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#5 *Spectres of AI*

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THE ELECTRIC KOOL-AID TURING TEST – PSYCHEDELICS, PHENOMENOLOGY AND AUTOMATED INTELLIGENCE

INTRODUCTION

In May 2018, bestselling author Michael Pollan published a book titled *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*.[1] This new science has been characterized by others as "the psychedelic renaissance",[2] a resurgence of interest in the medical use of a class of psychoactive chemicals including lysergic acid diethylamide (LSD), psilocybin (the active ingredient of magic mushrooms), and dimethyltryptamine (DMT). The renaissance follows a decades-long fallow period for psychedelic research: their prohibition in the United States in the late 1960s effectively halted all investigations until the 1990s,[3] following years of work by activists and advocacy groups.[4] 2014 marked the publication of the first peer-reviewed study on LSD in over forty years,[5] and recently, such notable outlets as *Rolling Stone*[6] and *The*

1 Cp. Michael Pollan, *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*, New York, NY, Penguin Press, 2018.

2 Cp. Ben Sessa, *The Psychedelic Renaissance: Reassessing the Role Of Psychedelic Drugs in 21st Century Psychiatry and Society*, London, Muswell Hill Press, 2012.

3 Cp. Rick Doblin, "Regulation of the Medical Use of Psychedelics and Marijuana", doctoral thesis submitted to Harvard University Committee on Higher Degrees in Public Policy, June 2000, pp. 2–3.

4 Most notably, MAPS, the Multidisciplinary Association for Psychedelic Studies.

5 Cp. Unknown Author, "MAPS Press Release LSD Study Breaks 40 Years of Research Taboo", *MAPS*, 2014. Available at: https://maps.org/research/psilo-lsd/lsd-news-timeline/5205-maps-press-release-lsd-study-breaks-40-years-of-research-taboo [accessed August 1, 2018].

6 Cp. Mat McLelland, "The Psychedelic Miracle: How Some Doctors Are Risking Everything to Unleash the Healing Power of MDMA, Ayahuasca and Other Hallucinogens", *Rolling Stone*, March 9, 2017. Available at: http://www.rollingstone.com/culture/culture-features/the-psychedelic-miracle-128798 [accessed July 5, 2018].

New Yorker[7] have published comprehensive articles on the new wave of psychedelic research. It appears that Pollan's latest book is but one sign among many of a bona fide sea change.

At the time of their ban, the medical potential of LSD and psilocybin was only beginning to be established. First synthesized in 1938 and 1958 respectively,[8] numerous studies conducted in the mid-20th century indicated their efficacy in the treatment of addiction, depression, and related maladies.[9] Other initiatives suggested they give rise to mental health improvements even in absence of a known pathology. The Good Friday Experiment,[10] perhaps the most famous psychedelic study in history, asked whether psilocybin induced mystical experiences in healthy volunteers. All who were treated with psilocybin characterized their encounter as not only mystical, but psychologically beneficial in a general sense.[11] Although psychedelics bear a high degree of stigma, their renaissance has inherited a promising legacy from these early investigations.

Concurrent with the psychedelic revival is a surge of interest in artificial intelligence. The concept of AI dates back to 1955, when the term was coined by computer scientist John McCarthy.[12] Its prehistory includes the work of technologists including Vannevar Bush,[13] Marvin Minsky[14] and Alan Turing, father of the eponymous test for computer consciousness.[15] As with psychedelic research, however, the genesis of AI has been subject to prolonged periods of stagnation due to social and industrial factors. The current wave of AI development may be connected with the rise of massive volumes of data, also known as Big Data: as of 2018, over 2,5 quintillion bytes of data are produced every single day. Over 90 per cent of the world's data was generated in the

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7 Cp. Emily Wit, "The Science of the Psychedelic Renaissance: On Trip Reports from Timothy Leary, Michael Pollan, and Tao Lin", *The New Yorker,* May 29, 2018. Available at: https://www.newyorker.com/books/under-review/the-science-of-the-psychedelic-renaissance [accessed July 15, 2018].

8 Psilocybin occurs naturally in several species of fungus but was first synthetically isolated in a laboratory environment this year.

9 Cp. Matthias Liechti, "Modern Clinical Research on LSD", *Neuropsychopharmacology*, 42, 2017, pp. 2114–2127

10 Cp. Rick Doblin, "The Good Friday Experiment – A Long Term Follow-Up and Methodological Critique", *The Journal of Transpersonal Psychology*, 23 (1), 1991, pp. 1–28.

11 Ibid., pp. 12–13.

12 Cp. Andrew Myer, "Stanford's John McCarthy, seminal figure of artificial intelligence, dies at 84", *Stanford News,* October 25, 2011. Available at: https://news.stanford.edu/news/2011/october/john-mccarthy-obit-102511.html [accessed January 9, 2019].

13 Cp. Vannevar Bush, "As We May Think". *The Atlantic*, July 1945. Available at: https://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/ [accessed January 9, 2019].

14 Cp. Unknown Author, "Marvin Minsky", *MIT Media Lab*, n.d. Available at: https://web.media.mit.edu/~minsky/ [accessed January 9, 2019].

15 Cp. Andrew Hodges, "Alan Turing", *Turing.org,* n.d. Available at: https://www.turing.org.uk/ [accessed January 9, 2019].

past two years alone.[16] This has led to a demand for data-processing techniques that require limited guidance by human. In response, programmers have turned to machine learning algorithms – functions that auto-upgrade or 'learn' to improve themselves in the absence of human supervision.

Machine learning is the basis of contemporary artificial intelligence. Innovation in this arena necessarily expands AI's potential. This is significant for fundamentalists who believe that one day, human mentality will be fully replicated in artificial systems. Some who hold this perspective frequently take the imminence of computer intelligence as an ethical issue. Technology entrepreneur Elon Musk contends that once computers accede to a certain level of intelligence, they will act malevolence toward their human creators. He has described this as mankind's "biggest existential threat".[17] Others embrace AI as an adjunct in human progress: futurist Ray Kurzweil has proposed that humans might one day extend the lifespan of their consciousness by uploading it to digital substrates. Whether understood as an evolutionary boon or plague on humanity, these soaring visions for AI are rooted in the same epistemic presumptions. These include the belief that intelligence may be fabricated in digital systems and that computers can automate both learning and knowledge production. Before the impact of AI is addressed in practice, these axioms must be scrutinized through multiple theoretical and empirical frameworks.

In this paper, I examine interpretative phenomenological analysis as a qualitative method in psychedelic research. I propose that the use of interpretative phenomenology in psychedelic science gives traction to already-existing critiques of the epistemic positions which substantiate AI fundamentalism. If psychedelic drugs do in fact bring forth new insights on the psyche, psychedelic science is poised to inform conceptions about mentality which prevail across various fields of scientific research and practice, including artificial intelligence. In what follows, I will argue that the use of interpretative phenomenology in psychedelic science challenges the aforementioned philosophical precursors to AI.

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16 Cp. Bernard Marr, "How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read", *Forbes*, May 21, 2018. Available at: https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#271c7e8a60ba [accessed January 9, 2019].

17 Maureen Dowd, "Elon Musk's Billion-Dollar Crusade To Stop The A.I. Apocalypse", *VanityFair*, March 26, 2017. Available at https://www.vanityfair.com/news/2017/03/elon-musk-billion-dollar-crusade-to-stop-ai-space-x [Accessed January 9 2019]

Interpretative Phenomenological Analysis In Psychedelic Science

While phenomenological interpretation is deployed across several arenas of mental health research,[18] it is notable in psychedelic science for its popularity. Qualitative investigations constitute a small, burgeoning movement within psychedelic research, and interpretative phenomenological analysis has become conspicuous within its scope.[19] The character of psychedelic therapy calls for a methodological commitment to a broad, holistic understanding of individual research factors – a perspective that affirms their profound context-sensitivity. Psychedelic research also benefits from a self-reflexive acknowledgement of scholarly bias. Both of these principles are enshrined within interpretative phenomenological analysis.

In her book *Introducing Qualitative Research in Psychology*, psychologist Carla Willig explains as much, writing that in interpretative phenomenological analysis,

> "understanding cannot take place without us making some preliminary assumptions about the meaning of what we are trying to understand. There is a circularity built into the process of meaning-making that is referred to as the 'hermeneutic circle'. This means that 'parts can only be understood from an understanding of the whole, [and] that the whole can only be understood from an understanding of the parts'."[20]

The need for such a deep entwinement between researchers, subjects and data is also suggested by Pollan. In *How to Change Your Mind*, he notes that the various causes and effects of psychedelics fundamentally resist isolation "whether from the context in which [the treatment] is administered, the presence of the therapists involved, or the volunteer's expectations".[21] The psychiatric advantage of psychedelics evidently relies on a sort of Gestalt characteristic wherein the therapeutic encounter is felt to supersede the sum of its parts. In turn, the medically effective properties of psychedelic substances may not resemble discrete research factors predetermined by scientists, and psychedelic researchers must consider the possibility that the outcome of their trials

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18 Cp. Carla Willig, *Introducing Qualitative Research in Psychology*, New York NY, Open University Press, 2013.

19 The psychedelic bibliography maintained by the Multidisciplinary Association for Psychedelics lists twenty-six peer-reviewed article which reference phenomenology, and this is not an exhaustive list. Cp. "Psychedelic Bibliography", *MAPS*, no year. Available at: https://maps.org/resources/psychedelic-bibliography [accessed January 9, 2019].

20 Carla Willig, *Introducing Qualitative Research in Psychology*, p. 259.

21 Michael Pollan, *How to Change Your Mind*, p. 333.

will bear little resemblance to their expectations. This dynamic makes Willig's "circular movements" between presupposition and interpretation highly useful toward the most accurate understanding of psychedelic medicine.

Phrased differently, the Gestalt nature of the psychedelic experience implies its resistance to hermeneutic practices based on the rote extraction and examination of parts taken as separate from the whole. Meanwhile, phenomenological analysis was developed to address the irreducibility of experience and context to isolated variables, highlighting it as a uniquely well-suited technique in this arena. This rationale is taken up by psychedelic psychologists Stuart Turton, Robin Carhart-Harris, and David Nutt. Noting the constraints inherent to quantitative and measurement-based methods, they offer that interpretative phenomenological analysis is instead "the most appropriate to use to explore human experience" in their work.[22]

The fact that they portray their research as an exploration of human experience not necessarily restricted to illness or suffering is significant: Nutt, Carhart-Harris and Turton count among a number of psychedelic researchers who view these substances not only as palliatives,[23] but also as powerful tools for the exploration of the psyche. Stanislav Grof, a founder of transpersonal psychology, observed that "the potential significance of LSD and other psychedelics for psychiatry and psychology was comparable to the value the microscope has for biology or the telescope has for astronomy".[24] This is reflected in the etymology of the word: translated from Ancient Greek, "psychedelic" may mean either "mind-manifesting" or "mind-revealing". Psychedelic substances are quite literally defined by their capacity to provide insight on the mind. Thus research performed on them stands not only to impact treatment, but also to furnish new perspectives on healthy, high-functioning minds.

Interpretative phenomenological analysis – along with similar methodologies in which integration, subjectivity, and self-reflexivity serve as organizing principles – may be necessary to bring these perspectives to light. Here, information and interpretation take multiple directions as they flow between patients, scientists, and other interested parties. Significantly, the methods which may be most essential to

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[22] S. Turton, D.J. Nutt and R.L. Carhart-Harris, "A Qualitative Report on the Subjective Experience of Intravenous Psilocybin Administered in an fMRI Environment", *Current Drug Abuse Reviews*, 7, 2014, pp. 117–127, here: p. 119.

[23] These include Ben Sessa, Robin Carhart-Harris, David Nutt, Thomas B. Roberts, Neşe Devenot, and many more.

[24] Unknown Author, "Grof, Dr Stanislav", *All About Heaven*, n.d. Available at: https://allaboutheaven.org/sources/669/147/grof-dr-stanislav [accessed August 17, 2018].

psychedelic science are grounded in philosophies which challenge the epistemic assumptions of AI. Among these assumptions is logical positivism: the concept of the fully-computable mind implies that minds exist as manifest positivities wholly available to computational logic. Another is that knowledge is gained via induction, the generalization of facts from a limited data source. In recent years, scholars have named the uncritical acceptance of a positivist and inductive ground of knowledge among other philosophical missteps of AI fundamentalism. Rather than staging an exclusively theoretical intervention in affirmation of these critiques, I instead offer psychedelic science as a means to extend this conversation into new substantive territory.

AGAINST AUTOMATED INTELLIGENCE

Media philosopher Matteo Pasquinelli is one among the wide array of scholars committed to interrogating AI. In his article "Machines That Morph Logic: Neural Networks and the Distorted Automation of Intelligence as Statistical Inference", Pasquinelli interrogates the notion that machine-automated inductive procedures can be likened to 'learning' in any meaningful sense. Here he introduces this argument by describing the difference between the logical procedures of induction, deduction, and abduction:

> "By induction, we conclude that facts, similar to observed facts, are true in cases not examined. By hypothesis [a function of abduction], we conclude the existence of a fact quite different from anything observed, from which, according to known laws, something observed would necessarily result. The former is reasoning from particulars to the general law; the latter, from effect to cause. The former classifies, the latter explains."[25]

Departing from there, Pasquinelli writes that neural network inventor Frank Rosenblatt intended his programs to automate complex forms of induction, not abduction. While the machinations of neural networks may occasionally resemble abduction, they do not surpass the basic restrictions of this original design. As Pasquinelli puts it:

> "The complex statistical induction that is performed by neural networks gets close to a form of weak abduction, where new categories and ideas loom on the horizon, but it

[25] Matteo Pasquinelli, "Machines That Morph Logic: Neural Networks and the Distorted Automation of Intelligence As Statistical Inference", *Glass Bead*, 2017. Available at: http://www.glass-bead.org/article/machines-that-morph-logic/?lang=enview [accessed July 5, 2018].

> appears invention and creativity are far from being fully automated […] if pattern recognition via statistical induction is the most accurate descriptor of what is popularly termed Artificial Intelligence, the distorting effects of statistical induction on collective perception, intelligence and governance (over-fitting, apophenia, algorithmic bias, 'deep dreaming', etc.) are yet to be fully understood."[26]

Pasquinelli acknowledges that the production of information via inductive generalization is an essential operation of machine learning. Computer scientist Pedro Domingos echoes this: "The fundamental goal of machine learning", Domingos says, "is to *generalize* beyond the examples in the training set."[27] The principle goal of a machine learning program is to be able to inferentially predict or describe phenomena prior to their actual existence. It is through these functions that they become positively manifest.

By this reading, it appears that machine learning programmers should not apply a priori interpretative frameworks to the data they use to develop new programs. Such prior considerations, however, are technical requirements. Domingos writes that machine learning programs "must embody some knowledge or assumptions beyond the data [they are] given in order to generalize beyond it."[28] These embodied assumptions impose certain limitations on the final data output, even if the iterative processes to which these outputs have been subject obscures their origins. As he observes, machine learning programs must anticipate heterogeneity in the data they will process; therefore their original preconceptions should be broad and inclusive. For him, they typically include "smoothness, similar examples having similar classes, limited dependences, or limited complexity"[29], and he offers that the effectiveness of these allegedly universal assumptions contributes to the overall success of machine learning as a digital method.

In spite of their usefulness, however, these assumptions have unintended side effects – although such eventualities may not be easily traceable to their root. Facility with philosophical reasoning can be helpful toward detecting the epistemic biases intrinsic to machine learning systems. In his book *Machine Learners: Archaeology of a Data Practice*, media theorist Adrian Mackenzie draws equally from computer science and philosophy to claim that the assumptions codified in

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[26] Ibid.

[27] Pedro Domingos, "A Few Useful Things to Know About Machine Learning", *Communications of the ACM*, 55 (10), 2012, pp. 78–87, here: p. 79, emphasis in original.

[28] Ibid., p. 80.

[29] Ibid.

machine learning systems cause ontological transformations in their subjects.[30] Naming philosophers Michel Foucault and Ian Hacking as his influences, Mackenzie is specifically concerned with the impact of statistical probability and metrical comparison on the subjects of automated inference, referencing the history of naïve Bayes classification and linear regression[31] to argue that machine learning output occupies "a reality that had already introjected statistical realities at least a century earlier".[32] For this reason, the products of machine learning bear the ontological signature of their ancestors. According to Mackenzie, the knowledge produced by machine learning is not a historical inevitability, even in the ostensibly objective domains of mathematics and computer science.

Regardless of whether they are the products of ontological alteration or not, it is at least true that the data output of machine learners are restricted by the presuppositions whose necessity is recounted by Pedro Domingos. Those identified by Domingos may indeed be safe bets in most cases. However, they demand close attention in the context of systems which attempt to simulate the complex processes denoted by the word 'intelligence', as these assumptions reify and naturalize biases in the guise of scientific objectivity. Herein lies the main concern of Matteo Pasquinelli: the restrictions at the heart of machine learning place artificial 'intelligence' within an epistemic and ontological order very much separate from that of non-automated intelligence. Although their functions may resemble a weak form of abduction, they never entirely supersede induction to achieve the capacity to, for example, explain unprecedented phenomena and generate new hypotheses. Having listed scientific discovery and the development of metaphor as indicators of genuine intelligence, Pasquinelli implies that theory and praxis from fields outside of computer science are poised to comment on the structural belief in artificial intelligence. The reasoning behind the application of non-computational methods in psychedelic science, and particularly interpretative phenomenological analysis, is fruitful territory for such interdisciplinary commentary.

PHENOMENOLOGY IN ITS OWN WORDS

Thoughtful reflections on interpretative phenomenological analyses have already been written by a number of psychedelic scholars.

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30 Cp. Adrian Mackenzie, *Machine Learners: The Archaeology of a Data Practice*, London, Cambridge, MA, The MIT Press, 2017.

31 These mathematical procedures are foundational to machine learning systems.

32 Cp. Adrian Mackenzie, *Machine Learners*, pp. 122–123.

Recently published studies on the medical use of psilocybin, LSD, and ibogaine include thorough exegeses of the reasoning behind their use of this approach. In each of these articles, researchers describe the specific hermeneutic requirements posed by qualitative psychedelic research data in order to demonstrate the suitability of interpretative phenomenological analysis for their endeavor. An article on ibogaine – a chemical notable for its use in treating addiction – claims that interpretative phenomenology was used because "both researchers and participants are unable to precisely describe these subjective experiences without simultaneously interpreting them based on past knowledge and personal experiences."[33] Meanwhile, in a study investigating psilocybin for its potential to relieve duress associated with cancer, researchers conclude that interpretative phenomenological analysis "revealed a complex, multilevel set of processes", in which patients felt the treatment to be "relationally embedded, physically embodied, affect laden, deeply meaningful, and biographically instantiated".[34] It is notable that in this initiative, researchers derived categories and recurring motifs based on their reading of these reports. These classifiers were essential to their analytic conclusions. While classification can be and frequently is performed by automated systems, these procedures are distinct from machinic classification in that investigators emphasized self-awareness of their unique bias and subject position. Such decentering of objectivity is standard in interpretative phenomenological analysis: the producers of knowledge do not cast themselves as free of bias (as an AI system might), but rather as bearing subject positionalities themselves. This attitude tacitly affirms that researchers do not perceive themselves to be epistemically or ontologically separate from their subjects.

Profoundly reliant on subjective and relational dynamics, interpretative phenomenology is a natural foil to the logic of quantitative and computational approaches. To be sure, however, qualitative methodologies occupy a minority position within the psychedelic renaissance, and these methods are almost always offered as complements to computational techniques. In her 2017 presentation "The Role of Poetic Language in Psychedelic Experience", psychedelic researcher Neşe Devenot explains that

> "most psychedelic research to date has been quantitative and

[33] Eduardo Schenberg et al., "A Phenomenological Analysis of the Subjective Experience Elicited By Ibogaine In The Context of A Drug Dependence Treatment", *Journal of Psychedelic Studies*, 1 (2), 2017, pp. 74–83, here: p. 75.

[34] Cp. Alexander B. Belser et al., "Patient Experiences of Psilocybin-Assisted Psychotherapy: An Interpretive Phenomenological Approach", *Journal of Humanistic Psychology*, 0 (0), 2017, pp. 1–35, here: p. 27.

> nomothetic. These studies test for pre-established outcome measures, like levels of depression or anxiety, and they generalize trends across multiple cases through statistical analysis. In recent years, researchers including Alexander Belser and Gabrielle Agin-Liebes have argued for the importance of complementing these quantitative studies with more qualitative, idiographic research into the narrative content of individual psychedelic experiences."[35]

The generalization of trends using statistical analysis is a task well fit for machine learning systems – and so it should be: no psychedelic researcher argues against digital methods overall. Advocacy for qualitative and idiographic supplements that emerged after the psychedelic renaissance had already integrated contemporary digital methods. To be sure, the use of qualitative methods has not come at the expense of the precision and measurability afforded by quantia and computation, and it is unlikely that this will ever happen. Still, an examination of the fields of psychedelic science and critical theory of technology would suggest that the former does not necessarily share the skeptical perspective on automated intelligence that prevails in the latter.

These groups, however, are united by their deep investment in ontological and phenomenological uniqueness, whether in the context of human intelligence, the psyche, or the psychiatric action of chemical compounds. Adrian Mackenzie writes that although machine learning systems are not always based on probabilistic models, they "relate to themselves and the data as populations defined by probability distributions".[36] This positionality elides individual character by reducing subjects to a series of statistical deviations and averages, binding them to the finitude of what Pasquinelli has termed "semiotic planes" – the limits of which are transcended in the production of metaphor and scientific discovery, among other acts constitutive of true intelligence.

In a notable overlap with Pasquinelli, Devenot identifies the invocation of metaphor by those under the influence of psychedelics as a justification for the use of non-computational interpretative techniques:

> "Linguist R. S. Sharma writes that the fundamental function of poetic language is 'to convert denotation into connotation, the language of [objective] reference into that of feeling and mood'. Poetry employs creative metaphors to

[35] Neşe Devenot, "The Role of Poetic Language In Psychedelic Science Research", poster presented at MAPS Psychedelic Science Conference, April 19–24, 2017.

[36] Adrian Mackenzie, *Machine Learners*, p. 123.

> communicate subtle nuances of subjective experience, and the poetic transfer of meaning inherent to metaphor-making constitutes a universal linguistic device for communicating novel and unprecedented experiences. In the process of verbalizing the interiorized effects of moderate- to high-dose psychedelics, poetic language and creative metaphors are often evoked spontaneously. Since scholars of poetry are trained to discern meaning in non-ordinary language, literary scholars are well positioned to make meaningful contributions in the context of qualitative research that seeks to determine the significance of psychedelic trip reports."[37]

In the same way that literary scholars may use their humanistic training to contribute to psychedelic research, I believe that the use of interpretative phenomenological analysis allows psychedelic scientists to break through semiotic restrictions and resist the ontological distortion of intelligence in automated systems. The use of idiographic, hypothesis-generating methodology leads to insights genuinely indicative of intelligence: a power capable of rupturing signification so profoundly that it calls for the revisitation of epistemic assumptions once taken for granted – including those which underscore the very concept of the computable mind.

Conclusion: Acid Tests and Turing Tests

In his 1968 book *The Electric Kool-Aid Acid Test*, writer Tom Wolfe describes Ken Kesey's procedure for spreading the psychedelic gospel: the titular test refers to a practical joke in which Kesey would lace bowls of Kool-Aid with LSD, generally unbeknownst to those who imbibed.[38] Today, psychedelic scholars work to distance their research from the reputation earned by such dangerous practices. Orthodoxy governs the field: psychedelic scholars see these chemicals not as means of escape from social and psychological grounds, but as means toward increased quality of life, including, especially, relief from mental health afflictions. That being said, the fact that the landscape of psychedelic science is so underexplored means that it will be difficult if not impossible to predict what sorts of illuminations it will furnish to our understanding of human conscious.

Amidst the accelerating spread of digital technologies we are better able to confirm the viability of Alan Turing's dream of a fully-computable world. Matteo Pasquinelli offers that although Turing aspired to automate human intelligence, "it would be a sweet paradox

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37 Neşe Devenot, "The Role of Poetic Language in Psychedelic Science Research".

38 Cp. Tom Wolfe, *The Electric Kool Aid Acid Test*, New York, NY Farrar Strauss and Giroux, 1968.

to see the Turing machine that was born as *Gedankenexperiment* to demonstrate the incompleteness of mathematics aspiring to describe an exhaustive paradigm of intelligence (as the Turing test is often understood)".[39] The inventor himself cannot be consulted for a reply to this – although even if Pasquinelli does not believe in his dream, Turing may at least take heart in the thought that his innovations continue to open up new horizons for knowledge.

In the context of artificial intelligence, a totalizing program for computation forecloses the possibility of uncomputable dimensions to the mind. Regardless of whether this is accurate or not, when this presumption determines the course of technological progress, it appears suspiciously close to the status of objective reality or scientific fact. While psychedelic studies is far from the only discipline poised to intervene in this destructive program, its demand for sensemaking hermeneutics and the destabilizing of objective measures – those qualities which have endeared interpretative phenomenological analysis to researchers – renders it highly well-fit to the task. This paradigm may come to indicate that computers will never quite render humanity as well as humans do.

[39] Matteo Pasquinelli, "Machines That Morph Logic".