



Essay

Exploring a Polyvagal Futures Literacy

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Abstract

Polyvagal Theory, developed by clinical psychiatrist Stephen Porges in the mid-1990s, offers a scientific theory for understanding the role of the autonomous nervous system in how we meet and respond to challenging images of future change. Drawing heavily on the work of Deb Dana—a licensed clinical social worker widely recognized for bringing PVT’s practices and principles to audiences outside the scientific community—and Debra Em Wilson and Sohail Inayatullah’s seminal work bringing PVT to futures studies, I propose that a polyvagal futures literacy offers foresight practitioners and learners a powerful framework for meeting the future with agency, hope, and inner resourcefulness in the face of its complexity.

Keywords

Polyvagal Theory, Somatic Futures, Futures Literacy, Embodiment, Personal Futures

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Introduction

Polyvagal Theory (PVT), developed by clinical psychiatrist Stephen Porges in the mid-1990s, offers a scientific theory for understanding the role of the autonomous nervous system in how we meet and respond to challenging images of future change. Drawing heavily on the work of Deb Dana—a licensed clinical social worker widely recognized for bringing PVT’s practices and principles to audiences outside the scientific community—and Debra Em Wilson and Sohail Inayatullah’s seminal work bringing PVT to futures studies, I propose that a polyvagal futures literacy offers foresight practitioners and learners a powerful framework for meeting the future with agency, hope, and inner resourcefulness in the face of its complexity.

A brief introduction to Polyvagal Theory

Polyvagal Theory has been described as “the science of safety” (Dana, 2018). A theory of the autonomic nervous system, it describes the central role of the vagus nerve—a long bundle of nerve fibers running from the brain through the body—in mediating how we sense, assess, and respond to perceived conditions of safety or unsafety. A two-way information conduit between the brain and the body, the vagus nerve is a central part of the autonomic nervous system (ANS), whose role is to “ensure we survive in moments of danger and thrive in times of safety.” (Dana, 2018, 17).

The autonomic nervous system is made up of the sympathetic and the parasympathetic nervous systems. The former triggers the release of stress hormones when we are faced with a stressor, priming our bodies for movement to protect ourselves—this state of readiness is commonly described as “fight or flight.” The latter system involves two states: the dorsal vagal and the ventral vagal. If the sympathetic response does not resolve the stressor, the dorsal vagal state is triggered in response to “cues of extreme danger... [it] takes us out of connection, out of awareness,

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and into a protective state of collapse” (Dana, 2018, 9). This is often described as a “freeze” response in popular language.

Both the sympathetic and dorsal vagal pathways are deep and old survival responses, adapted over millennia of evolution to handle risk and danger. The ventral vagal pathway, on the other hand, is relatively recent. Activated by signs of safety, it involves feeling safe, calm, connected, and social:

“In this state, our heart rate is regulated, our breath is full, we take in the faces of friends, and we can tune in to conversations and tune out distracting noises. We see the ‘big picture’ and connect to the world and the people in it” (Dana 2018, 10).

In the ventral vagal state, we are receptive and fully present in the moment. Adapted to facilitate social interaction and collaboration, the ventral vagal state involves feeling open to experience and being able to engage deeply with people and ideas alike. Though stressors and challenges remain present, we feel able to handle them with the resources available to us.

Together, the three states of the ANS form an “autonomic ladder” (Dana, 2018, 12). As stressors mount and resources for handling those stressors deplete, we descend from the calm of the ventral vagal down into the sympathetic, and later the dorsal vagal states—the latter two are considered states of “dysregulation.” Returning to the ventral vagal state requires going back up the ladder in reverse order. This happens as we gain resources for coping with stressors or the stress load is reduced, allowing our nervous systems to regulate themselves. It is also possible to “coregulate” other people out of a dysregulated state by embodying a ventral vagal state, inviting them to perform regulating activities such as rhythmic movement, or both (Wilson and Inayatullah, 2023).

The ANS constantly pays attention “not only to cues in the world around us but also to cues from within our bodies” as it tries to keep us safe, a process Porges termed “neuroception” (Dana, 2018, 36). Throughout the day, we shift between all three ANS states to varying degrees. Crucially, the process of neuroception—and often the shifting of our ANS—occurs both beneath and before conscious thought. As Dana puts it, “the mind narrates what the nervous system knows. Story follows state.” (2018, 6)

Why is Polyvagal Theory relevant to futures thinking?

Building on Dana’s and Porges’s work, Wilson & Inayatullah (2023) propose that the openness, receptivity, and felt safety of the ventral vagal state is crucial to our ability to “imagine, design, and build preferred futures.” In this state, challenges and provocations are met with curiosity rather than defensiveness. The ventral vagal state offers “the ability to acknowledge distress and explore options, to reach out for support and develop organized responses—all behaviors that facilitate one’s engagement with futures thinking (Dana, 2018, 12). Wilson and Inayatullah note that the ventral-vagal-dominant blended states of bliss (with dorsal vagal) and play (with sympathetic) are conducive for learning, creativity, and collaboration around futures thinking activities (2023).

In contrast, a dysregulated ANS makes engaging with alternative and preferred futures difficult, if not impossible. In the sympathetic state, we feel disconnected from others and focus on protecting our individual selves from threat, leaving little room for working together or seeing hopeful possibilities. Instead, we see the world as “dangerous, chaotic, and unfriendly,” resulting in feelings of anxiety, anger, or restlessness (Wilson and Inayatullah, 2023). Moving further down the ladder into the dorsal vagal state, we experience despair and hopelessness, withdrawing and collapsing into ourselves in isolation. The hopelessness and low energy of this state often leads to attitudes of apathy, defeatism, and cynicism in the face of the seemingly insurmountable.

Nowhere is this dynamic more apparent than in those who have experienced psychological trauma, which causes people to get “stuck” in dysregulated states (Hegarty 2020, Porges & Porges 2023). Contrary to popular perceptions of trauma as originating from severely adverse events themselves, contemporary understandings of trauma describe its phenomenology as a combination of an adverse event that generates stress beyond one’s ability to handle, one’s subjective response to that event, and the lasting presence of effects understood as traumatic in character (Porges & Porges 2023, Griffin 2020). Put simply, trauma has far more to do with what happens inside us—especially in our nervous systems—when we experience stressful events than the events themselves.

Recent research has expanded our collective understanding of what counts as trauma, viewing it as a spectrum

ranging from “Big T traumas,” such as natural disasters and violent assault, to “Small t traumas” such as bullying and emotional neglect (Maté 2022, Laub and Weiner 2013). Maté (2022), in particular, has argued for the ubiquity of trauma in seemingly “normal” aspects of modern society and culture, with wide-ranging yet insidious consequences on mental and physical health. Emerging feminist and social psychological theories of trauma (Thompson 2021, Burnett et al. 2018, Vides et al. 2022) further build on Galtung’s (1969) concept of structural violence to show how institutional and cultural structures in society reproduce trauma in predictable and ongoing ways. From this perspective, it is all but guaranteed that futures practitioners already face trauma dynamics and nervous system dysregulation in their work—perhaps far more often than some currently realize.

The current confluence of several existential crises, which some have named the “polycrisis” (Tooze 2022) is likely to exacerbate this. Already in 1970, Alvin Toffler’s *Future Shock* warned of the “shattering stress and disorientation” faced by people facing “too much change in too short a time” (4). He describes, with striking clarity, how individuals move through anxiety and agitation to “apathy and emotional withdrawal” when faced with overwhelming change (309). Writing in the first year of the COVID-19 pandemic, Bengtson (2020) contends that future shock has since deepened into “future estrangement,” a sense of “profound alienation toward the future” triggered by the accelerating pace and complexity of change. Anthony (2020b) too observes the pervasiveness of pessimism and misanthropy in dominant global narratives about the future, driven in part by the negativity bias encouraged in today’s social media.

In these commentaries, we see how overwhelming experiences of change can drag entire societies down the autonomic ladder, leaving little room for perceiving and engaging with more expansive futures. Instead, we tend to cling to “closed futures”—those that maintain a veneer of coherence and stability at the expense of greater future risk (Bussey 2014). Amid the looming shadow of climate change’s effects, the rise of artificial intelligence and the Fourth Industrial Revolution, a global pandemic, economic recession, and multiple geopolitical conflicts today, a practitioner’s understanding of Polyvagal Theory and its insights around nervous system regulation offers a potent way to combat what Riel Miller has called the global “poverty of imagination” in dreaming up better futures for ourselves (2018, 8).

A polyvagally informed futures literacy

It is important to acknowledge here that futures practices often risk triggering a sympathetic or dorsal vagal response in participants—sometimes intentionally. Archetypal approaches to scenario thinking, for instance, invoke imagined scenarios such as “Collapse” (Dator 2017) or “Worse” and “Weird” (Cascio 2010) futures. Bleecker et al. (2018) even state, in a guide to design fiction, that “the capacity to stop everyone in their tracks and perhaps even cause an ‘allergic reaction’” is an element of a good “what-if” scenario (159). Provocation plays a central and important role in these methodologies, though it risks creating experiences of ANS dysregulation in their participants.

In some sense, this is inevitable: some degree of provocation is par for the course in most approaches to futures thinking. Further, no futurist can know ahead of time how exactly a methodology might be received by a particular individual’s nervous system—nor should they be expected to. Nonetheless, it helps for us to be ready for this possibility as futures facilitators, not just by observing how our interventions land with our audiences in real-time but also by coregulating any dysregulated participants back into a ventral-vagal-dominant state (or inviting them to do it themselves). The more skill we have with this, the more likely our provocations are to encourage the reflexivity, creativity, and engagement that we hope to inspire.

One might wonder, therefore, where Polyvagal Theory might be relevant to the field of futures literacy. Horst and Gladwin (2022) expanded, interdisciplinary view of multiple futures literacies suggests several promising intersections, particularly those concerned with emotion and embodiment. Four of the five dimensions of futures consciousness identified by Ahvenharju et al. (2018)—namely, time perspective, agency beliefs, openness to alternatives, and concern for others—are likely to benefit from participants’ being in a ventral vagal state. Lombardo (2007, 2014, 2016), Lombardo & Cornish (2010) and Hong (2022) have written much about the crucial role emotions and emotional states play in our ability to understand the future and to create positive futures. Though Lombardo considers emotions such as hope, optimism, love, and courage to be virtues of character, these traits might emerge and recede depending on a participant’s ANS state. Indeed, Lombardo gestures toward this in his later

work, describing how the reciprocal relationship between mind and body means that biological states can influence our psychological states and vice versa (2016).

Several scholars have written about how attending to our physical senses and bodily signals in futures engagements might allowing participants to relate with alternative futures and one another at greater depth. In the field of futures education, Pouru-Mikkola & Wilenius allude to the role of the body in mediating transformative learning experiences around the future (2021). Where Anthony (2020a, 2020b) proposes using the power of embodied presence to transform one's engagement with the political future through greater self-awareness, Bussey (2014) suggests that sensory input may even bypass language and cognition, subtly shaping one's relationship to and identity within the future. These perspectives on somatic processes in futures thinking offer a valuable counterpoint to the rationalist and cognitive historically dominant in futures thinking, and the role of Polyvagal Theory in understanding and influencing these embodied processes bears further research.

A rudimentary polyvagal futures literacy framework

In this section, I suggest the beginnings of a polyvagal futures literacy framework—though it is not intended to be comprehensive or complete. After all, the range of both clinical and nonclinical approaches to working with the ANS is vast and evolving, and clinical indications are not always applicable or even desirable in a futures literacy context. Rather than making any claims from authority, this framework is meant to inspire critique and discussion on integrating PVT's insights into futures literacy, especially from within the scientific and medical communities.

Table 1. A polyvagal literacy framework

Direction	Sensing	Shifting	Structuring
Self	(A) Self-Awareness	(B) Self-Regulation	(C) Deepening
Others	(D) Observation	(E) Coregulation	(F) Design

(A) Self-Awareness

Noticing the state of one's own ANS can be challenging, especially when one is already in dysregulation. Nevertheless, it offers a crucial starting point for connecting with and "befriending [one's] nervous system" (Wilson and Inayatullah 2023). Dana (2023) offers several powerful exercises for developing this awareness, including creating a "Personal Profile Map" of how one's ANS states uniquely respond to felt safety or unsafety.

(B) Self-Regulation

Cultivating our own "ventral backpacks," which Wilson describes as a set of techniques that help shift one back into the ventral vagal state, offers us the ability to consciously move ourselves up the autonomic ladder (Wilson and Inayatullah 2023). Examples include focusing on "touchstones"—physical objects with personal meaning that we can associate with a ventral energy (Dana 2023), intentional breathing, and self-contact (Wilson and Inayatullah 2023).

(C) Deepening

Dana (2023) describes deepening as the incremental process of moving our ANS towards a ventral vagal state, making it more of a default past a tipping point. This involves integrating self-awareness and self-regulation into one's daily life until a bigger change occurs, giving deepening the quality of a personal practice.

(D) Observation

Observing and recognizing the shifts in someone else's ANS state is the first step in figuring out how one might helpfully engage in coregulation. Often, our own neuroception clues us in to this (Dana 2023, 40), though we may also consciously observe it in expressive or behavioral cues.

(E) Coregulation

Being in a ventral vagal state naturally invites others to move up the autonomic ladder as well, helping them to find nervous system resources for and in themselves (Wilson and Inayatullah 2023). More active forms of coregulation may include "sending signs of welcome" through one's facial expressions and voice (Dana 2023, 41), or inviting people to do self-regulating activities, collectively or on their own.

(F) Design

Environments that communicate signs of safety and invite connection can help people access and stay in a ventral

vagal state (Dana 2023). Alongside typical physical considerations such as minimizing disruptive visual and auditory stimuli, this may also involve creating safe psychological environments through a sensitivity to language and Diversity, Equity, and Inclusion dynamics.

These six processes are by no means definitive, nor do they occur in isolation; indeed, we can see or infer their interplay in some examples of futures facilitation in the literature. Writing about challenging environments for foresight work, Inayatullah (2018) shared how students at a futures workshop in the former Yugoslavia could only imagine a preferred future for Dubrovnik after exhaustively imagining the worst-case scenario. In his account, he was able to observe their hopelessness as a result of post-traumatic stress syndrome and successfully adapt the workshop in a coregulating direction. In Lichty and Kamunya's (2022) futures workshops with LGBTQI+ youth in Nairobi, Kenya, the holistic trauma healing program run by Break Margins Africa, which involved one-to-one counselling sessions where participants' life stories were heard, proved crucial in helping them feel empowered enough to engage in futures activities. In both examples, hearing someone's story and holding space for their trauma offers connection and safety in feeling seen and heard, bringing them towards a ventral vagal state.

Rufo (2022), a movement and theatre artist and scholar of sensory perception, illustrates a more active and explicit application of Polyvagal Theory's principles at an interactive lecture on imagining and feeling into catastrophic and preferred ecofutures. He invites the audience to close their eyes and notice their bodies' sensations mindfully, sense into their breath and their contact with the ground, and even to gently touch one another's hands while sharing about childhood memories of play, to help create a different felt relationship to the natural world. Participants were invited to engage in self-awareness and self-regulation of their nervous systems, observation and coregulation of fellow participants' nervous systems, in a safe and sensorially rich environment—even as they were asked to imagine an “apocalyptic” ecofuture at points. His methodology offers a glimpse into the power and possibilities of the ventral vagal state in futures thinking, as well as the range of somatic tools that polyvagal-informed futures practitioners may employ.

Conclusion

The introduction of Polyvagal Theory to futures thinking promises an exciting and potent set of tools, both conceptual and practical, for understanding and working with the body in futures thinking. These tools are likely to find even more novel and potent applications in the future of futures studies—for instance, in the emerging field of personal futures—along with as-yet-unseen collaborations in fields such as neuroscience, dance, psychotherapy, coaching, spirituality, and many more. In this essay, I have sought to build on Wilson and Inayatullah's foundational work in this area by suggesting a case and framework for a polyvagal futures literacy; I look forward to following the interdisciplinary developments to come in this area, from researchers and practitioners alike.

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