVT in the contemporary self-help arena are literally moving bodies. As Barad (2007) reminds us of Foucaultian theory, discourses gain their power not only from language but practices and techniques of governance. Most of the #vagusnerve Instagram posts were educational in the sense they explained the functions of the VN, but invitation to move was always there. Configured as a stress manager, the activation of the VN established immediate physical and mental conditions. The VN was communicated through ailments that the dysfunction of the VN causes, and even more often by listing the '5 techniques to increase vagal tone' (@influnesser5), or by suggesting even up to '24 vagus nerve hacks' (@influensser4). Lists on the characteristics of NS dysregulation emphasised the importance of the VN, framing it as a tool of health management over other organs. The statements within my materials all claimed that many mental and physiological dysfunctions are a result of a poorly developed NS and the VN has the 'key role in regulating stress response' (@influnesser5).

New concepts originating from PVT change the perception of what a body can do to manage itself and to return to the Ventral vagal complex. Terms such as 'vagal brake' or 'vagal tone' reflect a practical narration for the VN, one that is easy to incorporate into everyday life by 'tuning' or 'toning' it. Almost a third of my Instagram materials contained some reference to the PVT, predominantly in the form of a hashtag #polyvagaltheory. As one of the VN influencers explains: 'The vagal break is what leads to having a flexible and resilient nervous system and the good news is it's something you can strengthen when you use practices that re-tune the nervous system' (@influensser3).

The exercises are highly Instagrammable. The VN hacks within the #vagusnerve were summarised in short textual descriptions of VN hacks, occasionally accompanied by videos or images of mostly women hugging, stretching, breathing, swinging, or stroking themselves gently. Not surprisingly, a third of my IG materials were commercial; the techniques used to activate the VN were commonly taught in a workshop or through marketing a book. #vagusnerve content packages VN tuning in scientific-sounding evidence without usually referencing the literature, which makes it difficult to determine whether the hack is based on sufficient amounts of scientific data. Resembling any self-help, the intent is to 'establish authority and expertise by drawing upon prestigious discourses such as science, and medical or technological-sounding terminologies that function to present claims and products as objective, reliable, and trustworthy' (Rimke 2020). The neuroplastic self-help tips do not stop in the somatic practices. I will show how the neurodiscourse extends to the societal sphere.

Co-regulation: Sociality in the #vagusnerve

In this section, I examine the implications of applying neuroplastic governance to sociality as understood in PVT. Here the VN stops being a purely biological organ and engenders particular kinds of social relations. PVT is accountable for distributing the information for the #vagusnerve which frames bodies and their health through regulating but also co-regulating the VN. As this post explains: 'Also worth noting that stimulating your vagus nerve is one of the most powerful ways to increase feelings of social connection, which can help reduce stress and anxiety' (@influnesser5). Yet another new scientific term, 'neuroception', explains a nervous systemic function that fosters sociality as a risk detection of safety. To support adaptive behaviours, the temporal cortex reflexively interprets elements, such as voices, faces, gestures, and hand movements. As explained by Porges, this process facilitates ostensibly positive inter-personal relations: 'Thus, the neuroception of familiar individuals

and individuals with appropriately prosodic voices and warm, expressive faces frequently translates into a positive social interaction, promoting a sense of safety' (Porges 2021).

The novel foundation of the PVT to produce biosocial explanations creates a leap from regulation to co-regulation that targets sociality: 'We do this by moving up the body via the polyvagal zones, helping to mobilize into the social engagement system. (ventral vagal state of regulation + connection)' (@influnesser6). This means that one's health management is no longer the only objective because sociality is embedded strongly in the functions of the nervous system. As Porges explains, the 'biological imperative of Polyvagal theory is reciprocity, co-regulation, and connectivity' (Porges n.d.). When co-regulation is then explained by the Instagram user in colloquial language, sentences such as the following are often used: 'This is co-regulation, we can use our nervous systems to calm each other' (@influnesser7).

Porges formulates what he refers to as 'mammalian biobehavioural features' as an 'organizing principle to weave a descriptive narrative of the vertebrate phylogenetic journey towards sociality and co-regulation … to support health and sociality' (Porges 2023). In a post from Polyvagal Institute they mimic this scientific discourse by saying, 'Engaging in positive social interactions with others, such as talking with friends or participating in group activities, can activate the ventral vagus nerve and promote a sense of safety and trust' (Polyvagal Institute). The social engagement system offers convenient principles for self-help and societal issues as confirmed in the following post: 'I believe that nervous system awareness and co-regulation can truly change our society. Many of us didn't experience attuned adults who taught us to self-regulate. And that's ok because we can practice and learn as adults' (@influnesser7). The core beliefs in the #vagusnerve discourse is the hope that the malleability and flexibility of the NS enact change in society.

The “social” is potentially an explanatory resource within neuroscience embedding prejudices concerning its meaning and purpose especially when entering to self-help literature. The limitations in neuroscientific translation are what underlie criticism of simplification and reduction by social scientists. (Choudhury and Slaby 2012.) The interpretation of clinical facts in the PVT and the #vagusnerve embed promises of correct social engagement as a cure for the nervous system, and imply solutions for larger societal issues.

PVT offers an explanation of social behaviour connected to neuroscience but it is important to state that an interdisciplinary field of social neuroscience was created around 1990 exactly for this purpose: to explain how neurochemical events influence social events and vice versa (Rose and Abi-Rached 2013: 151–152). The objective of social neuroscience is to expand the neurobiological toward the social and cultural, and the aim is the contrary of neuroreduction (Rose and Abi-Rached 2013: 163). This devotion to incorporate social in the theory of the neurobiological is particularly explicit in PVT, as Porges has contributed to editions by John Cacioppo, the founding member of social neuroscience providing insights on principles of psychophysiology (Cacioppo and Tassinary 1990). VN regulation implements neurobiological mechanisms for sociality by aligning with the premises of social neuroscience that explain brain evolution in terms of sociality and culture (Rose and Abi-Rached 2013: 152).

Furthermore, the basis for the evolutionary foundation of the PVT is the grand idea of the development of neuroanatomical structures and neurophysiological processes. As Porges (2021) observes, ‘A polyvagal perspective clarifies the evolutionary transition that enables mammals to be social and to use sociality as a mechanism to regulate and optimize physiological state and homeostatic processes’. In his video tutorial in Polyvagal Institute, Porges states that humans are the enhanced version of asocial reptiles that progress to social

mammals (module 1: Origin of the Polyvagal Theory). The claims by Porges, ranging from the structure of the NS, and dichotomies between asocial reptiles and social mammals presented in the PVT, are contested by many in the scientific community (Grossman 2023). Porges has written a peer-reviewed paper published in Comprehensive Psychoneuroendocrinology to explain his theory by taking into account all the criticism of the theory (Porges 2023). The claims such as those above pathologise social gestures, outlining what is deemed asocial and deviant behaviour. In this manner, being dysregulated is equivalent to being asocial. The management of health is aligned to neuronal governability that can be achieved by behaving in certain social ways.

Arriving at the final point of the discussion regarding co-regulation, I argue that the self-help distributed within the #vagusnerve reinforces neuronormative standards that value neurotypical features. Research papers that lay the foundations for PVT and its self-help 'assume that for many children with social communication deficits, including those diagnosed with autism, the social engagement system is neuroanatomically and neurophysiologically intact' (Porges 2004). Porges has produced an ambitious hypothesis that claims: 'Faulty neuroception might lie at the root of several psychiatric disorders, including autism, schizophrenia, anxiety disorders, depression, and Reactive Attachment Disorder' (Porges 2004). Communicated by the words of an Instagrammer who leans on PVT: 'With a dysregulated nervous system, our neuroception is "off" or faulty' (@influnesser7). The PVT that leaks into therapeutic discourse frames autistic behaviours as indicative of a neurological or cognitive disorder, a depiction that is criticised by many crip theorists (for instance, see Belek 2023).

#vagusnerve: Reinforcing a Neuronorm

Building a theory that links NS to normative notions of sociality as an evolutionary benefit has problematic and ableist logics, which I will discuss in the next section as neuronorms. The PVT indisputably provides tools for managing well-being that are supported by research. It simultaneously reinforces the medical model of disabilities that according to neurodiversity scholars treats cognitive disabilities as objectively bad (Chapman 2022: 57). Although pathologising definitions of ADHD/autism in neuroscience are profound, the neuroscience may also clear social stigma by offering physical explanations for the condition. Neurodiscourses shape the neurodiversity movement for instance by affording justifications for different ways of being in the world. They can also 'de-stigmatize mental illnesses by graphically confirming that they are conditions of the brain' (Ortega and Vidal 2007: 257). Taking versatile traits from neurodiscourse, autistic self-advocates largely oppose a search for a cure for autism. What is relevant for my analysis is that the aforementioned 'all in the brain' paradigm coincides with 'cerebral subjectivity' where self-understanding of ADHD/autistic individuals is contextualised with neuroscience (Ortega 2009). To tie this in to my analysis, the cerebral subjectivity within PVT suggests dividing people into deviant and normal ones. For a group that identifies strongly with the available neuroscientific discourses, a narrative of the PVT might be of interest but also of concern. I will demonstrate how concepts such as co-regulation produce biosocial implications that favour neurotypical behaviour.

I draw from the argumentation of crip theory in this final analysis searching for alternatives to the normal-pathological dichotomy found in PVT. By measuring external behaviours, individuals are considered to be deviants when their intellectual or emotional traits do not meet the assumed normal social functioning (for example, see Bertilsdotter Rosqvist 2020: 1–4) such as the ones that PVT suggests. According to the PVT, in the ventral state, an individual's behaviour meets the criterion of prosocial safe and calm expression

whereas the poorly trained nervous system response is referred to as neurofaulty (Porges n.d.). Through the discourses circulated in the materials, biological essentialism and reductions still continue to produce a difference between autistic people and the neurotypical majority (Ortega 2009). As explained by Erin Manning and Brian Massumi: 'The neuro is inherently a therapeutic concept contrived with and for the pathological – which is to say that it is guided by an a priori commitment to a presupposed, quantifiable, base-state distinction between the normal and the pathological' (2014). As critical neurodiversity scholar Bertilsdotter Rosqvist states: 'Neurodiversity perspectives do not exclude the use of all interventions, only those that seek to normalise an individual in a damaging and futile attempt to produce a person closer to a neurotypical ideal type' (Bertilsdotter Rosqvist et al. 2020: 7). Ortega (2009) describes a 'biosocial field of autism' as a complex landscape of negotiations about the nature and meaning of autism where varying perspectives of medical definitions and potential cures meet with the autistic self-advocacy that most often embraces neurodiversity and posits against the search for a cure.

Generating terms such as 'neurofaulty' that substantiates neurotypical behaviour as favourable, the PVT and #vagusnerve content evaluate the social experience and behaviour located in the nervous system, thereby pathologising autism and valorising the neuronormative behaviour promoted in the materials. As critical neurodiversity scholars describe, pathologisation arises from societal pressures to be normal (Bovell 2022) leading to ableism that 'determines who is disabled, and therefore who is less worthy' (Prisloe 2022). The normalised abilities of cognition as linked to particular kinds of emotional and social behaviour can be viewed as *neurotypical* ability grounded in *neuronormativity* – if not neuro-ableism (Huig 2020).

I wish to maintain multiple perspectives towards the neurodiscourse within PVT in a hope to see how it could develop if it would incorporate a critically empathetic negotiation by

new materialist feminist and STS understanding to its premises. The PVT could represent an important step in bridging the gap between artificially separated domains of social and biological if it would account for the social context and embodied experiences in their complexities, diversities, and nuances. As concern towards PVT addressed from the autistic community is articulated in a blog post by Trauma Geek: is there any room for neurodivergency when the theory might foster ventral supremacy of neurotypical individuals? (Trauma Geek 2023).

The VN hacks such as shaking, humming, and jumping resemble the self-stimulatory behaviour considered a tool for emotional self-regulation and adopted by those who are on the autism spectrum. However, when the #vagusnerve practices move from embodied practices towards co-regulation, the discourse changes in favour of certain social expressions and makes a move towards ableism. Considering for instance the difficulty of eye contact or other of the facial expressions promoted by PVT, the encouragement for co-regulation might cause more demand for masking.

Conclusions

The primary objective of this analysis was to examine the VN as an example of how bodies are shaped within popular self-help discourse. I followed the VN content distributed by #vagusnerve on Instagram combining a feminist, new materialist STS with perspectives from the critical neurodiversity literature. I analysed the neurodiscourse within the PVT and #vagusnerve by identifying the most important themes that answer my research question: what are the implications of neuroplastic governance in the context of VN management focusing on the biosocial field PVT and #vagusnerve. The materials assembled to address this question led me to study polyvagal theory (PVT) that informs VN-related self-help. Bodies become manageable similar to the overall trend in the neuroscientific understanding

of neuroplasticity that promotes self-responsibility. The obligation to improve ourselves with VN hacks is the latest form of neuroplastic self-management in line with the other orientations of self optimisation. Subjects are drawn to self-help to improve themselves, to recover from trauma, and to relieve stress by becoming aware of their nervous systems.

PVT offers a biosocial vision to account for how the mind connects to the brain and how bodies connect to other bodies through their neuronal organisation creating a biological discourse that shapes social bodies. In the theme of co-regulation, social expressions are a form of activating the VN, thus rendering sociality a target of management. The PVT presents robust claims and promises of overcoming mental and physical issues and offers a health-beneficial understanding of sociality. Overinterpretation of facts embeds normative values that are circulated within the neurodiscourse. Reducing the social aspects in life to neuronal circuits serves the discipline of neuroscience at the expense of complexity and (neuro)diversity. In this vein, this paper reaches the conclusion that even the embodied exercises, that certainly work for calming the nervous system, form part of the overinterpretation of scientific facts in the co-regulation PVT and #vagusnerve is fuelling normative conceptualisations on sociality.

Neuroplasticity, regulation, and co-regulation all suggest that we are highly neurologically manageable social beings. #vagusnerve self-help moves bodies, rendering them self-improving, neuronormative subjectivities for liberal societies. The question remains as to how co-regulation would be conceptualised by those who do not experience sociality as described by PVT but might nonetheless benefit from shaking, swinging, and stretching their bodies. To Audre Lorde (1988), self-care serves a community based objective of healing. Co-regulation interpreted in this context could be aimed at detaching from neoliberalisation. Further research could draw from Lorde to examine racial, classed, and gendered components of the neurodiscourses such as PVT.

References

Barad, Karen (2007), *Meeting the Universe Halfway*, Duke University Press.

Barbier, Ashley, Ji-Hong Chen,and Jan D. Huizinga. (2022). 'Autism Spectrum Disorder in Children Is Not Associated With Abnormal Autonomic Nervous System Function: Hypothesis and Theory.' *Frontiers in psychiatry*, *13*, 830234. https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2022.830234/full [19 August 2025]

Beauchaine, Theodore, Lisa Gatzke-Kopp, Hilary K. Mead. (2007), 'Polyvagal Theory and developmental psychopathology: emotion dysregulation and conduct problems from preschool to adolescence', Biol Psychol, vol. 74, no. 2, pp.174–84. doi: https://doi.org/10.1016/j.biopsycho.2005.08.008 [19 August 2025]

Belek, Ben. (2023), "'A Smaller Mask': Freedom and Authenticity in Autistic Space,' *Culture, Medicine and Psychiatry*, vol. 47, no. 3, pp. 626–646. https://link.springer.com/article/10.1007/s11013-022-09794-1 [19 August 2025]

Bertilsdotter Rosqvist, Hanna, Nick Chown, and Anna Stenning (ed) (2020), *Neurodiversity studies. A New Critical Paradigm*, London: Routledge.

Birke, Lynda. (2000), *Feminisms and the Biological Body,* New Brunswick, NJ: Rutgers University Press.

Bovell, Virginia. (2020), 'Is There an Ethical Case for the Prevention and/or Cure of Autism?' in H. Bertilsdotter Rosqvist, N. Chown and A. Stenning (eds), *Neurodiversity studies. A New Critical Paradigm*, London: Routledge, pp. 39–54.

Breit, Sigrit, Aleksandra Kupferberg, Gerhard Rogler, and Gregor Hasler. (2018), 'Vagus Nerve as Modulator of the Brain-Gut Axis', *Psychiatric and Inflammatory Disorders. Frontiers in psychiatry*, vol. 9. https://doi.org/10.3389/fpsyt.2018.00044 [19 August 2025]

Burgess, Jean, and Nancy Baym. (2020), *Twitter: a biography*, New York: New York University Press. doi: 10.18574/nyu/9781479841806.001.0001 [19 August 2025]

Cacioppo, John T, and Louise G Tassinary. (1990). Inferring psychological significance from physiological signals. *The American psychologist*, *45*(1), 16–28. https://doi.org/10.1037//0003-066x.45.1.16 [19 August 2025]

Chapman Robert. (2020) Neurodiversity, disability, wellbeing. In: Bertilsdotter H, Chown N, Stenning A (eds) Neurodiversity studies. A new critical paradigm. Routledge, London, pp 57–72.

Choudhury, Suparna and Jan Slaby. (ed) (2012), *Critical Neuroscience: A Handbook of the Social and Cultural Contexts of Neuroscience*, Wiley and Blackwell.

Foucault, Michael. (1976), *The History of Sexuality (The Will to Knowledge)*, Penguin Books.

Fulling, Christine, Timothy Dinan, John Cryan. (2019), 'Gut Microbe to Brain Signalling: What Happens in Vagus…' *Neuron* vol. 101,6 (2019): 998-1002. doi: 10.1016/j.neuron.2019.02.008 [19 August 2025]

Grossman, Paul. (2023), 'Fundamental challenges and likely refutations of the five basic premises of the polyvagal theory', Biological Psychology, Volume 180

Huig, Dieuwertje Dyi (2020), 'Neuronormativity in Theorising Agency: An argument for a Critical Neurodiversity Approach' in H. Bertilsdotter Rosqvist, N. Chown and A. Stenning (eds), *Neurodiversity studies. A New Critical Paradigm*, London: Routledge, pp. 213–217.

Jasanoff, Sheila. (2004), *States of Knowledge. The Co-production of Science and Social Order*, International Library of Sociology.

Lorde, Audre. (1988), *A burst of Light*, UK Books.

Loukianov, Anastasia, Kate Burningham, and Tim Jackson. (2022), 'The patterning of the discursive space in search for the #goodlife: A network analysis of the co-occurrence of Instagram hashtags', *The Information Society*, vol. 39, no. 1, pp. 62–78. https://doi.org/10.1080/01972243.2022.2125604 [19 August 2025]

Malabou, Catherine. (2009), *What Should We Do With Our Brain?* New York: Fordham University Press. (Original work published 2004, trans. Sebastian Rand)

Manning, Erin and Brian Massumi. (2014), *Thought in The Act*, University of Minnesota Press.
Sullivan, Nikki and Samantha Murray (2011), 'Editorial', *Somatechnics*, vol. 1, no. 1, pp. v–vii. 10.3366/soma.2011.0018.

Ortega Francisco. (2009), 'The Cerebral Subject and the Challenge of Neurodiversity', *BioSocieties,* vol. 4, no. 4, pp. 425–445. doi: 10.1017/S1745855209990287. [19 August 2025]

Ortega, Francisco, and Fernando Vidal. (2007), 'Mapping the cerebral subject in contemporary culture', *RECIIS, Revista Electrônica de Comunicação, Informação & Inovação Em Saúde*, vol. 1, no. 2, pp. 255–259.

Palsson, Gisli. (2013), 'Ensembles of biosocial relations' in T. Ingold and G. Palsson (eds), *Biosocial Becomings: Integrating Social and Biological Anthropology*, Cambridge University Press, pp. 22–41.

Palsson, Gisli, and Tim Ingold (eds) (2013), *Biosocial Becomings: Integrating Social and Biological Anthropology*, Cambridge University Press

Pavlov, Valentin, and Kevin. J. Tracey (2012), 'The vagus nerve and the inflammatory reflex--linking immunity and metabolism', *Nature reviews. Endocrinology*, vol. 8, no. 12, pp. 743–754. https://doi.org/10.1038/nrendo.2012.189 [19 August 2025]

Porges, Stephen W. (2004), ‘Neuroception: A subconscious system for detecting threat and safety.’ Zero to Three: Bulletin of the National Center for Clinical Infant Programs 24:5,19-24.

Porges, Stephen, Matthew Macellaio, Shannon Stanfill, Kimberly McCue, Gregory Lewis, Emily Harden, Mika Handelman, John Denver, Olga Bazhenova, and Keri Heilman (2013), ‘Respiratory sinus arrhythmia and auditory processing in autism: Modifiable deficits of an integrated social engagement system?’, International Journal of Psychophysiology 88: 261-270. doi: 10.1016/j.ijpsycho.2012.11.009 [19 August 2025]

Porges, Stephen W. (2021), 'Polyvagal Theory: A biobehavioral journey to sociality’, Comprehensive Psychoneuroendocrinology, 100069. doi: https://doi.org/10.1016/j.cpnec.2021.100069 [19 August 2025]

Porges, Stephen W. (2022), ‘Heart Rate Variability: A Personal Journey.’ *Applied psychophysiology and biofeedback* vol. 47,4 : 259-271. doi: 10.1007/s10484-022-09559-x [19 August 2025]

Porges, Stephen W. (2023), ‘The vagal paradox: A polyvagal solution.’ *Comprehensive psychoneuroendocrinology*vol. 16 100200. 9 Aug. 2023, doi: 10.1016/j.cpnec.2023.100200 [19 August 2025]

Porges, Stephen. (n.d.), (video tutorial) Polyvagal theory: neural exercise for safety and connection.
module 1: Origin of the Polyvagal Theory, *Polyvagal Institute*, https://www.polyvagalinstitute.org/whatispolyvagaltheory

Prisloe, Dana K. (2022), ‘Toxic Rhetoric: Unpacking Discussions of Self-Care’, *The Vermont Connection,* vol. 43, no. 1.https://scholarworks.uvm.edu/tvc/vol43/iss1/20/ [19 August 2025]

Rimke, Heidi. (2020), *Self-help, therapeutic industries, and neoliberalism*, Routledge.

Rose, Nikolas and Joelle Abi-Rached. (2013), *Neuro: The New Brain Sciences and the Management of the Mind*, Princeton University Press.

Rosenberg, Stanley. (2017), *Accessing the Healing Power of the Vagus Nerve: Self-Help Exercises for Anxiety, Depression, Trauma, and Autism*, Berkeley: North Atlantic Books.

Schalk, Sami. (2017) Critical Disability Studies as Methodology.” Cultural Studies Association. Laterality vol. 6 : n.1

Trauma Geek (2023), ‘A Neurodiversity Paradigm Lens on Polyvagal Theory’, *Medium*, February 24. https://autietraumageek.medium.com/a-neurodiversity-paradigm-lens-on-polyvagal-theory-pvt-7f9495cffbd8 [19 August 2025]

Wilson, Elisabeth. (2004), *Psychosomatic: Feminism and the neurological body*, Durham: Duke University Press.

Wilson, Elisabeth. (2015), *Gut Feminism*, Duke University Press.

Notes

Wilson, Elisabeth. (2004), *Psychosomatic: Feminism and the neurological body*, Durham: Duke University Press.