

Polymorph Wants a Cracker? Is AI an Inventor or “Stochastic Parrot” Hacker?

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Abstract

This study explores the United States Court of Appeals for the Federal Circuit case *Thaler v. Vidal* (2022), which ruled that artificial intelligence cannot be classified as an “inventor,” rendering AI ineligible for patenting. Through an exploration of rhetorical mystification and demystification of AI, arguments presented by Plaintiff Stephen Thaler will be contrasted with arguments presented by Appellant Katherine K. Vidal. Arguments will be charted according to rhetorical and linguistic theorist Kenneth Burke’s model of dramatism, featuring twenty possible pentadic ratio pairings of terms including scene, act, agent, agency, and purpose. For example, a scene/agent ratio casts a different meaning than does an act/purpose ratio. Of special note is how a repositioning of emphasis on these pentadic terms inscribes the way in which artificial intelligence is conceptualized and codified within legal spheres—whether it invents or merely imitates.

Keywords: artificial intelligence, dramatistic pentad, demystification/mystification, imitation, invention

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Introduction

Is AI an inventor? Or does intelligence created artificially simply parrot the data input by its designers and trainers, albeit in recombinant, algorithmic ways? More specifically, can AI be designated as an author of a created work, thereby rendering it eligible for patent application?

The purpose of this study is to provide a template for determining whether artificial intelligence, in the form of a painting created by scientist Stephen Thaler's Creativity Machine, constitutes authorship. Via a rhetorical examination of the United States Court of Appeals for the Federal Circuit's decision (2022), in *Thaler v. Vidal*, the notion of what constitutes invention versus mimicry will be elucidated. The case will be treated as an exemplar of the arguments involving how artificial intelligence is defined, legally codified, and rhetorically managed.

At the center of the controversy is a painting generated by Stephen Thaler's Creativity Machine. Titled "A Recent Entrance to Paradise," Plaintiff-Appellant Thaler claims that the painting is the original work of Creativity Machine and, therefore, should be eligible for patenting under the auspices of patent protection. Opposing Thaler's claim is Defendants-Appellees Katherine K. Vidal, Under Secretary of Commerce For Intellectual Property and Director of the United States Patent and Trademark Office.

The following are the research questions:

RQ1: How does language cast the role of artificial intelligence as imitator or inventor?

RQ2: What are the rhetorical challenges of codifying artificial intelligence in a legal domain?

Methodology

To analyze the United States Court of Appeals Opinion for the Federal Circuit in *Thaler v. Vidal I* I formulate my review according to rhetorical theorist Kenneth Burke's dramatic pentad.¹ Known as a word artist, Burke emphasizes the dynamic power of language to engage or alienate. Though the five elements of Burke's model may initially appear simply as a journalist's incisive who, what, when, why, where, and how questions, three features distinguish the model.

Linguistic DNA is the first feature distinguishing Burke's model. Only the words in the rhetorical artifact are fair game for analysis. Paraphrasing is not allowed, concordant with the belief that one's own words best represent the authentic, unfiltered worldview of the rhetor. Paraphrasing or otherwise substituting another's interpretation skews the author's power of verbal voice and choice. Much as a detective would not mar a crime scene by tracking their own footprints over it, a rhetorical investigation using dramatism preserves the integrity of the persuader's verbal voiceprints. Hence the analyst selects a rhetorical artifact (such as a court transcript) and codes words in the artifact into the five categories of scene, act, agent, agency, and purpose.

Scene codes contextual elements, including where and when, letting us "see" or imagine the setting. Act represents purposeful activity, typically designated by verbs. Agent involves

¹Burke's method is introduced and described in *A Grammar of Motives*.

character prototypes, delineating who is taking the action, including any descriptors such as demographic, psychographic, physical appearance, and roles or titles. Agency reveals how the act is accomplished. Purpose asks why, an indices of the rhetor's goal. (Attitude was later added by Burke as an additional consideration, which could include mood or climate of the rhetor's meaning and method.)

Rhetorical ratio is the second defining feature of Burke's model. Once coding has been accomplished for each of the pentadic terms, these words are sorted according to which terms are strongest—which words predominate. To establish a rhetorical ratio a pairing is made between any of the ten possible pairings of scene, act, agent, agency, and purpose. Reversing the order of the pairing creates another ten possibilities, for a total of twenty. The recombinant results include:

Table 1

Rhetorical Ratios

Scene-Act	Scene-Agent	Scene-Agency	Scene-Purpose
Act-Agent	Act-Agency	Act-Scene	Act-Purpose
Agent-Act	Agent-Agency	Agent-Scene	Agent-Purpose
Agency-Act	Agency-Agent	Agency-Scene	Agency-Purpose
Purpose-Act	Purpose-Agent	Purpose-Agency	Purpose-Scene

Pentadic philosophy is the third distinguishing feature of Burke's model. The predominant ratio determined by coding the five terms then is matched to a corresponding philosophy, said to reveal the rhetor's worldview or ideology. Scene is correlated with materialism, act is correlated with realism, agent is correlated with idealism, agency is correlated with pragmatism, and purpose is correlated with mysticism. Focusing on one ratio rather than another can and does have perceptual, interpretive, and actional consequences. It provides a frame through which the world is seen, engaged, and acted upon. In short, the pentad assigns priorities to possibilities, highlighting some and diminishing or even obscuring others.

Analysis

Scene

Scene refers to contextual considerations. Thaler's scene is mapped by present and futuristic contexts that transcend the bounds of what we consider invention and inventor. The inventory story is of what might be.

Thaler draws upon the significance of scene: "Thaler emphasizes that the term 'inventor' must be interpreted with attention to the 'context in which that language is used and the broader context of the statute as a whole'" (p. 9).²

The Court's scene materializes historically, a circumference of precedent, tradition, continuity, and commonality. Precedential Opinions cited include *Univ. of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften* (2013) and *Beech Aircraft Corp. v. EDO Corp* (1993).

² Page #s cited in this manuscript refer to the Court Transcript in *Thaler v. Vidal* (2022).

Act

Thaler ousts himself from the act, stipulating his lack of contribution to what was created by “Creativity Machine,” claiming that “any person having skill in the art could have taken DABUS’ output and reduced the ideas in the applications to practice” (p. 3), while the Court labels “putative inventions” (p. 3).

Thaler argues that since a non-human entity may infringe a patent, it also should be regarded that such an entity could also invent something worthy of patent recognition (p. 8). The Court, however, does not equate infringing with inventing: “That non-humans may infringe patents does not tell us anything about whether non-humans may also be inventors of patents” (p. 8).

Agent

Use of agentic terms invoked in Thaler’s argument include “Creativity Machine” and DABUS (Device for the autonomous Bootstrapping of Unified Sentience). Thaler’s description of DABUS is “a collection of source code or programming and a software program” (p. 3), assigning the role of agent as “sole inventor” (p. 3). This program also entails “a particular type of connectionist artificial intelligence” (p. 4).

The Court further distinguishes agent from act, codifying the rhetorical separation of the two: A Congressional definition is cited as an individual being distinct from a list of artificial entities (p. 6). Even so, there is a caveat in the clause cited by Stark as the term “individual” is used “to indicate natural persons *unless other noted*” (p. 7) (*italics mine*). The rhetorical hedge continues with *unless* (*italics mine*) Congress intended a different reading of the definition.

Agentic terms invoked in the Court’s Opinion include the Patent and Trademark’s Office (PTO) limitation of inventor as “natural persons” or “human beings” (p. 5). Also included are the terms “individuals” and “joint individuals” (p. 6), recognizing the possibilities of sole or collaborative efforts. Collaborative efforts may include corporations, companies, associations, firms, partnerships, societies, and joint stock companies. Another agentic argument arises through a reference to personal pronouns, noting that the Patent Act refers to “himself” and “herself,” rather than to “it” (p. 7).

Agency

Thaler’s argument that a machine should be qualified to be an inventor is this: “Thaler contends that AI software programs must qualify as inventors because otherwise patentability would depend on ‘the manner in which the invention was made’” (p. 8). Here, Thaler directs attention to agent as the key term, rather than agency. The means or method, according to Thaler, are not as significant as the creator-agent. The Court responds that “This statutory provision related to *how* an invention is made and does not trump a provision that specifically addresses *who* may be an inventor” (pp. 7-8).

Purpose

Thaler argues from the vantage point of AI design and programming, contending that the very essence of artificial intelligence is the power of invention—to view AI merely as a

subservient task master is to miss its more vital potential as a creator. If it only does what humans can do yet in a faster manner then we are missing out on what it truly can achieve—beyond human capacity and caprice.

Thaler's argument based on purpose is refuted by the Court on the grounds of speculative-driven policy projections enshrouded in vagueness: "Thaler argues that invention generated by AI should be patentable in order to encourage innovation and public disclosure" (p. 10).

Results/Discussion

Dramatistic Ratio

The Court is not persuaded re Appellant's arguments, "Thaler directs us to several provisions of the Patent Act as supposed support for his position that 'inventor' should be broadly read to include AI software, but each fails to persuade" (p. 7). Is it that Thaler's argument does not persuade or is it that the Court has unswervingly locked itself into an emphasis on the pentadic term agent defined as a human, precluding any other conception of what an agent might become in the artificial intelligence realm?

Not only does the Court rely heavily on agentic terms in its decision, it considers these as paramount in its decision, providing an explicit rationale. Justification includes both precedent and practicality. From the outset Judge Stark declares the case stasis: "This case presents the question of who, or what, can be an inventor," (p. 2) subsequently affirming it as the "sole" case issue (p. 5).

Thaler not only distances himself from the act, he removes his authorial power entirely, delegating or relegating it to Creativity Machine. In lieu of his last name on the patent application he lists artificial intelligence as the entity to be credited.

The Court further emphasizes the certainty of its stance, stating, "Here, there is no ambiguity" (p. 5). This stance is rhetorically reinforced: inventors "are unambiguously natural persons" (p. 9). This assuredness is interesting in light of Kenneth Burke's exploration of ambiguity as a resource.³

By recognizing collaborative efforts within the legal domain of patent eligibility, a logical step for Plaintiff-Appellant would be to argue at least the role of DABUS as a mutual collaborator. This might be an intermediary bridge to recognize the creative authorial power of AI.

The Court itself seems to hedge rhetorically (though perhaps unwittingly) on the definition of person: "The Supreme Court has explained, when used [a]s a noun, individual *ordinarily* means a human being a person" (p. 6) (*italics mine*) Invoking the ordinary does not preclude the possibility of an unusual, evolving, extraordinary sense of the word "person." In like manner, Judge Stark refers to the "common understanding" provided in dictionaries for the word "person" or "natural person." It might be argued that AI is not within the realm of our common nomenclature, thereby directing us to a second (or third) legal look.

³ See *A Grammar of Motives*.

The legal hedge also is evidenced in the word *unless*, indicating a least a possibility of exception to the definition and understanding of what constitutes a human being. Plaintiff-Appellant might want to explore these clauses in further argumentative stance. Could it be that the “default meaning” attached to the Congressional definition of individual is not the sole definition worthy of consideration?

Stark’s argument relies to a certain extent on what is not included, using rhetorical absence as a justification for his ruling. If Congress or the courts had intended to include non-humans, wouldn’t they have said so? This seems to be grounds for a legal objection: calls for speculation. At any rate, such hypothetical syllogistic reason might be called into a least a slight doubt of what a human is and is not all about.

Dramatistic Recommendation

Plaintiff-Appellant might focus more substantially on drawing a rhetorical equation between infringe and invent. If a non-human can infringe, with the legal prohibitions attached to such an act, how is that act functionally distinct in terms of the power of inventing? Granted, they are two different kinds of acts, likely with different motives attached, but are they substantially dissimilar enough to disregard entirely Thaler’s meaning? Contextual considerations are a vital factor in that the precedential cases cited by the Court include opinions issued in 1993 and 2013; one might ponder the extent to which artificial intelligence has evolved since those earlier, more primitive, understandings of cognitive capability.

Conclusion

Plaintiff’s argument is based on a mystification view of AI, where it both attracts and eludes our desire to know, comprehend, or explain. In contrast, the Court’s argument is based on a demystification view of AI, where the parameters established in precedent claim that only humans can engage in inventing. To assume we know everything artificial intelligence can and cannot accomplish puts Polymorph into a prefabricated box, portending its potential.

Conceptualizing Kenneth Burke’s dramatistic pentad as a rhetorical Rubik’s Cube displays where turning/twisting the terms in various combinations produces varying vantage points from which to view the phenomenon. Of particular import for both Plaintiff and Appellant to consider is the element of purpose. Although both sides rely heavily on agent and scene in their argument a more indicative approach may be to focus on purpose. What draws or even compels humans to invent? What, if anything, might draw a future version of AI to invent (beyond the premises of human prompting)? Does Polymorph want a cracker or is Polymorph the code cracker?

Ultimately, the case question may be thought of as who is entitled and equipped to wear an artist’s smock. Whereas Picasso once mused that “art washes away from the soul the dust of everyday life,”⁴ might it be that AI washes away from the soul the life of everyday dust?

⁴ https://www.goodreads.com/author/quotes/3253.Pablo_Picasso

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