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Humility and Inquiry: A Response to Tibor Solymosi

Abstract:

In his essay, “Affording our Culture: ‘Smart’ Technology and the Prospects for Creative Democracy,” Tibor Solymosi addresses my challenge for neuropragmatism to counter what I have elsewhere called *dopamine democracy*.¹ Although I believe that Solymosi has begun to provide an explanation for how neuropragmatism may counter dopamine democracy, especially with his conceptions CE and cultural affordances, I respond with a helpful addition to his approach by returning to the theory of inquiry as put forth by John Dewey. In particular, I focus on the phases of inquiry as colored by Dewey’s concept of humility. Solymosi does not pay adequate attention to the function of inquiry necessary for combatting dopamine democracy. His account of cultural affordances and education is strengthened by using Dewey’s concept of humility as a guiding disposition for neuropragmatic inquiry. Recognizing humility as an instrument of neuropragmatic inquiry provides us with a tool to better address the pitfalls of dopamine democracy, especially misinformation and incentive salience. My argument proceeds by first articulating dopamine democracy as a problem and Solymosi’s concept of cultural affordances and how he understands these as neuropragmatic tools to address the problem through education. I present humility as an instrumental concept derived from Dewey’s work on inquiry. I then suggest how humility may serve neuropragmatic inquiry to assist in combatting the problems of dopamine democracy.

Keywords:

neuropragmatism, inquiry, humility, pragmatism, affordances, democracy, social media, technology

1) Tibor Solymosi, “Affording Our Culture: ‘Smart’ Technology and the Prospects for Creative Democracy.” *Eidos. A Journal for Philosophy of Culture*, no. 6 (December 2018): 46–69, DOI:10.26319/6916.

1. Neuropragmatism and Dopamine Democracy

Solymosi addresses my essay, “Undermining Dopamine Democracy Through Education: Synthetic Situations, Social Media, and Incentive Saliency.”² I use the phrase *dopamine democracy* to capture a type of problem within our current milieu: the appearance of freedom accorded by the use of our tools – especially social media – that undermine our freedom to inquire and make intelligent choices. The concept of dopamine democracy is an updated version of the problem indicated by Plato in the *Republic* when he is speaking of being led by the appetites and warns that extreme freedom leads to extreme enslavement.³ Dopamine democracy is “a general system or pattern of behavior in which persons are generally of the belief that they make free choices that directly contribute to governance, even though choices are actually directed by incentive saliency, or the immediacy of wanting and seeking, without critical reflection or deliberation.”⁴ As a means to critically reflect upon dopamine democracy and thereby work against it, I suggest Dewey’s philosophy of education as a tool. More generally, I believe that Dewey’s theory of inquiry, especially as put forth in the second edition of *How We Think* and *Logic: The Theory of Inquiry*, is helpful for addressing the problem. In tandem with the theory of inquiry, I suggest that neuropragmatism, as it has been posed by Solymosi, may provide tools to assist in breaking our addiction to dopamine democracy. As Solymosi indicates, dopamine is at the center of the problem from a neurochemical perspective, but as neuropragmatism rightly stresses, all activity occurs in context. To understand and usefully address such issues, it is necessary to account for our neuromodular systems within their behavioral, sociopolitical, technological, and other contexts as our problems dictate. Neuropragmatism seems ideally suited to do that. Recognizing the transactional nature of experience, Solymosi puts forth the idea of CE to signify the organism in and of the environment.⁵

Neuropragmatism follows Dewey’s dictum “to see the organism *in* nature, the nervous system in the organism, the brain in the nervous system, the cortex in the brain is the answer to the problems which haunt philosophy. And when thus seen they will be seen to be *in*, not as marbles are in a box but as events are in history, in a moving, growing, never finished process.”⁶ This is a promising position from which to address the problem of dopamine democracy, for as Solymosi remarks about neuropragmatism as a type of inquiry, it takes “seriously the insight, tools, and techniques developed by the neurosciences as achievements in a living context of growth.”⁷ It is, “a full-bodied philosophy that provides a process ontology and an experimental methodology for living an aesthetically rich life.”⁸

In his response to my challenge, Solymosi provides introductory scaffolding from which to later build more robust viable solutions that neuropragmatism may offer in the midst of dopamine democracy and its resultant feedback loop of incentive saliency. His initial focus is on what he calls the 9 E’s of cognition: embodied, embedded, enactive, extended, emotional, evolutionary, exaptive, ecological, and educative.⁹ Ecological and

2) Mark Tschaepe, “Undermining Dopamine Democracy Through Education: Synthetic Situations, Social Media, and Incentive Saliency.” *Pragmatism Today* 7, no. 1 (2016): 32–40.

3) Plato, *The Republic*, translated by G.M.A. Grube (Indianapolis: Hackett Publishing Company, 1992), 564a.

4) Tschaepe, “Undermining Dopamine Democracy,” 35.

5) Solymosi, “Affording Our Culture”; see also Tibor Solymosi, “We Deweyan Creatures,” *Pragmatism Today* 7, no. 1 (2016): 41–59.

6) John Dewey, *The Later Works of John Dewey, 1925–1953: 1925, Experience and Nature*, vol. 1, edited by Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 224.

7) Tibor Solymosi, “Neuropragmatism, Old and New,” *Phenomenology and the Cognitive Sciences* 10, no. 3 (2011): 306, <https://doi.org/10.1007/s11097-011-9202-6>.

8) Solymosi, “Affording Our Culture,” 52.

9) *Ibid.*

educative cognition are most directly relevant to dopamine democracy, although all 9 E's relate. These two types of cognition situate the CE that Solymosi proffers as organism-environment transaction with developments of science and technology.

Ecological psychology provides the concept of cultural affordances. Affordances are opportunities for action. According to Solymosi, cultural affordances are opportunities for action “that are deliberately produced by human beings to bring about specific experiences.”¹⁰ He states elsewhere, “Communication – language especially – affords cultural organisms (namely, humans) access to new opportunities for action, from singing to science.”¹¹ Communications include substance, such as speech, writing, and graphic representation, as well as the vehicles that deliver substance, for instance, smart phones and other digital devices. Thus, the substance and media of information are cultural affordances that provide opportunities for human action. Arguably, information is the most valuable substance of communication within our array of cultural affordances. Solymosi notes, “information can be vital as well as destructive; hence the necessary distinction between information as knowledge and information as falsehood (or, more simply, misinformation).”¹² Dopamine democracy exploits the vehicles of communication so that what is presented as information is part of incentive salience; people simply accept what is presented as information without thinking. What is presented as information supplies a series of dopamine loops that provide a basis of belief in what is being communicated. Communication is consumed without reflection. Solymosi correctly indicates the need for an intelligent response to dopamine democracy. “Intelligent cultivation must be explicitly at odds with incentive salience.”¹³ The precarious status of information – as often misleading or false – and the lure of incentive salience through the unreflective use of vehicles of communication lead to the need for the 9th E of cognition: educative cognition. What education should provide are habits of inquiry that counter dopamine democracy.

According to Solymosi, “Educational institutions and practices are paradigmatic cultural affordances. In making explicit this ecological connection between education and affordances, I also note the further connection with evolution and democracy.”¹⁴ Education has evolved and expanded as a democratic process, and this expansion is due to critical reflection about educative cognition. Neuropragmatism encourages deeper focus on the CE transaction of experience, especially as pertaining to the 9 E's. Unfortunately, dopamine democracy stifles the democratic affordances of education, leading to regression. The result is that we “aren't filled with that which is and never taste any stable or pure pleasure. Instead [we] always look down at the ground like cattle, and, with [our] heads bent over ..., [we] feed, fatten, and fornicate.”¹⁵ Faced with synthetic situations – on-screen, immersive electronically mediated experiences – and incentive salience, education as critical reflection is our only hope to escape our status as dopaminergic drones. “Without such philosophical reflection, dopamine democracy can run amok, making depraved the transactions of humans with each other immediately as well as with the past and with the future.”¹⁶ If there is an answer to dopamine democracy, Solymosi states, it must come through education that provides the means to engage in critical inquiry regarding the tools we use and

10) Tibor Solymosi, “Dewey on the Brain: Dopamine, Digital Devices, and Democracy,” *Contemporary Pragmatism* 14, no. 1 (2017): 30, <https://doi.org/10.1163/18758185-01401002>.

11) Tibor Solymosi, “Against Representation: A Brief Introduction to Cultural Affordances,” *Human Affairs* 23, no. 4 (2013): 602, <https://doi.org/10.2478/s13374-013-0151-3>.

12) Solymosi, “Affording Our Culture,” 61–62.

13) *Ibid.*, 62.

14) *Ibid.*, 63–64.

15) Plato, *Republic*, 586a-b.

16) Solymosi, “Affording Our Culture,” 64.

their effects on us. This is a promising suggestion, but no foreseeable method is proposed by which neuropragmatism is to proceed as a basis for education.¹⁷ The next step is to provide a specifically neuropragmatic method of inquiry. Initiating that next step, I believe that humility is a useful tool for neuropragmatic inquiry because it aids in preventing neuropragmatists from falling prey to problematic effects of dopamine democracy as they attempt to address it. Primarily, the problems of incentive salience and misinformation breed conceit, arrogance, and impertinence, all of which undermine the ability to inquire well. Humility is an underutilized, yet important, instrument that aids a neuropragmatic approach to inquiry and proves beneficial for moving forward with more particular strategies for dismantling dopamine democracy intelligently.

2. Humility as a Tool for Neuropragmatism

Humility is an instrument of inquiry that benefits neuropragmatism regarding technology, communication, and the overwhelmingness of dopamine democracy, especially regarding incentive salience and misinformation. Although there is an element of deference to humility, it is not fixed upon an absolute concept or object. Rather, humility adjusts to the problem-at-hand. It is an idea that is not a static goal, but an attitude that is practiced.¹⁸ Humility moderates our approach to inquiry, but not in the sense that we are submissive or deferential to a specific other, such as God, other persons, or science. Neither is humility a form of asceticism or self-effacement in the sense that we devalue ourselves as existing only in the background. Rather, humility constitutes “*the sense of our slight inability even with our best intelligence and effort to command events; a sense of our dependence upon forces that go their way without our wish and plan. Its purport is not to relax effort but to make us prize every opportunity to present growth.*”¹⁹ Humility is an active recognition of context and our dependence upon context, which is distinct from fallibility. Fallibility means that we are open to acknowledging the tendency or possibility for making mistakes. With humility, we are also open to growth, which is facilitated through context. Without context, neither growth nor inquiry would be possible. Dopamine democracy is a vehicle of regression. Coupled with humility, neuropragmatism is a source for growth, in part, because it recognizes the unceasing importance and fluidity of context.

According to Dewey, context includes “background and selective interest.” Background is “the whole environment of which philosophy must take account in all its enterprises.”²⁰ Selective interest, which is also part of context, refers to “some attitude, some bias that constitutes every case of thought.”²¹ Humility entails context-awareness by which we are mindful of both the background of which we inquire (and exist *as* inquirers) and the selective interest that makes every inquiry a particular inquiry. Recognizing context disallows mistaken belief in an Archimedean point from which we inquire or conclude. “A standpoint which is nowhere in partic-

17) For more specific considerations concerning neuropragmatism as it relates to education and neuroscience, see: Deron Boyles, “Brain Matters: An Argument for Neuropragmatism and Schooling,” *Philosophy of Education Archive* (2014): 403–411.

18) Regarding the idea of the dynamic ideals, see: John Dewey, “Self-Realization as the Moral Ideal,” [1893] in *The Early Works of John Dewey, 1882–1898: Early Essays and The Study of Ethics, A Syllabus, 1893–1894*, vol. 4, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008).

19) John Dewey, *The Middle Works of John Dewey, 1899–1924: 1922, Human Nature and Conduct*, vol. 14, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 200.

20) John Dewey, “Context and Thought,” [1931] in *The Later Works of John Dewey, 1925–1953: 1931–1932, Essays, Reviews, and Miscellany*, vol. 6, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 12.

21) *Ibid.*, 14.

ular and from which things are not seen at a special angle is an absurdity.”²² If there is an equivalence to the sin of pride in Dewey’s conception of humility as pertaining to inquiry, it is arrogance that causes us to forget, neglect, or deny context.²³ Solymosi begins to address this issue with his use of CE . But he does not go far enough to consider recognition of context as it works against arrogance and the trap of incentive salience bred by dopamine democracy.

Arrogance is a vice that causes our ignorance of context, which leads to inquiring badly or not at all. Most often it is a poor tool. Ignoring context is what Dewey names the analytic fallacy. “It is found wherever the distinctions or elements that are discriminated are treated as if they were final and self-sufficient. The result is invariably some desiccation and atomizing of the world in which we live or of ourselves.”²⁴ Arrogance is ignorance or denial of how our inquiry and results of inquiry are part of an expansive context of inquiry. Humility helps prevent the intellectual conceit of private wisdom in which we neglect or ignore the history of thought as it contributes to the background and selective interests of our inquiry.²⁵ Neuropragmatism, with its stress on situatedness, is well-positioned to be a humble form of inquiry. Inquiring with humility reminds us that we are dissecting our experience in a specific way within a context. Dewey warns that conceit or arrogance distorts our judgment, but he also cautions that humility as self-effacement warps judgment.²⁶ When we overvalue or undervalue inquiry, we disrupt our ability to inquire well. Undervaluing our own inquiry through being overly conscientious of our fallibility, for instance, can cause a paralyzing effect on problem-solving.²⁷ Humility calls for mindfulness of context, but not at the expense of inquiry.

Recognizing our dependence upon context is not resignation to helplessness or selflessness. Humility is not an attitude of fear amid what is outside of our control.²⁸ We should not resign ourselves to dopamine democracy. Through recognition of our ever-incomplete mastery and necessary dependence upon context, we remain open to new ideas and avoid “the conceit of learning” that is often communicated in the form of “catch-phrases, cant terms, familiar propositions.”²⁹ We think beyond both errors of the past that have been mistaken as truth and dangerous, biased beliefs accepted solely on instinct.³⁰ Inquiry with humility aids in

22) *Ibid.*, 14–15.

23) Roberts and Wood consider arrogance as “a disposition to “infer” some illicit entitlement from a supposition of one’s superiority, and to think, act, and feel on the basis of that claim.” Robert C. Roberts and William Jay Wood, *Intellectual Virtues: An Essay in Regulative Epistemology* (London and New York: Oxford University Press, 2007), 243, <https://doi.org/10.1093/acprof:oso/9780199283675.001.0001>.

24) Dewey, “Context and Thought,” 6–7.

25) John Dewey, “Justice Holmes and the Liberal Mind,” [1927], in *The Later Works of John Dewey, 1925–1953: 1927–1928, Essays, Reviews, Miscellany, and “Impressions of Soviet Russia,”* vol. 3, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 179.

26) John Dewey, *The Later Works of John Dewey, 1925–1953: 1932, Ethics*, vol. 7, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 297.

27) Dewey, *Ethics*, 259.

28) John Dewey, “Religion versus the Religious,” [1933] in *The Later Works of John Dewey, 1925–1953: 1933–1934, Essays, Reviews, Miscellany, and A Common Faith*, vol. 9, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 18.

29) John Dewey, *How We Think* [1910], in *The Middle Works of John Dewey, 1899–1924, Journal Articles, Book Reviews, Miscellany in the 1910–1911 Period, and How We Think*, vol. 6, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 319.

30) John Dewey, *Reconstruction in Philosophy* [1920], in *The Middle Works of John Dewey, 1899–1924: Essays, Miscellany, and Reconstruction in Philosophy Published during 1920*, vol. 12, *Collected Works of John Dewey*, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 99.

disallowing us from overgeneralization or universalization of our methods and conclusions. A humble attitude prevents us from freezing “the quotidian truths relevant to the problems that emerge in [our] own background of culture into eternal truths inherent in the very nature of things.”³¹ Humility helps us recognize the vastness of experience, while also facilitating focus on the contextual nature of inquiry and its results. Dewey is correct not to limit humility to knowing, for example as what has been deemed intellectual or epistemic humility. Humility pertains to inquiring as a *process*, which expands beyond the limited scope of knowledge. For Dewey, humility is an instrument applied throughout what he calls the pattern of inquiry, which is experiential, which includes what may be termed the epistemic, the ethical, and the aesthetic, but only when categorized as such. Outlining the pattern of inquiry as he describes it aids in understanding how humility operates as a tool that benefits neuropragmatism as we work against dopamine democracy and toward intelligent thought and action.

3. Neuropragmatic Inquiry

Experience is often unproblematic, but when problems occur, we seek to address and remedy them intelligently. Intelligence is the type of interaction that transforms experience by estimating the “possibilities of a situation” and acting in accordance with solutions imagined through inquiry.³² Solymosi suggests intelligence is necessary for combatting dopamine democracy and the problem of incentive salience. To engage with the problems of dopamine democracy intelligently, we must inquire. Inquiry is not something separate from experience, but rather is a function of experience we use to alter and address indeterminate situations. An indeterminate situation, broadly defined, is whatever “perplexes and challenges the mind so that it makes belief at all uncertain.”³³ “Inquiry is the controlled or directed transformation of an indeterminate situation into one that is determinate in its constituent distinctions and relations as to convert elements of the original situation into a unified whole.”³⁴ Humility, in the face of a problem, is our recognition that inquiry not only “begins in it but is controlled by its specific qualitative nature.”³⁵ The indeterminate situation is a condition of inquiry, which is combined with the tools that we bring to bear upon it. These provide context to reflective thought. Inquiry is the set of operations we use in an attempt to remedy the situation so that it becomes unproblematic. This entails determining the problem as it relates to the conditions that we find indeterminate, proposing solutions to the problem, and testing those solutions to make the situation determinate. What Solymosi has stated is that neuropragmatism provides tools to solve the problems of dopamine democracy, so inquiry is a necessary component of neuropragmatism.

31) John Dewey, “Context and Thought,” 13; see also: John Dewey, “An Analysis of Reflective Thought,” [1922], in *The Middle Works of John Dewey, 1899–1924: Journal Articles, Essays, and Miscellany Published in the 1921–1922*, vol. 13, Collected Works of John Dewey, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 67.

32) John Dewey, *The Later Works of John Dewey, 1925–1953: 1929, The Quest for Certainty*, vol. 4, Collected Works of John Dewey, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 170.

33) John Dewey, *How We Think*, in *The Later Works of John Dewey, Volume 8, 1925–1953: 1933, Essays and How We Think, Revised Edition*, vol. 8, Collected Works of John Dewey, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press), 188, <https://doi.org/10.1037/10903-000>.

34) John Dewey, *The Later Works of John Dewey, 1925–1953: 1938, Logic: The Theory of Inquiry*, vol. 12, Collected Works of John Dewey, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 108.

35) John Dewey, “Propositions, Warranted Assertibility, and Truth” [1941], in *The Later Works of John Dewey, 1925–1953: 1939–1941, Essays, Reviews, and Miscellany*, vol. 14, Collected Works of John Dewey ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2008), 181.

To explain the operations of inquiry, Dewey outlines the process as a pattern or phases. The phases of inquiry that Dewey outlines are not intended to be fixed or chronological. Rather, he intends the outline as an analysis that “indicates the logical ‘movements’ involved in critical thought.”³⁶ The phases or movements of critical thought are often repeated, amended or forsaken, and overlap during a given inquiry, but by dividing them in this manner, they are easier to understand as operations that contribute to remedying indeterminate situations. In his analysis of inquiry within the second edition of *How We Think* (1933), Dewey divides inquiry into five phases. These are: suggestion, intellectualization, hypothesis, reasoning, testing.³⁷ Each phase of inquiry affords an opportunity to understand how humility functions within neuropragmatic reflection and increases our capacity for better addressing dopamine democracy as problematic.

Suggestion is the first phase of inquiry. It is marked as a reactionary response to experiencing an indeterminate situation. With suggestion, we conjure an immediate idea without thinking through the problem. As Dewey says, “suggestions just spring up, flash upon us, occur to us.”³⁸ At this phase of reflective thought, we conjecture or guess. There are a variety of guesses, from “happy,” to “wild” or “random.”³⁹ Much of guessing is based upon memories of assertions, past suggestions, and emotional sway.⁴⁰ Gradations of guessing depend upon if and how thought is applied to suggestion.⁴¹ “Thought is, as it were, conduct turned in upon itself and examining its purpose and its conditions, its resources, aids, and difficulties and obstacles.”⁴² Humility applied to suggestion divides poor thought from good thought. Accepting suggestion prematurely is arrogant inquiry. Simply assuming our habits of thought are correct without reflection, and therefore accepting our suggestion as correct without question, means we fail to recognize the context of the problem and the possibilities for solution. When we postpone accepting suggestion as the answer to an indeterminate situation and examine the “facts of the case” and engage in what Dewey calls “analytic observation,” then we initiate inquiry with humility, minding the context of the case to clearly define the problem. In the case of neuropragmatic inquiry, suggestion begins the process of addressing the issues of dopamine democracy, but we must have the wherewithal to pause and reserve judgment regarding the particular problems with which we are dealing. To avoid oversimplifying our indeterminacy, we need to address the situation intelligently rather than rashly or arrogantly.

Intellectualization is the second phase of inquiry. It is the locating and defining of the problem-at-hand based upon analytic observation. We think through what we observe so that we can frame the problem and clearly formulate the question we seek to answer. Through thoughtful observation and determination of the problem, we also determine what constitutes and is valued as data. Dewey calls this process “adjudgment, of appraisal or evaluation.”⁴³ Data is not predetermined or simply given. Rather, what constitutes data is determined through inquiry.⁴⁴ Minding what we observe and select as data as a choice is part of inquiring with humility. Data inform

36) Dewey, “An Analysis of Reflective Thought,” 62.

37) Dewey, *How We Think*, 200.

38) Dewey, *Logic*, 114.

39) Dewey, “An Analysis of Reflective Thought,” 65; *How We Think*, 202; *Logic*, 424; John Dewey, “Valuation and Experimental Knowledge,” [1921], in *The Middle Works of John Dewey, 1899–1924: Journal Articles, Essays, and Miscellany Published in the 1921–1922*, vol. 13, Collected Works of John Dewey, ed. Jo Ann Boydston (Carbondale and Edwardsville: Southern Illinois University Press, 2018), 15.

40) Dewey, *Reconstruction in Philosophy*, 83.

41) For a detailed analysis of guessing, see Mark Tschaeppe, “Gradations of Guessing: Preliminary sketches and suggestions,” *Contemporary Pragmatism* 10 vol. 2, 2013: 135–154, <https://doi.org/10.1163/18758185-90000263>.

42) Dewey, *How We Think*, 201.

43) Dewey, *Logic*, 491.

44) Dewey, “Propositions, Warranted Assertibility, and Truth,” 181.

the facts of the case, which “constitute the terms of the problem, because they are conditions that must be reckoned with or taken account of in any relevant solution that is proposed.”⁴⁵ Determining what constitutes data is one of the greatest challenges posed by dopamine democracy. As Solymosi warns, communication breeds both information and misinformation, and we are often faced with little ability to discern between the two.⁴⁶ Our cultural affordances are part of the problem, as well as part of the solution. This is why humble inquiry is so important to addressing dopamine democracy, especially during intellectualization.

Humility also functions in this phase when we recognize and note the “conditions that constitute the trouble” and alter our approach to the problem by moving from emotional reaction to cognitive reflection.⁴⁷ This assists in moving us past the trap of incentive salience. We must note the dopaminergic triggers utilized by the vehicles of communication and work to reflect upon them rather than falling prey to them. Again, humility involves acknowledging context as the conditions that give rise to problems and provide us with possibilities for solution. These conditions include background knowledge of similar problems and solutions. Additionally, we suspend our belief that our habits of thought are correct by carefully framing questions based upon the problem and its context, rather than asserting a suggested solution immediately.⁴⁸ For instance, the nested levels of causality entailed in incentive salience are complex and require multiple levels of analysis rather than quick or rash judgment. How we formulate our questions about the chains of causality within dopamine democracy requires careful and deliberate consideration.

“The idea of the solution is thus controlled by the diagnosis that has been made.”⁴⁹ Through analytic observation that determines the data or facts of the situation, combined with defining the problem and articulating the question pertaining to the problem, we create the conditions to formulate a guiding idea or hypothesis. “The facts or data set the problem before us, and insight into the problem corrects, modifies, expands the suggestion that originally occurred. In this fashion the suggestion becomes a definite supposition or, stated more technically, a hypothesis.”⁵⁰ A hypothesis as a guiding idea provides us with expectations concerning possibilities of solving the problem.⁵¹ This phase, combined with suggestion and intellectualization, embodies what Charles Peirce calls abduction, which is the inferential process by which we formulate hypotheses.⁵² Humility in abduction pertains to how well we observe and use the methods and techniques of those who have worked on similar problems, rather than assuming our problem is wholly unique or cannot be helped by the past work of others. But humility also entails not assuming our present problem as simply the same as past problems. The question of how relevant past problems are to the present problem is one to be addressed openly when formulating, reasoning through, and testing the hypothesis.⁵³ Values of past remedies to similar problems then become hypothetical values rather than fixed solutions to the new problem.⁵⁴ In complicated cases, Dewey notes that the good inquirer “proceeds to act upon [the supported method of remedy] tentatively rather

45) Dewey, *Logic*, 113.

46) Solymosi, “Affording Our Culture,” 61–62.

47) Dewey, *How We Think*, 202.

48) Dewey, *Logic*, 487.

49) Dewey, *How We Think*, 203.

50) *Ibid.*, 202.

51) Dewey, *Logic*, 113.

52) For more on Peirce, abduction, and the development of hypothesis, see Mark Tschaepe, “Guessing and Abduction,” *Transactions of the Charles Peirce Society* 50, vol. 1 (2014): 115–138, <https://doi.org/10.2979/trancharpeirsoc.50.1.115>.

53) Dewey, “An Analysis of Reflective Thought,” 67.

54) Dewey, “Valuation and Experimental Knowledge,” 11.

than decisively.”⁵⁵ The good inquirer is led by the hypothesis while open to further observation, remaining receptive to more facts or data. To arrogantly put forth a hypothesis would be to treat it as if it is beyond revision. Dewey warns that failure to remain flexible regarding hypotheses is as close to “a death warrant” that we reach when inquiring poorly.⁵⁶ With humility, we narrow our hypothesis based upon the work of suggestion and intellectualization, but the guiding idea remains open. We recognize the context of the situation and the fact that our observation and insight are fallible. There is a possibility that we do not have the relevant facts or that our hypothesis is inadequate. This does not disable our inquiry but strengthens our ability to adjust our hypothesis in accord with the situation’s conditions to improve our investigation. Dopamine democracy is ever-expanding and transforming as we continue to transact within it.⁵⁷ This means that neuropragmatic inquiry must be able to adapt to the challenges posed by its shifts. Each permutation poses a new set of problems, but problems for which we have precedence.

Part of formulating and testing hypotheses is the fourth phase of inquiry: reasoning. This is the process we use to develop our ideas by thinking through probable issues and outcomes of implementing a hypothesis as a solution. “Conjectures that seem plausible at first sight are often found unfit or even absurd when their full consequences are traced out.”⁵⁸ We not only narrow our hypothesis, but we think through what might be problematic about the hypothesis and adjust accordingly. Reasoning “depends not only upon the prior experience and special education of the individual who is carrying on the inquiry, but also upon the state of culture and science of the age and place.”⁵⁹ A benefit of neuropragmatic inquiry is the acknowledgment of our transactional experience as continually contributing to our reasoning. This means that the 9E’s are influenced by the context through which they function just as they influence their context. Science and culture supply neuropragmatism with tools, whilst we critique and influence science and culture through inquiry. When we remain mindful of the contingency of our reasoning upon our context, including what is currently known and unknown, we reason with humility. This helps prevent the conceit of reasoning that denies our knowledge and our ignorance. By acknowledging both knowledge *and* ignorance of dopamine democracy, we become better equipped to seek solutions to problems on multiple levels, such as the neurobiological, the sociocultural, and otherwise.

Reasoning is considering what would likely result if the suggested hypothesis is followed. Testing the hypothesis by action is the fifth phase of inquiry wherein we engage in “some kind of testing by overt action to give experimental corroboration, or verification, of the conjectural item.”⁶⁰ Testing our working hypothesis is based in the particulars of our observation, including how we have framed the problem, our criteria for selecting data or the facts of the case, and the context of experimentation.⁶¹ Humility in experimentation is remaining open to revision of our hypothesis based upon new data. Arrogant experimentation does not constitute authentic or genuine testing of a hypothesis. Overwhelming pride prevents active and open criticism based upon the honest procedures and results of experimentation. This may involve recognizing only successes within experiments and rejecting – or ignoring – failures. In contrast, Dewey notes that the “person who really thinks” learns from their failures as they learn from their successes.⁶² To the humble inquirer, failure provides

55) Dewey, *How We Think*, 203.

56) Dewey, *Logic*, 501.

57) Consider the ever-expanding and transforming algorithms of search engines, such as Google.

58) Dewey, *How We Think*, 204.

59) *Ibid.*

60) Dewey, *How We Think*, 205.

61) Dewey, *Logic*, 420–421.

62) Dewey, *How We Think*, 206.

tools to further analyze and modify the present hypothesis. Without openness and receptivity to failure and its context, such revision is at best discouraged and at worst impossible. Humility provides us with a disposition that welcomes errors and mistakes as sources for improving inquiry rather than for annoyance or mere frustration. Experimentation with humility is honestly testing our ideas while embracing the risks and consequences that follow. This includes acknowledging when the consequences of our proposed solution do not adequately solve the problem or cause previously unforeseen problems. Humble experimentation is experimentation open to revision, replacement, or returning to the drawing board with what we have learned. As neuropragmatists, we should welcome our failures as tools that help us amend our hypotheses and the techniques we use to address and dismantle dopamine democracy.

4. Conclusion

Dopamine democracy is a difficult milieu to navigate and provides many pitfalls to inquiry, even to the most noble-minded and virtuous investigator. Neuropragmatism is a resource from which to draw useful tools for combatting the effects of dopamine democracy, such as incentive salience and misinformation. The CE perspective and the 9 E's of cognition supply a foundation from which to begin addressing these problems. Cultural affordances are important for developing cognitive strategies to be implemented through neuropragmatic education, but they are also potential hazards. We should avoid plodding along, unaware of their complex and often duplicitous effects. Our cultural affordances constitute both problems and solutions depending upon our understanding and use of them. Some of the tools that cause and sustain dopamine democracy, for instance, may become useful for intellectual growth when repurposed from a neuropragmatic perspective. The next step to improve our understanding of cultural affordances and their roles in dopamine democracy is to provide greater detail to neuropragmatic inquiry. I have sketched an outline of the pattern of inquiry here. Humble inquiry must be at the root of neuropragmatic education or we risk committing hubris in our attempts to develop strategies of intelligent reflection. We must avoid the mistake of replicating dopamine democracy's problems in our attempts at solving them. Humility encourages us to critically reflect upon our neuropragmatic investigations as we engage in them, thus developing better tools to delimit and form solutions to the problems wrought by dopamine democracy.

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