Cognitive Sociology: Developing the *'Diversity Pathways'* Model in Cultural Neuroscience

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Abstract

Hofstede's *Cultural Dimensions* is a model for cross-cultural studies. To Hofstede, culture is "mental programming" derived from the social environment, shaping behaviours. Yet, intercultural researcher Dr. Nguyen Phuong-Mai suggests Hofstede's metaphor belies social determinism. With insights from Cultural Neuroscience, Nguyen proposes the *Diversity Pathways* model, marrying Evolutionary Biology and Cultural Sociology. Yet, unlike Hofstede's model, Nguyen's model is still developing as a unique expression of Cognitive Sociology, so is not yet realised for practical research. This paper attempts to reorient *Diversity Pathways* towards a practical methodological approach. To do this, it draws upon sociological insights from theorists Michel Foucault, Bruno Latour, and Jacques Derrida to analyse, and extend, a theoretical model of culture construction, offering a postmodernist pragmatic discourse. We propose a re-centring of Nguyen's model to place culture at its core while addressing critical concerns on genealogy, *différance*, and socio-technicality. To demonstrate the utility of our proposal, we then draw upon the construction of institutionalised racism in the United States. This tentatively introduces the model's value as a practical research tool for the discipline of Cultural Studies, introducing a new tool for researchers, which is particularly useful in underfunded, underprivileged, or remote contexts.

Keywords: *Diversity, cognitive sociology, cultural neuroscience, cultural dimensions*

Introduction

Human behaviour and culture are guiding sources of agency. The *Diversity Pathways of Culture* (*Diversity Pathways*) is a theoretical model, pioneered by intercultural communication researcher Dr. Nguyen Phuong-Mai, which seeks to extend the interdisciplinary exploration of Cultural Neuroscience and show that culture constructs behaviour in symbiosis with environmental and biological factors (Nguyen, 2017a; 2017b). To this end, *Diversity Pathways* is an act of Cognitive Sociology and an effort at overturning the traditional "static" paradigm prevalent in the Cross-Cultural Studies field. A prominent model here is Geert Hofstede's *Cultural Dimensions*, suggested as the "most cited and utilized cultural model" (Yaaqoubi & Reinecke, 2018, p. 1). Nguyen argues against Hofstede's assumption of the "stability of cultural values" inherent in his philosophy that culture is the "software of the mind" (Hofstede et al., 2010, p. 5), which regards culture as a set of defined social values guiding human behaviours (Nguyen, 2017b). Hofstede's work arose from research for International Business Machines (IBM), which investigated values amongst employees across 72 countries; he identified six polarised dimensions, namely high/low power distance, individualism/collectivism, high/low uncertainty avoidance, masculinity/femininity, long/short term orientation and indulgence/restraint (Jones, 2007; Hofstede, 2011). This entailed a hypothesis suggesting culture is learned as a mental programme from social environment conditioning (Hofstede et al., 2010). The high corporate value of cultural research, then, enabled the dominance of Hofstede's model (Jones, 2007). Nguyen, by contrast, proposes *Diversity Pathways* on the argument that, while human diversity has historically been investigated through the divergent academic disciplines of Evolutionary Biology and Anthropology, it has become increasingly apparent cultural acts are inseparable from biological processes (2017b). To this end, Nguyen (2017a; 2017b) proposed culture as one of a myriad of factors in human development.

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The Diversity Pathways Model

Our paper situates Nguyen's view, suggesting a network of socio-technical factors construct the human experience, or what Nguyen calls context, and these factors are intertwined, thus co-constituted (Latour, 1988/1984). The construction of culture is shaped by not only social but also technical forces, so biological and physical elements, themselves susceptible to change and evolution (Nguyen, 2020; 2017a). Nguyen, then, proposes a more "holistic" perspective on the human experience, but to compete with the Hofstedean paradigm, *Diversity Pathways* has a hurdle to overcome: Nguyen's model itself needs to evolve more methodological applications in research. Presently, it is inherently philosophical. Within this paper, we consider methodological implications for Nguyen's model, as a practical research tool for cultural researchers. To this end, we first evaluate Nguyen's *Diversity Pathways* theoretical model and seek to situate a critical perspective. This leans towards the sociological and methodological application of *Diversity Pathways*, which itself was adapted from the *Environment-Culture-Gene Pathway Model* by Chiao et al. (2014). However, Nguyen's diagram (Figure 1.) consists of five co-constructing factors that try to explain human diversity: Environment, Genes, Culture, Brain, and Behaviour. Underpinning this, then, is the conceptualisation of human culture as a cumulative evolutionary trait, a role intended to help humans survive. Biology and cultural behaviour, consequently, share a co-constituted relationship. Nguyen (2017b) suggests one example of how historical nomadic culture in South America led to the prevalence of a novelty-seeking variant of the dopamine D4 receptor amongst people from the region. In other words, human diversity can result from environmental factors driving mutual changes across both culture and biology that reinforce human survivability in a given environment (Nguyen, 2017b).

Figure 1 *The Diagram of* Diversity Pathways *(Nguyen, 2017b)*
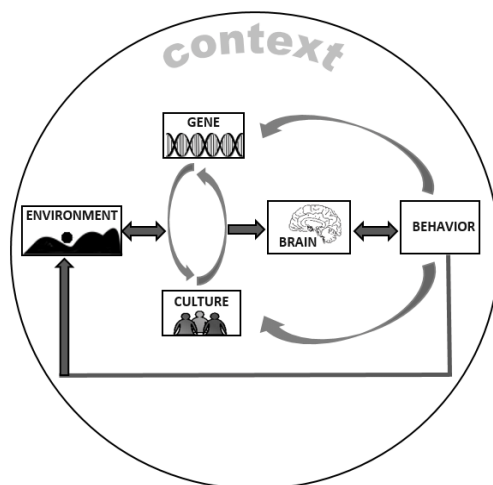
A key concept in Nguyen's model is that the brain, like culture, is a dynamic factor of human development; it co-operates via symbiosis of culture, as with biology. The idea that brain structure can change and develop dynamically is called neuroplasticity. Therefore, periods of such "plastic" development can serve to redefine both culture and biology (Costandi, 2016; Crawford, 2019; Nguyen, 2017b). However, our social behaviours also exert the power to alter the brain; biological studies have shown that the things we do, such as running, juggling, dancing, drug-use, or meditation, among others, result in changes in brain structure and the human body, which itself is shaped by socio-technical influences that redefine subsequent cultures, behaviours, and psychological models (Calvo-Merino et al., 2005; Cerulo, 2010). Consider, for example, a prosthetic running blade on a person who loses a leg in an accident; this creates a socio-technical adaptation coalescing in the brain and a force of change across interrelated socio-technical domains (Nguyen, 2017b). Indeed, a vital contribution of Nguyen's model is its "pathways" of thinking, which allow us to link neuroplasticity to socio-technical domains of experience such as the external physical environment, cultural practices, genetic composition, and behavioural habitus.

Context Tracing: Sociological Perspectives on *Diversity Pathways*

All such factors are discussed across the work of notable social philosopher Michel Foucault, who likewise argued human society was a realm of discursive possibilities, where discourse referred to the conversations, ideas, and the meanings among actors (Foucault, 1981; 1975/1995). So, members of society construct discourses, which construct social reality. Discourse is also at the intersection between Nguyen's views of culture and behaviour. This, for Foucault (1976/1978), was important to understanding how societies evolve. To study discourse, Foucault proposed two modes of analysis: critical and genealogical. In this framework, the former addresses what is excluded from discourse, to discern attitudes, beliefs, and social codes about what is deemed worthy of our attention. Meanwhile, genealogical focus involves tracing elements that construct phenomena (Foucault, 1981). In other words, genealogical analysis embodies the act of highlighting contextual factors and paying attention to "non-social" factors. These factors, which include "non-human" objects like tools, digital technologies, or environmental structures, also possess agency. So, they have power in their own right and thus cannot be assumed, a priori, to be less influential (Foucault, 1976/1978; Nguyen 2017a).

This idea was echoed in Actor-Network Theory (ANT), developed by Bruno Latour, Michel Callon, and John Law, a "socio-technical" approach to social theory recognising non-social objects as equally altering "members of society" that have power and agency (Latour, 2005, p. 71). In this tradition, for anything to happen there must be a combination of actors, whether social or technical, that come together in an aligned way, and at the right moment against other counter-actors; for example, Latour's example of microbiologist Louis Pasteur, who would not have discovered inoculation without agents such as bacteria, his Petri dishes, and the cleaner forgetting to wash them (Latour, 1984/1988). In *Diversity Pathways*, we trace this notion of socio-technicality as it corresponds to Nguyen's biological elements, namely our genes and brain, which would hardly be considered "social actors" yet are human and non-human simultaneously. Yet, Nguyen (2017b, p. 534) writes that from an evolutionary perspective "environment drives nature with genetic traits" and thus our environment remains a powerful force in determining what we do and not do. So, our social behaviours also derive from non-social forces of influence. In this way, the dichotomy between the social and non-social is deconstructed and by doing so, we are encouraged to trace the relationship between culture, people, and network phenomena (Derrida, 1967/2016). This idea, that things can only be understood concerning other things, underlies the *Diversity Pathways* model and ANT. This is also a tenet in the philosophy of *Deconstruction* founded by Jacques Derrida (Derrida, 1967/2016; 1972/1982).

Derrida provided a "deconstructive semiotic strategy" that, taken simply, asserts that the meaning of a given thing derives from not only what it is, but also from what it is not. This may seem paradoxical at first, but to put it another way, Derrida questioned boundaries between phenomena. He suggested that nothing was truly stable nor existed in isolation, for example, searching for a term in a dictionary. Here, an actor searching for the word "tree" will arrive at a definition composed of other words, each with definitions and synonyms. The dictionary offers only networks of words and concepts, but no way to understand tree in its standalone "fullness"—you know what a tree is, by what it is not. Derrida called this phenomenon *différance*, playing on the French verb *différer* as meaning both "to differ" and "to defer." Derrida recognised that concepts are distinguished by their differences from other adjacent concepts. Simultaneously, because concepts can never fully represent what they signify, they also defer and postpone them (Derrida, 1972/1982). Similarly, in Nguyen's *Diversity Pathways*, we observe that none of the five factors can exist without input from the others. Environment, for example, exerts a force on brain cells, and so to study the brain requires reference to environmental factors (de Geus et al., 2001). Likewise, Culture in the model is a factor that influences cognitive processes within this biological apparatus, and so we cannot separate these without reference to cognition (Posner & Rothbart, 2017). Derrida was critical of assertions of stable truths, arguing that such (mis)conceptions arose from an over-simplistic view of dichotomies (Derrida, 1967/2016). To assert a truth, Derrida contended, is to make a naïve binary assumption; "good" and "evil," for instance, depend on one another for coherent identity (Derrida, 1967/2016). The "deferral" aspect of différance suggests no concept can represent itself, without being part of networked meaning.

Philosophies of Methodology: Transcending Staticism in Research

We cannot isolate binaries. Hofstede's binary dimensions, like "masculinity" versus "femininity," limit his method because masculinity depends on femininity to exist as a concept. So, there is no basis for a distinction between both poles. We may observe this deconstructive spirit within *Diversity Pathways*. Nguyen (2017b) highlighted a significant dichotomy in that, amongst scholars of the human sciences, two disparate approaches were historically taken: Evolutionary Biology and Cultural Anthropology. This ensures a binary opposition. Waters (2014) describes both as "valid approaches" but reminds us the biological inquisition tends to place the individual organism at the centre of attention, reading social and behavioural phenomena in terms of advantage to the individual. This neglects the agency of the social environment to construct biology, and vice versa (Waters, 2014; Nguyen, 2019). Conversely, the socio-cultural method provides no definitive answer to the philosophical problem of free-will, unlike biological determinism (Waters, 2014). The logic of différance, however, questions such boundaries and suggests an interdisciplinary "biological-cultural," thus socio-technical, methodology that should drive research of cultural phenomena (Waters, 2014; Nguyen, 2017a; Latour, 1984/1988).

Methods define research, so researchers working within the *Post-Structuralist* school of thought, associated with the philosophies of Derrida and Foucault, adopt critical observational perspectives (Wright, 2003). In other words, qualitative methods are employed, in contrast to quantitative methods, which typically comprise the extrapolation of statistical data (Dawson, 2002). Yet, the Post-Structuralist researcher deviates from the traditional qualitative researcher in acknowledging the social construction of knowledge; they do not claim to capture hard truths, recognising the inevitable incompleteness of all data, quantitative or qualitative (Wright, 2003). Both sides of the traditional qualitative-quantitative dichotomy have been subject to criticism, themselves binary oppositions (Khaldi, 2017). Critics of qualitative methodology cite its tendency for subjectivity. Conversely, quantitative research has been criticised for craving only statistical "number fetishism" (Bryman, 2016; Nielsen, 2004). Yet, Post-Structuralist methods transcend this dichotomy; the researcher is less concerned with absolute truth, or validity, and more with the genealogy of the data they collect. Indeed, to the Post-Structuralist researcher, fixed truths are constructs that limit the potential of research (Derrida, 1967/2016). Put differently, truth is inevitably subjective, but data can help trace its construction; the Post-Structuralist researcher recognises that they too interact with the data and so contribute to its genealogy. So, a method must show that the researcher and their research co-construct one another. Therefore, it is not surprising that Hofstede's *Cultural Dimensions*, underscored by a philosophy based on statistical values, enjoys appeal amongst practitioners of traditional quantitative research, themselves seeking "stable" truths; this limits the approach underlying the claims made by Hofstede (Khaldi, 2017; Bryman, 2016).

Indeed, this approach is no stranger to controversy, and Jones (2007), to give but one example, notes detailed criticisms against Hofstede's model. For example, the model assumes all members of a nation share the same cultural values, thereby promoting a homogenous view linked to "colonial oppression" (Fougère & Moulettes, 2007). This monolithism is a limitation; cultural philosophies of the Hofstede type are vulnerable to critiques of being "Eurocentric," "orientalist," and "ethnocentric" (Mateo et al., 2013; Fougère & Moulettes, 2007). Despite criticisms of the homogenous view of culture, proponents have defended Hofstede, citing his model's individual "relative accuracy" (Jones, 2007). In Hofstede's IBM study, employees in the company's international branches were surveyed to a total of more than 100,000 questionnaires; this is not statistically insignificant (Hofstede et al., 2010; Hofstede, 2011). As such, Hofstede et al. (2010) recommended questionnaires as a diagnostic tool, although they acknowledged that people may not always act the way their scores indicate. Likewise, such methods lack depth, are open to self-bias, thus shaped by personality in many cases. In contrast to a Latourian view, Hofstedean researchers feel that they can extract reliable data about cultural values if they distinguish between a subject's cultural ideals and their practical choices. Yet, Maseland and van Hoorn's (2009) review of the methodologies employed by Hofstede's study, and other similar cultural indices, found a limitation: The data did not correspond with practices. This means that such

"value surveys" reflect marginal personal preferences, rather than cultural values, creating doubt over the accuracy and usefulness of Hofstede type studies (Maseland & van Hoorn, 2009).

**Dynamism and Pragmatism: Reinterpreting *Diversity Pathways***

There is a need for pragmatism in research methodology. Yet, can *Post-Structuralism* offer such an alternative? At first, the Post-Structuralist claim that nothing is true may seem counter-intuitive. Jones (2007), supporting Hofstede, calls for as "unbiased and unambiguous a research instrument as is practical", yet this requires us to question what methods work to understand culture, given the complex genealogical and interdisciplinary implications raised in this paper. Here, the Post-Structuralist approach lends explanatory power over tracing context and genealogical factors, yet it falls short in practicality. Each part of Nguyen's model (2017b), seen in Figure 1, is dynamic and, in our view, is subject to infinite deferral; it can never be traced completely (Foucault, 1977/1980; Derrida, 1972/1982). Koopman (2016, p. 75) characterises both genealogical themes and deconstruction as "obsessive about limits" and what follows is our attempt at reconciling this to expose the limits of a pragmatic approach to research in the context of *Diversity Pathways*. No research can be truly unbiased and unambiguous; yet, studies such as Hofstede's IBM project aim to derive large scale conclusions about how people enact specific cultural behaviours, thus how people of a given culture "do" being human.

Post-Structuralism warns that expecting "hard facts" is problematic since unduly specific, stable truths cannot be isolated (Derrida, 1967/2016). So, within this chase for knowledge, one needs to know how much chasing is enough, a point Latour raised in discussing *punctualisation*, a term to express a need to isolate networks within network-tracing (Latour, 2005). While *Diversity Pathways* is philosophically compatible with Post-Structuralist thought and ANT, we argue that it may not be optimally visualised for pragmatic methodological use in cultural research. For example, social scientists likely do not have access to, nor the training for, complex scientific technology. This is particularly true in remote, or underprivileged, populations. Plus, somewhat contradictory, culture is not the focal point of *Diversity Pathways*, rather, the model situates it as but one part of a greater context; Nguyen calls this the "ultimate power" (2017b, p. 534). Here, context encompasses the circumstances in which the five factors evolve in different ways. So, the study of context aims to recognise the agency of each factor in co-constituting one another. Consequently, studying culture must entail recognition for how it responds to circumstances and situations (Nguyen, 2017b). Yet, Nguyen's model currently visualises cultural acts from a macro-level perspective. So, if one were to examine the factor of Culture specifically, we contend one would need to reorient the model, and diagram, to place it at the centre of context. After all, such context is significant enough that Osland and Bird, as cited by Nguyen (2017b, p. 535), suggested that, contrary to Hofstede, cultural models should index context rather than countries.

Yet, to privilege context over culture as a concept and factor may create a research periphery too broad for most empirical studies on culture. A solution, then, might be the redefinition of contextual investigations into interlinked microstudies, which we contend is a necessary feature of making *Diversity Pathways* more effective. So, while culture would be the main target of study, it is only one factor within the specific context examined. To this end, to compete against static models such as Hofstede's, we propose a reorientation of *Diversity Pathways* with the component of Culture not just as a factor, but the model's focus. Therefore, to visualise this, we developed a methodological diagram (see Figure 2) based on Nguyen's. As asserted, each component of the all-powerful context is dynamic, so the diagram emphasises cultural themes as co-constructed. We propose a "genealogical-relational philosophy of culture" within this model that is grounded by Derrida's idea of différance and informed by the other socio-technical theories noted. This argues that Culture can only be understood in terms of other components of context, which we have reinterpreted as Environment, Genealogy, and Brain-Behaviour orientated around Culture. Environment refers to physical, social, and technical surroundings, so conditions where a culture is situated. Genealogy encompasses historical-social and biological-technical inputs, so supporting the Latourian human and non-human developments of a

culture. Brain-Behaviour addresses biological structure and functional aspects of various faculties of the mind, including conceptual constructs such as metaphor, blends, and frames. Each of these contextual components has co-constituted boundaries, so interrelated that, frequently, there are overlaps. Therefore, we contend, each component, or factor, can then only be understood by the consideration of the other three—constructed through différance (Derrida, 1972/1982; 1967/2016).

Figure 2 *A Repositioned Diagram of* Diversity Pathways *to Cultural Construction*
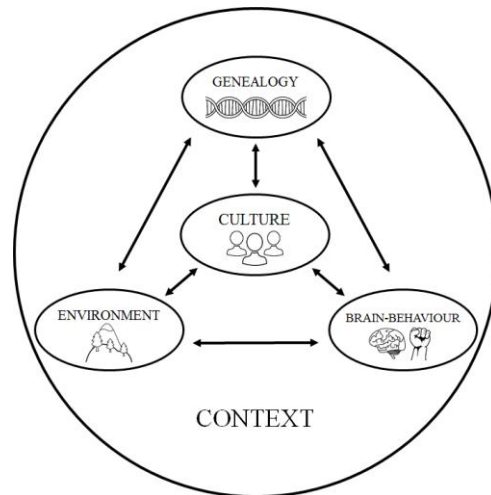
Diversity Pathways: A Modest Issue of Re-Focusing

This rebuilds the 'context' as a socio-technical development philosophy that underpins *Diversity Pathways*. Nguyen notes Environment and Culture interact in two ways: first, that geographical environments shape the economic practices of its inhabitants, as well as their collective psyches, and second, that human cultural practices tend to, in turn, reshape the environment (Nguyen, 2019). Nguyen's sense of the Environment factor, then, is bound to the physical and geographic. At this point, we deviate from Nguyen in expanding the Environment factor to include the intangible, such as digital spaces and socio-legal contracts, or constraints. To this end, the former, for example, includes Web networks: media platforms, Internet protocols, users, preferences, and the limits of computer hardware, which can allow, or disallow, the interaction between socio-technical agents. The legal system is an apparent example for the latter; the law is a codified system of rules imbued with, and often in service of, the power of the sovereign state, forming barriers to behaviours that, like the physical environment, determine social agency as well as collective action (Foucault, 1975/1995). Humans, as socio-technical actors, bear the ability to manipulate intangible environments (Latour, 2005). Consider the burglar trespassing on protected grounds while security tracks them; we can observe human actors solidify, almost golem-like, with environmental elements, non-human technicalities. The security guard is a fixture, but a mobile one, which serves to temporarily make it perilous for the burglar to trespass. This same security relies upon non-humans, such as cameras and other equipment. Environment, then, we contend, does not necessarily refer to what we can see and touch around us, nor is it something that necessarily lacks agency and thought. Rather, its form encompasses the invisible, the governmental, and the social ad hoc.

In a similar fashion of expansion, then, we draw inspiration from the thought of Foucault (1981; 1975/1995). Within our methodology, Genealogy is no longer exclusive to biological genetic factors, as it was for Nguyen. Rather, it includes socio-political, thus biopolitical, developments and discursive practice; Genealogy, then, represents an expanded sense, as the accumulation of ancestral information that fuels our *habitus* (Foucault, 1981; Bourdieu 1972/1977). So, genealogical experience influences behavioural dispositions of people within a culture and this knowledge nexus is built by biological, technical, political, and broadly social discourses. So, as with Environment, it is a socio-technical mechanism (Latour, 2005). Foucault elaborates that Genealogy, in his view, "does not

resemble the evolution of a species and does not map the destiny of a people. On the contrary, to follow the complex course of descent is to maintain passing events in their proper dispersion…" and to this end, Foucault encourages us to see beyond linear boundaries limited by disciplinary silos and thinking, which instead forces us to rather trace "the accidents, the minute deviations—or conversely, the complete reversals… that truth or being do not lie at the root of what we know and what we are, but the exteriority of accidents" (1977/1980, p. 146).

The crux of Foucault's understanding of Genealogy, then, is the "accidental coming-together" of all the right elements. This is echoed in Latour (2005, p. 5) who sought to redefine the discipline of Sociology "not as the 'science of the social', but as the tracing of *associations*." Genealogy, then, offers us a methodological perspective to describe a culture in terms of tracing associations between those things and events which construct that particular culture, whether biological, environmental, social, political, or cognitive. So, for the Brain-Behaviour factor, we adopt an experientialist viewpoint of the human mind. In other words, we are concerned with physical-biological structures, but also with cognitive structures based on knowledge gained via experience (Lakoff, 2012). This knowledge extends to contextual and semantic domains of knowledge (Hickman, 2020). In Lakoff and Johnson's (1980) seminal proposal for *Conceptual Metaphor Theory* within Cognitive Linguistics, it is suggested that understanding emerges from participation and thus "constant negotiation with the environment and other people" leads to recurrent experiences that form "categories, which are experiential gestalts" defining the world as we know it (pp. 327-328). Nguyen (2019) also emphasises that our behaviours and lifestyles can affect epigenetic configurations of our DNA. Thus, we aim to consider the knowledge the mind draws upon to effectuate behaviour; Bourdieu (1972/1977) would see this as habitus.

Nguyen (2017c) touches upon this by suggesting that to "construct a multicultural mind" entails the expansion of an individual's cultural repertoire. This repertoire, from a cognitive perspective, encompasses competencies varied as linguistic ability, empathy, and reasoning (Lakoff, 2012; Halliday & Hasan, 1989; Chomsky, 1984). Yet as Halliday and Matthiessen (1999, p. 2) suggest, expression of meaningful knowledge, whether through language or cultural practice, is, ultimately, a social activity, not solely an individualistic process. To this end, we go further to view this as a socio-technical activity; thus the methodology proposed requires a researcher to explore each of the factors of Environment, Genealogy, and Brain-Behaviour in semiotic links with Culture, and then describe cultural outcomes in terms of the influences of all upon each other. This can be done with qualitative or quantitative methods, as long as the data provide insight describing a culture as part of a relational triple, which is key within semantic reasoning. So, in our subsequent section, we consider a hypothetical overview of methodological implications for such cultural construction. This provides a holistic approach, which does not attempt to draw fixed boundaries, or pin down static aspects of a certain pattern, but recognises the interconnected nature of human development, echoing Post-Structuralist reasoning. In the spirit of Nguyen's *Diversity Pathways*, this methodology gives due attention to the factors that contribute to cultural development, so that we may trace its construction beyond a simplistic paradigm of cultural dimensions and dispositions. Figure 2, we argue, is needed to develop more practical approaches to cultural research that recognise these socio-technical implications.

Nguyen's model, however, stops short of this direction, favouring the inherent ad infinitum cycle, so creating a need for a more pragmatic application of the model, if the purpose of the study is to examine cultural phenomena. We can display this in a four-part conceptual framework to suggest each methodological component for the model, and processes for engaging it. So, first, for Environment, we must describe the Environment, and trace the connections as well as influences of Genealogy and Brain-Behaviour on the Environment. Second, for Genealogy, we must describe the Genealogy, and the influences of Environment and Brain-Behaviour on this Genealogy. Third, in the same pattern, for Brain-Behaviour, we must describe the Brain-Behaviour, and impact of Genealogy and Environment on Brain-Behaviour. Finally, fourth, for Culture, we must describe Culture, and the influences of Environment, Genealogy, and Brain-Behaviour on such Culture. As Latour (2005) suggests, cultural phenomena become a black box, so a network we can focus on, unintentionally encasing the self-contained "punctualised" networks we refer to as Environment, Genealogy and Brain-Behaviour. Yet,

each of these black boxed networks are both co-actors and sub-actors of one another. Simultaneously, Culture is a component of these and, from a socio-technical perspective, a co-constituted overlapping heterogeneous phenomenon, which creates the network and is created in return. Therefore, we need a methodological philosophy for how we trace these relationships and recognise cultures. To this end, our proposed model (Figure 2) offers a more coherent methodological footing for investigating cultural phenomena.

Ramifications for the Cognitive Sociology Researcher: A Methodology for Diversity Pathways?

We contend this because of our re-interpretation (see Figure 2) operates from a simple organisational method. This embraces the relational belief that to give due consideration to the factors of Environment, Genealogy, and Brain-Behaviour, a researcher must engage in condensed, manageable microstudies that engage a perspective on each of these components. They do so towards the core aim of relating a fuller explanation for constructing culture. So, tracing distinctive actors and forming a consensus, rather than a disconnected static approach; an interdisciplinary mixed-methods toolkit is needed. Environment shapes a culture that can be studied with methods such as field observation, interviews, or secondary sources. Researchers may also describe Environment from multiple points of view; as an outside observer, or as a member of the local culture. So, researchers need to personally observe the Environment, or, at least, interview members of the culture under study to describe their Environment. We contend this approach should form a relational methodology. Additional information thus could be sought through secondary sources, such as maps, or data on climate, structures and facilities. Yet, these approaches should not be limited to the study of just aspects of the physical-geographic Environment; they may be adapted to fit the investigation of socio-technical environments, whether intangible non-humans, like digital, socioeconomic, or normative environments, or human, as elements of an environmental setting. So, a researcher could turn to sources such as work schedules, daily routines, office rules and policies, then, to reveal potential to describe environmental constraints. Despite a great manifesto, this semiotic approach is an area of development needed in *Diversity Pathways* and one that this paper seeks to reinforce, to offer one way forward (Nguyen, 2019).

To illustrate a relevant example, upon writing, we may trace the construction of racism in the United States of America, and subsequent systemic racial discrimination, as a cultural phenomenon. There is a myriad of theoretical, philosophical, and methodological lenses with which a researcher may approach this vast topic, as well as an abundance of data types and sources. For illustration, we will refrain from detailing the specifics of how a researcher could approach the design of data collection, and rather exemplify the utility of the kind of thinking with which researchers should approach the cultural investigation of racism in this setting, via our proposed philosophical model (see Figure 2). Institutionalised racism is a complex socio-technical phenomenon; by nature, it is an interdisciplinary problem. For one, it bears socio-cultural premises; racism is practised within a paradigm of racial categories, hierarchies, and relations amongst, between, and because of actors in society. It exists beyond just human actors; so, it does not only need them to occur. Rather, it is also reliant on technical factors to effectuate itself. For example, the distribution of wealth, jobs, and homes are very real determinants of inequality that might spur and catalyse racial tension. There is undoubtedly a genealogical aspect; inequalities can be culturally reinforced and reproduced (Bourdieu, 1972/1977).

To use our proposed model (see Figure 2) to attempt to explain the construction of such a system of discrimination, particularly within the USA, as an example currently polarised by debates such as #blacklivesmatter and the role and position of African Americans in this year's Presidential Election, amongst other contemporary topics, we must first trace matters of Environment. Looking back to the 15th century, when the Transatlantic Slave Trade was in its nascent phases, we can observe that the Environment of the then-newly discovered Americas was rich in various resources valuable to Europeans, such as sugar, tobacco, precious metals, cotton, and other goods (Rawley & Behrendt, 1981/2005). Thus, an Environment for trade was primed. We can then trace Genealogical factors

parallel to this; in the same period, European seafaring innovations allowed Europeans to travel to previously un-contacted regions of West Africa, predominately to seek out needed goods to fuel the environmental setting described, furthering competitive markets. At this point, several things occurred in sync establishing a heritage of racial inequality. These include the rich untapped resources of the Americas, the new technical ability to travel between Europe, West Africa, and the Americas, along with European colonialist ambitions, human agency and competitive natures. These resulted in the Brain-Behaviour, on the part of those in European positions of power, to begin acquiring slaves, including by snatching them up during raids, from the West African region, to transport to the Americas as slave labour to mine New World resources for profit (Rawley & Behrendt, 1981/2005).

Brain-Behaviour toward people of African ancestry was thus established, engaged by Environment and determined by Genealogical features that continued into racial segregation, inequality and social divisions both back then, and many years later. Although European indentured servants were not uncommon then, laws were passed in what was Britain's Thirteen Colonies, despite being contrary to English laws present even in this period, that legally institutionalised perpetual slavery, which was exclusively imposed on non-White servants and reinforced this Brain-Behaviour (Rawley & Behrendt, 1981/2005, p. 266). At this point, a socio-technical phenomenon emerges; genealogically passed down notions of racial bias began by lessening the humanity of those darker-skinned peoples, which itself interacted with, and was reinforced by, legal apparatus to construct a racialised slave caste system as a legal, social, personal, and conceptual construct. Whilst the legal bases of this caste construct were abolished in the USA in 1865 with the Thirteenth Amendment, negative Brain-Behaviour against African Americans was already an embedded feature of the white-dominated nation, which itself was passed forward into the Environment newly born people were raised into, thus continued to be effected in other avenues shaping Environment and Culture. Notably, the institutionalisation of racial segregation can be traced as a cultural norm long after the abolishment of slavery and well into the 1970s. Segregation arguably continues today in the distinctions drawn between predominantly White/Black neighbourhoods re-perpetuated by financial constraints that are themselves rooted in genealogical bias, or "racism by consequence," as opposed to malicious intent (Guess, 2006).

We have described how these various factors interact to produce institutionalised racism, relying on a brief literature review, alongside philosophical theorising, as our main research method. The next step, having sketched a tracing of our network (see Figure 2) would be to plan microstudies investigating each of Environment, Genealogy, or Brain-Behaviour as the focal areas of interest, planning an inter-related approach that links the common feature of interest: racism in the USA. The researcher could begin by establishing how certain features of Environment assist in the production of racism. As contended, these can be physical constraints as well as legal, digital, or what we might broadly term as socio-technical. An example could be the relationship between the police forces and racial bias; policing is a socio-technical institution where human operatives are environmental agents who can restrict, or allow, movement and behaviours. As a socio-technical network, the researcher can seek evidence of racial bias of the police concerning legal constructs, or by geographical positioning, or even look for evidence in training policy and operating procedures. This, in isolation, is intriguing but outlined in the framework of our proposed model becomes a more detailed narrative when considered as conditioning of the Brain-Behaviour of the police, themselves an institutionally powerful actor within communities and thus instrumental in the conditioning of others in a genealogical manner. Researchers may study these discursive extensions by engaging in methods borrowed from Social Psychology (DiMaggio, 1997).

In Social Psychology, as a field, the interest is in studying thought, emotion, and behaviour in the context of the human subject as a member of society, as well as the power inherent to them as agents acting upon society (Jhangiani, 2019). Thus, researchers could employ methods ranging from laboratory experiments, field experiments, survey research, subtle/non-conscious research techniques, active research, discourse analysis, and archival research to seek a relationship between the evidence sourced in Environmental microstudies and hypothesised beliefs of Brain-Behaviour (Jhangiani, 2019; Pereira & Álvaro, 2013). There is, consequently, a wide range of options for the

cultural researcher regarding Brain-Behaviour; thus, keeping this relationship in mind, so to speak, the researcher, we contend, should pick a method that is impactful, relevant, and insightful for conclusions about Culture as the focal nexus of study. Inversely, the influence of Brain-Behaviour on constructing cultural Genealogy is a similarly significant relationship. We can trace how archaic concepts about race, dating back to the Slave Trade, might have been passed down, as an ancestrally institutionalised feature, so Genealogy, to the law enforcers of today, via the laws and lawmakers of this shared Environment, perhaps even perpetuated due to a relationship between shared militarised professions often within single-family units (e.g., father/son as a police officer). Indeed, to study Genealogy, one must already be thinking about the psychological states, actions, feelings, behaviours, and events that precede our surface impressions of a cultural situation—racism is no exception to this, as it still occurs today (Waters, 2014).

Conclusion

The logical progression, for a researcher, would be to draw connections between Brain-Behaviour, Environment and Genealogy as the salient artefacts of Culture. For example, the researcher may investigate how behaviours solidify into traditions, as norms that then characterise a culture. Indeed, the Genealogy component is an enabler of knowledge accumulation from experiences arising from the Environment and Brain-Behaviour factors and vice versa. The researcher seeks to know Culture, but this concept is defined by the components described. Without recognising the relationship highlighted by our proposed model (see Figure 2), researchers would lack a relational perspective identifying the features of a heterogeneous socio-technical network of networks. This lacks semiotic meaning about how phenomena came about. Consequently, this would limit us to a paradigm of simplistic dimensions and dispositions translated as numbers. *Diversity Pathways* is a dynamic model, one philosophically invigorating. Yet, like all new ideas, it needs further development; *Diversity Pathways* is concerned with all-encompassing context, rather than Culture, because the associated cultural agency is viewed as one component of context. This limits *Diversity Pathways* as a tool. So, the task of this paper was to propose a new model that reorients Nguyen's *Diversity Pathways*. Thus, we re-situated Culture at the centre of context, interacting with three revised and reformed factors of Environment, Genealogy, and Brain-Behaviour in an orbiting inter-directional relationship of influence; a network of actors. Our view recognises the dynamicity of culture as an actor linked to other socio-technical factors in the spirit of Derrida's understanding of différance. We exemplified co-constructed microstudies as an approach where each factor is a component towards knowing, more fully, the cultural object of study.

So, we contended, throughout this paper, that cultural phenomena incorporate Environment, Genealogy, and Brain-Behaviour. Furthermore, we recognised that cultural phenomena are complex, more so as the cultural acts found within them become more uncommon. Therefore, for those in field work as lone researchers of Cultural Studies, the benefits of collaboration become more apparent. Put another way, for those engaged in study within developing nations, often resource-limited, finding new ways, languages, and modes of 'common' discourse can be crucial to producing impactful research. To this end, the model we proposed (Figure 2) is useful. In this paper, then, we set out to shape the basis of a pragmatic methodology, and philosophy, for Nguyen's (2017a) critically enlightening ideas. Along with Nguyen's work, this is needed to challenge the static quantitative paradigm still dominant within Cultural Studies: "organisational culture" as a statistic. However, as we move forward in developing our rationale, we highlight a limitation; we need further exemplification of the methodological position adopted. Likewise, the need to now consider the inevitable increases in ethical complexity that arise from the interdisciplinary approach, incorporating mixed-methods drawn from different disciplines and between diverse, highly specialised researchers. To this end, the limitations of any newly proposed method of conducting research are present within our suggestions, which we are aware of. To this end, our proposed reconfiguration of *Diversity Pathways* requires greater application.

As of yet, for example, it is difficult to identify how a sample could be constructed for our method, due to the interlinked microstudy approach necessitating multiple groups, each with distinct ethical dynamics. To this end, the practicality of a method is as important to a researcher as issues of data triangulation. Whether our approach can be practically utilised requires study testing. We might likewise be influenced by our own cultural biases, as researchers seeking to bridge disciplinary silos—a problem. However, these limitations can be strengths—challenges to overcome in the field of research methods. Our ideas, we acknowledge, are based on *Diversity Pathways*, an established concept that is gaining repute. Thus, our approach could increase acceptance of dynamic cultural models. This includes, for example, nationality, where a nation can all too easily be treated as one context, yet includes a multitude of smaller contexts missed by such a grouping. The nation, then, is not just a boundary for culture, as per Hofstede. It is a network of socio-technical tribes and institutions, drawn from Environment, Genealogy, and Brain-Behaviour defining a nation's Culture. Thus, Nguyen's (2017b) view that intercultural competence entails the acquisition of a "multicultural mind" is important. Cognitive Sociology must bridge intellectual fields, including the biological, to understand what we term too simply as culture.

Acknowledgements

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