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"THINKING" AS APPLIED PHILOSOPHY AND APPLIED ETHICS: LUDWIG WITTGENSTEIN'S AND HANNAH ARENDT'S NEW APPROACHES TO THINKING AND THEIR INFLUENCE ON QUESTIONS OF ARTIFICIAL INTELLIGENCE (AI)

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Abstract

As seminal intellectuals of the 20th century, Ludwig Wittgenstein and Hannah Arendt—despite their differing focuses on the philosophy of language and political philosophy—opened entirely new realms of thought. Both are highly relevant to today's approach to artificial intelligence (AI). While Wittgenstein is often regarded as a pioneer of the technological foundations of AI, Arendt, though not concerned with technology itself, is essential for analyzing its political and existential consequences. Wittgenstein's later philosophy, particularly his thoughts on language games and language use, has had a significant influence on the understanding of semantic contexts in AI systems. He questions whether machines grasp true meaning or merely imitate patterns. Arendt serves today as a central point of reference for understanding the threat algorithms pose to human judgment. Arendt's concepts of "The Human Condition" and "Thinking Without Banister" caution against relinquishing human judgment to AI. She emphasizes the danger that we will create machines whose functioning we no longer understand. Both thinkers shape the discourse on AI ethics, human judgment, and the scope of technical systems.

Keywords: Ludwig Wittgenstein; Hannah Arendt; Alan Turing; thinking; artificial intelligence; computer science; practical philosophy; philosophy of language; epistemology; political philosophy; applied philosophy; applied ethics.

Introduction

Ludwig Wittgenstein and Hannah Arendt are two of the most influential thinkers of the 20th century. Despite their different areas of focus—philosophy of language for Wittgenstein and political theory for Arendt—they have opened up new avenues of thought in the field of artificial intelligence (AI) and remain highly significant in this context even today. Wittgenstein is often referred to as the philosopher of artificial intelligence, even though the term "artificial intelligence" itself did not come into use until after his death, whereas Hannah Arendt, unlike Wittgenstein, is not a thinker who analyzed the technological

foundations of AI. Nevertheless, Arendt also plays a special role today, as she recognized the political and existential consequences that such technology could potentially entail. She can be seen as an important reference point for understanding the threat that algorithms pose to human judgment.

Wittgenstein's influence on the field of artificial intelligence is considered significant, while Arendt's significance has not yet been recognized widely. This is partly because Wittgenstein had a direct connection to Alan Turing. In 1939,[1] Turing attended Wittgenstein's lectures on the foundations of mathematics at Cambridge (cf. Wittgenstein 1956). These sessions were famous for their lively discussions, particularly between Turing and Wittgenstein, which are recorded in the posthumously published notes (cf. Wittgenstein 1976). One could even regard Turing as a student of Ludwig Wittgenstein, although, judging by his remarks, Wittgenstein viewed him as an equal interlocutor.

Wittgenstein's later philosophy, particularly his thoughts on language games[2] (cf. Wittgenstein 2009, 7) and language use, has had a significant influence on the understanding of semantic contexts in AI systems. He questions whether machines grasp true meaning or merely imitate patterns (cf. Bremer/Flasiński 2022, 7-10)). It therefore makes sense to begin with him here, and then to explore the relevance of Arendt's philosophy, which is devoted to political judgment—something Wittgenstein completely left out. In this respect, the two thinkers complement each other well and are not in competition with one another.

1. The relationship between Ludwig Wittgenstein and Alan Turing

The relationship between the philosopher, engineer and mathematician Ludwig Wittgenstein (1889–1951) and the mathematician and computer scientist Alan Turing (1912–1954) was marked by an intense yet respectful intellectual exchange at the University of Cambridge in the late 1930s, primarily documented during a seminar in 1939 (cf. Wittgenstein 1976). Although they often held opposing views on the foundations of

[1] While Ludwig Wittgenstein's thinking, beginning with the outbreak of World War I, revolved almost exclusively around the war—which he accepted as fate and confronted by voluntarily enlisting in the military and making it the driving force behind his existential struggle to find the meaning of life—there was nothing comparable at the outbreak of World War II in 1939. The war had no direct influence on his philosophy, even though he served on the British home front. Cf. Arnswald 2024b.

[2] While *Philosophical Investigations* is the primary reference, the concept first emerged in his oral lectures and transitional writings from the early 1930s, notably *The Blue and Brown Books* (dictated 1933–1935). Cf. Wittgenstein 1958, 82-83, 108, 111, 116, 138, 172)

mathematics and logic, they influenced each other's ways of thinking (cf. Floyd 2019, 263; cf. Lupacchini 2026, 16).

In particular, the meetings and discussions between Alan Turing and Ludwig Wittgenstein in Wittgenstein's seminar "Lectures on the Foundations of Mathematics" (cf. Wittgenstein 1956) in Cambridge 1939 are regarded as intellectual encounters between two geniuses who pursued entirely different approaches to logic and language. During twenty-seven seminar sessions—Turing stopped attending the lectures after that—, they engaged in heated debates about the foundations of mathematics, with Turing advocating for formal computability (the groundbreaking development of the information age), while Wittgenstein expressed skepticism rooted in the philosophy of language. Today we have a total of thirty-one recorded lectures from Ludwig Wittgenstein's famous 1939 Cambridge course (cf. Wittgenstein 1976).

The debate between Wittgenstein and Turing during the 1939 lectures is considered one of the most fascinating moments in the history of philosophy. Although both rejected the reduction of mathematics to pure logic (logicism), their views on the nature of mathematical truth clashed sharply (cf. Matthíasson 2021, 2). The focus was on the role of logic in mathematics and the relationship between the two. Wittgenstein questioned the absolute truth of mathematics and discussed topics such as contradictions and rule-following (cf. Hodges 2014, 194ff.). Turing defended mathematical formalism (cf. Hodges 2014, 535), while Wittgenstein argued that mathematics did not reveal any absolute truth, but rather resembled a "language game" (cf. Shanker 1987, 67f., and 336). The published lectures are reconstructed based on notes taken by students (including R. G. Bosanquet, Norman Malcolm, Rush Rhees, and Yorick Smythies), which provide a detailed account of the discussions between Wittgenstein and Turing (cf. Wittgenstein 1976).

The later Wittgenstein, an anti-Platonist,[3] views mathematics as a human-created "language game" and social practice (cf. Vanrie 2024, 601; cf. Sambrotta 2025, 46). Turing, on the other hand, defends mathematical formalism and the idea that logical truths exist independently of human construction (cf. Lupacchini 2026, 11). A central point of their debate was the liar's paradox (the statement "This sentence is false"). The liar's paradox is a fundamental logical contradiction occurring when a self-referential sentence declares itself to be false, such as "This sentence is false". If the sentence is true, then it must be false, but if it is false, then the sentence is true, creating an endless, unresolvable loop of contradiction. Wittgenstein sees it as an artificial, self-contained language game,

[3] Platonists treat mathematical truths as discoveries about an abstract realm. The later Ludwig Wittgenstein is widely regarded as an anti-Platonist because he rejected the idea that meanings, rules, and mathematical truths exist as abstract, eternal entities.

while Turing regards it as a logical problem that must accept both the statement and its opposite (cf. Wittgenstein 1976).

A famous example of their discussions is the question of whether a contradiction in a logical system (such as set theory) was "dangerous." Turing argues that a hidden contradiction *is* dangerous and could lead to a practical disaster (the famous "falling bridge" objection). He claims that if a system is contradictory, you cannot trust its application because anything might be provable. Turing espouses the classical mathematical view that a contradiction in a logical system is fatal because, according to the principle of explosion (*ex contradictione quodlibet*), anything can be proven from a contradiction. In the lectures, Wittgenstein argues that a bridge will not fall down due to a mathematical contradiction or logical paradox: "The real harm will not come [from contradiction] unless there is an application, in which case a bridge may collapse." (Wittgenstein 1976, 211) Instead, if a bridge collapses, it is because of a real-world engineering or physical error (like a wrong natural law) or a plain calculation mistake (multiplying wrong), not because of pure logic. He mocks mathematicians' "superstitious" fear of contradictions.[4] For him, mathematics is a human invention (a language game) and not a reflection of an external reality (cf. Wittgenstein 1976).

Turing views mathematics more as a tool for discovering objective structures. He seeks a solid foundation for mathematics to ensure reliability in its application. Wittgenstein makes the radical claim that the mathematician is an inventor, not a discoverer (cf. (Wittgenstein 1956, 167). He rejects the idea that there is a deeper mathematical truth that exists "behind" the symbols. Wittgenstein focuses on how we use mathematical concepts in everyday life (rule-following). He wants to show Turing that mathematics derives its meaning solely from social practice and convention (cf. Rodych 2018). Turing, on the other hand, was not a classical formalist, but placed greater emphasis on the internal consistency of formal systems. He views logic as a precise framework that must function independently of human language use (cf. Floyd 2016, 15; cf. Turing 2004, 392).

Despite their differences of opinion, they influenced one another. It is believed that Turing's work on computable numbers inspired Wittgenstein to develop concepts such as "form(s) of life" in his later works (cf. Floyd 2016, 10). Wittgenstein, in turn, indirectly influenced thinking about language and logical structures, which was relevant to Turing's work on artificial intelligence (cf. Floyd 2017, 104, 115). The two were

[4] However, recent scholarship notes that Wittgenstein was not merely making an empirical claim about whether bridges fall, but was probing *how* Turing used the word "contradiction" and showing that Turing oscillated between logical observations and empirical predictions (cf. Matthíasson 2021; cf. Vanrie 2024).

not close friends, but they respected each other's intellectual abilities. Wittgenstein's style was often confrontational, as was evident in his heated debates with Turing. It can be said that the relationship was a meeting of two brilliant but very different minds, one that was pivotal to the connection between philosophy and early computer science.

Some researchers, such as Juliet Floyd, speculate that Wittgenstein's later concept of the "form of life" was influenced by Turing's work on computing machines, so that Wittgenstein's shift to "Lebensform" (form of life) in 1936–1937 was a response to Alan Turing, specifically analyzing MS 142 where "Kultur" was replaced by "Lebensform" (cf. Floyd 2016, 44-48; cf. Floyd 2019, 270-271). Floyd argues that Wittgenstein's reading of Alan Turing's groundbreaking work "*On Computable Numbers, with an Application to the Entscheidungsproblem*" (Turing 1936/1937) contributed decisively to the development of the concept of "forms of life" in the *Philosophical Investigations*. This conclusion arises from the historical context, insofar as Wittgenstein began to use the term "form of life" in his manuscripts (particularly in 1936–37) after he had engaged intensively with Turing's ideas on computing machines (cf. Floyd 2016, 7). She demonstrates that Wittgenstein interpreted Turing's mathematical analysis of "computation" as a form of "domestication of logic"—that is, as proof that logic is based on simple, human activities within a practice (a form of life) (cf. Floyd 2016, 36).

Turing analyzed human reasoning by viewing humans as "machines" that follow rules within a shared social context (cf. Floyd 2019, 280-281). According to Floyd, this helped Wittgenstein deepen his own concept of "language games" (cf. Wittgenstein 2009, 7). The "form of life" functions here as the shared human background that makes the following of rules possible in the first place (cf. Floyd 2018, 59-60). Juliet Floyd's approach thus brings the understanding of the late Wittgenstein closer to the philosophy of logic and mathematics than is often the case in traditional interpretations. Turing, in turn, was inspired by Wittgenstein to give greater consideration to the relationship between logical symbols and human action (phraseology) (cf. Floyd 2016, 24). The seminar ended without reaching a consensus, as Turing felt that Wittgenstein's purely linguistic-philosophical approach neglected the practical necessity of consistency in science (cf. Matthíasson 2021, 1-2).

The concept of "humans as machines" is a central point of contention in the debate between Wittgenstein and Turing. A key quote from Wittgenstein's *Remarks on the Philosophy of Psychology* reads: "These machines are people who calculate." (Wittgenstein 1980, 1096) In Turing and Wittgenstein's time, the word "computer" referred to a person who performed purely mechanical calculations. Wittgenstein did not view the Turing machine as a model for human *thinking*, but rather as a formal abstraction

of a specifically human activity—the mechanical following of a rule. The contrast between human and machine illustrates Wittgenstein's concept of the form of life: A machine (algorithmically) follows a rule causally or purely formally. It does "what it does" without "understanding" the social context or the meaning. Human action (normative) is embedded in a practice. According to Wittgenstein, following a rule is a normative act that only makes sense within a shared form of life: "To imagine a language means to imagine a form of life." (Wittgenstein 2009, 19)

In his writings (e.g., in the *Brown Book*), Wittgenstein uses the image of the "living reading machine" (cf. Wittgenstein 1958, 119-121, cf. also Wittgenstein 2009, 157; cf. also Wittgenstein 1976)**.** By this, he describes in the *Brown Book* someone who converts symbols (such as musical notes or letters) into actions purely by reflex, without consciously interpreting them. However, he uses this to highlight the difference between this and genuine understanding, which requires precisely that integration into the human form of life.

In summary, while the history of technology often portrays Turing as the one who reduced humans to machines, researchers show that Turing and Wittgenstein together explored the boundaries of what is purely mechanical and what human practice (form of life) requires as an indispensable foundation (cf. Hodges 2014; cf. Floyd 2017; cf. Floyd 2018; cf. Rodych 2018; cf. Floyd 2019; cf. Matthíasson 2021; cf. Bremer/Flasiński 2022; cf. Vanrie 2024; cf. Sambrotta 2025; cf. Lupacchini 2026). The debate between Wittgenstein and Turing provides a valuable framework for philosophically contextualizing current developments in artificial intelligence (AI), particularly large language models (LLMs).

The classic Turing test is often misunderstood as proof of intelligence if an AI can fool a person. From Wittgenstein's perspective, however, the test shows instead that we attribute "human" characteristics to machines as soon as they successfully participate in our language games. It is less about what is happening *inside* the machine, and more about how we integrate it into our form of life.

Research into multimodal AI (AI with cameras and robotic bodies) today seeks to implement Wittgenstein's insight that language requires contact with the physical and social world. Without these "points of contact" with the human world of experience, the intelligence of LLMs remains a purely formal technique that has no real access to values or intentions. While Turing shows us how far we can go with mechanization, Wittgenstein reminds us that intelligence, without being embedded in a social form of life, always remains merely a simulation.

2. Ludwig Wittgenstein—a pioneer of artificial intelligence

Ludwig Wittgenstein is considered a forerunner to artificial intelligence. Wittgenstein's early *Tractatus* anticipated modern natural language processing by exploring structured, logical language. His later philosophy, on the other hand, which views language as a tool whose meaning is derived from its use, offers important insights into the functional limitations and contextual challenges of today's large-scale AI language models.[5] Some scholars even posit that a significant portion of recent breakthroughs in artificial intelligence—specifically within natural language processing (NLP) and machine learning—can be traced back, albeit indirectly, to Wittgenstein's *Philosophical Investigations* (cf. Molino/Tagliabue 2023).

Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* (1921) is historically foundational for artificial intelligence, acting as the philosophical blueprint for early **sy**mbolic AI and knowledge representation. Its primary importance lies in proposing that language is a logical structure that maps onto reality—an idea that directly inspired the paradigm of "Good Old-Fashioned Artificial Intelligence" (GOFAI), a term coined by John Haugeland (cf. Haugeland 1985, 112) that dominated the field for decades. This deeply resonates with Wittgenstein's notion that the boundaries of our language define the boundaries of our world. This quote, often phrased as "The limits of my language mean the limits of my world." (Wittgenstein 2001, 5.6), is found in Ludwig Wittgenstein's seminal 1921 work, *Tractatus Logico-Philosophicus*. It highlights that the vocabulary and structure of our language shape our perception of reality.

To create AI in the sense of classical artificial intelligence, a computer must understand language as manipulable symbols. The concept of GOFAI is based on replicating human language comprehension through machines. The key to this lies in the coupling of two functions: a memory of character strings that serve as information carriers, and a set of rules that logically rearranges these characters. While the stored data forms the foundation of knowledge, rule-based processing simulates the process of thinking. According to this theory, it is only the interaction of these components that defines an intelligent system (cf. Wang 2022, 53f.).

The *Tractatus* asserts that the world is a collection of facts, not things, and that language is a "picture" of those facts. This underpinned the idea that if you could formalize language into logical propositions, you could build a machine that thinks and acts

[5] In this regard, Wittgenstein's concept of progress is consistent with the development of artificial intelligence, which is not based on disruption but rather on steady advancement. Cf. Arnswald 2024a.

upon facts. The *Tractatus* provides the logical framework for representing knowledge as sets of atomic facts, leading to the development of ontologies, logic-based programming, and automated reasoning systems. The idea that language has a logical structure that mirrors the world directly influenced the construction of symbolic AI systems, where meaningful propositions are manipulated through rules of inference. Wittgenstein's emphasis on language limits—"What we cannot speak about we must pass over in silence." (Wittgenstein 2001, 7)—is vital for defining AI's boundaries, highlighting that purely symbolic machines cannot understand what lies beyond mapping or digitization.

Early AI drew from the *Tractatus*, but contemporary natural language processing (NLP) has moved toward the ideas in Wittgenstein's *Philosophical Investigations* (cf. Molino/Tagliabue 2023). Modern AI techniques reflect that "the meaning of a word is its use in the language" (Wittgenstein 2009, 43) philosophy, defining words by their contextual distribution in large corpora instead of through rigid logical definitions. This AI defines words based on their distributional context within massive datasets, rather than on static, logical rules.

While not all modern AI is based on large language models (LLMs), LLMs are specialized models designed for natural language processing (NLP) and content generation. In computer science and AI, NLP refers to the ability of computers to understand, interpret, and generate human language. It is the technological foundation for the LLMs. A Large Language Model (LLM) is a type of AI designed to understand, generate, and summarize text by analyzing massive datasets, often billions of words. Using deep learning and neural networks—typically transformer architectures—they predict the next word in a sequence to produce human-like language. The Transformer is a neural network architecture designed for processing sequential data, such as text or images, by utilizing self-attention mechanisms rather than recurrence (RNNs). It enables parallel processing, significantly accelerating training speed and improving context understanding for tasks like machine translation, text generation, and computer vision. For an LLM, its entire "world" is strictly confined to its training data and probabilistic structures, creating an ontological ceiling.

Large Language Models (LLMs) and the philosophical concept of "meaning is use" (cf. Wittgenstein 2009, 43) are deeply intertwined, as LLMs function by analyzing how words are used in context rather than by understanding the "true" definition of words. LLMs are trained on vast amounts of text to predict the next word in a sequence based on probability. Words are translated into numerical vectors (embeddings). Words with similar contextual usage are placed close together in this multi-dimensional space, allowing

the model to understand semantic relationships. LLMs can summarize, translate, generate text, and code by recognizing patterns in language use.

For LLMs the "meaning is use"-concept (cf. Wittgenstein 2009, 43) is essentially their foundational operating principle. Instead of knowing what a word "is" through a dictionary, these models learn what a word "does" by analyzing its relationship with millions of other words. This approach reflects the later philosophy of Ludwig Wittgenstein, who argues that language is a tool used in social practices—or "language games" (cf. Wittgenstein 2009, 7)—with the focus on the integrated connection between language and the practical actions —"the praxeology context" or "the praxeology concept" (cf. Arnswald 2009, 10, 20, 21)—associated with it. He emphasized that the meaning of a word arises from its active use in specific social contexts and does not merely serve to represent external objects.

In his work *Philosophical Investigations* he defines the concept of a "language-game" as "the whole, consisting of language and the activities into which it is woven" **(**Wittgenstein 2009, 7). It signifies that language is not just words, but the total structure of speech woven together with the social practices, actions, and contexts in which it is used. Meaning is generated through active use in specific contexts, not merely by abstractly corresponding to objects.

Wittgenstein argues that the meaning of a word is its use within this "whole," rather than a static representation of an object. Language cannot be separated from the activities it serves (e.g., commanding, questioning, joking, or building). These language games are part of a broader "form of life"—the shared cultural and social habits of a community. He emphasizes that a form of life requires not only agreement on definitions, but above all agreement on judgments. "Agreement in judgments" is a key concept from Ludwig Wittgenstein's *Philosophical Investigations* (Wittgenstein 2009, 242), stating that communication requires more than shared definitions; it requires consensus on empirical judgments (e.g., recognizing colors, measuring lengths). It forms the basis of objectivity, grounding language in shared human experience, not just rules.

While people need to agree on definitions to communicate, Wittgenstein argues that definitions alone are insufficient. We must also share judgments about how those definitions apply to the world. This agreement is necessary to establish a shared "form of life" or context, enabling language to function as a tool for communication. Rather than relying on an absolute, independent reality, objectivity is grounded in this shared agreement (or inter-subjectivity) on what is true or false. Examples include agreeing on what constitutes a color, measuring, or identifying objects, which demonstrates that judgment is essential for using language effectively.

A builder shouting "Slab!" is not just saying a noun but performing an action requiring a specific response (bringing a slab), making the word inseparable from the act. This concept emphasizes that understanding language requires observing how it functions in daily life, not just analyzing its formal structure. In this scenario, a builder (A) and an assistant (B) use a simple language consisting only of four words: "block," "pillar," "slab," and "beam". When the builder calls out "Slab!", the assistant brings a slab. The meaning of "Slab!" is not just the object it points to; its meaning is the action of bringing the stone to the builder. In this context, the word "Slab!" functions more like a command than a simple name. If someone yelled "Slab!" in a park, it would not have the same meaning because the "game" and its rules (building a house) aren't in play **(**cf. Wittgenstein 2009, 1-21; cf. Rhees 1959/60**)**.

This is also consistent with the training of LLMs that incorporate textual data embodying human forms of life. This enables LLMs to capture collective patterns of meaning as well. Wittgenstein's ideas suggest how LLMs can act as automated, digital representations of shared human communication, rather than just isolated AI tools. This implies that effective AI collaboration depends more on building collaborative language habits—or "language games" (cf. Wittgenstein 2009, 7)—than simply improving formal linguistic competence; ultimately advocating for socially contextualized methods that embrace both the technical skill and philosophical depth of human understanding, advancing more contextual, socially-situated methods that reconcile machine-learning progress with the philosophical challenges of human language, intent, and cognition.

Ludwig Wittgenstein proposes the concept "meaning in use" in *Philosophical Investigations* (cf. Wittgenstein 2009, 43) when challenging the idea that words are simply labels for objects. The meaning of a word is defined by how it is used in a specific context. Language is a collection of diverse practices or "games". The word "water" means something different if used as a command, a question, or a description. Categories are defined by overlapping similarities, similar to how different activities are called "games". LLMs show impressive adherence to this concept. They naturally master various language games, ranging from casual talk to technical shorthand, expertly switching between them as the situation demands.

LLMs learn to generate language by observing how words are used within large datasets, which is a practical application of the "meaning is use" concept. Words appearing in similar contexts have similar meanings. They learn meaning by modeling the statistical relationships of tokens (words/phrases) in a text corpus**.** Next-token prediction functions as a direct technical application of Wittgensteinian linguistic insights. Wittgenstein's concept of "language games" (cf. Wittgenstein 2009, 7) leads AI models to the

realization that it is more useful to understand patterns of use rather than referential meanings. An LLM adjusts its output based on the prompt, tone, and context. For example, "bank" can refer to a river edge or a financial institution based on the surrounding words. LLMs lack "grounding"—they do not know what the words refer to in the real world. They manipulate symbols based on statistical patterns, but they do not have the communicative intentions of human users.

LLMs show that a machine can produce coherent language by mastering usage without having internal understanding. When LLMs "hallucinate" (make up facts), it is often because they are prioritizing the statistical pattern of a persuasive, grammatically correct answer over the truth of the statement. The success of LLMs challenges traditional AI, suggesting that simulating human-like language use is a viable form of artificial intelligence. Despite producing fluent, extensive discourse on concepts like consciousness, it only simulates understanding through syntactical symbol manipulation, lacking the grounding for true semantic meaning or direct, qualia-based experience beyond text.

This echoes Wittgenstein's view that meaning arises from practical usage and context, not from rigid, formal definitions. However, this raises the question of whether LLMs are actually engaging in genuine human language practices or merely simulating them. On the surface, this suggests that AI systems are approaching Wittgenstein's conception of meaning and understanding. However, LLMs simulate language mastery through rule-following via statistical patterns rather than true comprehension, not by consulting explicit instructions, mirroring the context-driven, practice-based understanding Wittgenstein deemed central to human language, however, at least echoing Wittgenstein's idea that meaning arises from practical usage and context.

While these systems mimic rule-following based on usage—aligning with a practice-based view of language—limitations in the AI system remain: When it comes to the experiential and social dimensions of human language competence, LLMs, with their functional language competence, cannot match the genuine understanding that humans possess. The reliance on static training data, contrasted with ever-changing social practices, acts as a core limitation for modern AI language models, underscoring the divide between mere statistical pattern matching and true, active participation in human life.

3. Wittgenstein's and Arendt's concept of thinking

In Ludwig Wittgenstein's thought, there is a marked break between his early and late works. While he initially believed that the logic of the world was fixed in language,

he later came to view thinking as a social practice. In the *Tractatus Logico-Philosophicus* (1921), Wittgenstein still regards thinking as a logical representation of facts. A thought is a "logical picture of the facts." (Wittgenstein 2001, 3) Sentences and thoughts function like blueprints that reflect the structure of the world. Thinking and speaking share the same boundary. What cannot be expressed logically and clearly (such as ethics or metaphysics) cannot be thought of in a meaningful way.

In his magnum opus of late philosophy, *Philosophical Investigations* (1953), Wittgenstein radically revises this view. Thinking is no longer an isolated inner process, but rather part of a form of life: "The meaning of a word is its use in the language." (Wittgenstein 2009, 43) Thinking, therefore, means mastering the rules within a social language game. He argues that there can be no purely private thinking. A person cannot invent a language (and thus no concepts) for purely private sensations, since there would be no external criterion for their correctness. Thinking is not what happens "behind" speech but rather manifests itself in action itself. He often compares words to tools: their meaning arises from their function (cf. Candlish/ Wrisley 2019).

Wittgenstein's later work is often understood as a form of therapy intended to free us from the bewitchments of language. Wittgenstein himself describes philosophy there as "a struggle against the bewitchment of our understanding by the resources of our language." (Wittgenstein 2009, 109) By "bewitchment," Wittgenstein means that we fall into philosophical problems because we misunderstand how our everyday language works. Words are then torn from their usual usage, which leads to apparent problems.

For the later Wittgenstein, thinking is often prone to error. He sees the task of thinking as freeing oneself from false ideas. He describes philosophy as "tidying up" or as a struggle against the confusion of the mind caused by language: "What *we* do is to bring words back from their metaphysical to their everyday use." (Wittgenstein 2009, 116) Wittgenstein calls for philosophy to be brought back down from the metaphysical realm to the "rough ground" (cf. Wittgenstein 2009, 107) of everyday use. The therapy serves to clarify the mind by resolving linguistic confusions. The later Wittgenstein holds the view that the meaning of a word is its use in language. Philosophy consists in describing this use.

Language is understood as a collection of various games (activities) embedded in forms of life. Problems arise when one transfers a language game (e.g., scientific description) to another (e.g., ethical evaluation). The goal is a "clear presentation" that shows us how we have become entangled in language. Meaning arises from the use of words in specific contexts.

One of Wittgenstein's famous metaphors is that of showing the fly the way out of the fly-bottle. The philosopher is the therapist who helps break through the constraints of thought. He views philosophy as an endeavor intended "to show the fly the way out of the fly-bottle" (Wittgenstein 2009, 309)—that is, to free people from the entanglements of their own minds and language. According to Wittgenstein, when we think about more complex things (like "love" or "justice"), we often get stuck because we forget how these words are actually "played" in everyday life. We search for a fixed definition in our minds instead of looking at how we use them in life.

This therapeutic analysis of language is also reflected in other aspects of Wittgenstein's later philosophy, including his famous dictum, "Don't think, just look!" (Wittgenstein 2009, 66)—which suggests that Wittgenstein does not seek to solve philosophical problems through complex theories, but rather by exposing them as misunderstandings of language. Wittgenstein aims to show that we often use language like a tool (such as a hammer or a saw). Thinking here is not some mysterious process in the mind that happens before we act; rather, it is the mastery of the technique of this game.

Hannah Arendt (1906–1975) interprets thinking in a completely different way than Wittgenstein. For her, it is above all political judgment, which also means critical judgment (cf. Taylor 2002, 160, 163). While Wittgenstein uses the "construction workers example" to show that thinking is the following of social rules (like a cog in a machine), Arendt would immediately take issue with this: For her, actual thinking begins only where mere functioning ends. She draws a sharp distinction between working (as in Wittgenstein's builders) and acting (cf. Arendt 1998, 7-8). When the assistant simply brings the slab, he is "functioning." He is part of a process. For Arendt, this is not yet thinking. For her, thinking only begins when the assistant pauses and asks himself: "Why are we actually building this building? Does it serve freedom, or is it a prison?"

For Arendt, thinking is a dialogue with oneself, "an inner dialogue" (cf. Arendt 2018, 229) or "a silent dialogue between me and myself" (cf. Arendt 2018, 485). While Wittgenstein's bricklayer reacts to a signal, Arendt's thinking person must be accountable to oneself. Those who think can no longer simply carry out orders without examining their conscience. She emphasizes that through thinking we can begin something entirely new (natality). Thinking is the moment when we break out of the familiar "language game. "A person is successful when they possess the capacity for judgment. If the "rule" (or the command) is immoral, thinking is the only force that prevents them from simply carrying on (cf. Arendt 2018, 383).

Hannah Arendt calls for freeing thought from dogmatic ideologies and rigid theoretical frameworks. For her, thinking is a dialogue between me and myself. It is closely

linked to the moral capacity to distinguish between good and evil (cf. Arendt 1971). This stands in stark contrast to Wittgenstein, who argues that there can be no private language—language functions only because it follows shared, public rules. Wittgenstein dispels the notion that thinking is a private process taking place within the "inner confines" of the mind. His famous argument holds that a language that only I alone understand is impossible (cf. Wittgenstein 2009, 243-315). Why? Because without other people, I lack a standard by which to judge correctness. Thinking takes place in language games, and these games require participants. For Wittgenstein, the public sphere is the space of shared rules. Without exchange and agreement with others, there would be no meaning and no truth. The public sphere is the prerequisite for the logic and meaning of our thinking.

For Arendt, however, the public sphere (the "political space") is the place where thought becomes judgment. Thinking means for her adopting the perspectives of others ("representative thinking") (cf. Arendt 1968, 241, 247). I can only truly judge when I imagine what the world looks like from the perspective of my fellow citizens. This is only possible if there is a public sphere in which this diversity is visible. It is only in the public sphere that we "appear" as individuals. While silent thinking (the dialogue with oneself) takes place in private, it must prove itself in the public sphere to become politically effective (cf. Arendt 1978, 6, 257, 268-269)[6].

According to Hannah Arendt, totalitarian systems first attempt to destroy the public sphere so that people can no longer compare with one another to determine what is true. The public sphere is both the goal and the test of thought (cf. Arendt 1966, 371, 466, 474): "By pressing men against each other, total terror destroys the space between them." (Arendt 1966, 466) This is an absolute necessity, because "[t]otalitarian government, like all tyrannies, certainly could not exist without destroying the public realm of life, that is, without destroying, by isolating men, their political capacities." (Arendt 1966, 475)

For Arendt, true thinking is not a technical process, but an act of freedom and meaning-making that a machine can never perform, since it lacks human plurality and the capacity to act within a shared world: This act of freedom can only be performed by free people: "We know that […] that the self-coercion of totalitarian logic destroys man's capacity for experience and thought just as certainly as his capacity for action." (Arendt 1966, 474). Unlike Wittgenstein, who focuses on language, Arendt emphasizes political action in the public sphere. And again, unlike Wittgenstein, she is not a thinker

[6] See also Arendt 1998, Chapter II: The Public and the Private Realm, and Chapter V: Action.

who analyzes the technological foundations or the preliminary studies of AI, but rather one who predicts its political and existential consequences. Today, she is often cited as a point of reference for understanding the threat that algorithms pose to human judgment.

The comparison in a nutshell:

Aspect	Wittgenstein	Arendt
Role of others	They set the rules so that words make sense.	They provide the context needed to form an opinion.
Danger	Linguistic confusion and the loneliness of logic.	Thoughtlessness and tyranny.
Function	A relative certainty is important.	Enabling freedom and action.

4. The focus on "how to think"

Both thinkers shifted the philosophical focus from establishing objective truths to examining the process of thinking itself. Arendt believes thinking is an "exercise" that teaches people *how* to think rather than *what* to think, serving as a safeguard against "thoughtlessness" and political passivity (cf. Arendt 1998, 5). Wittgenstein similarly views philosophy as an activity of clarification rather than a body of doctrine, famously suggesting that real thinking requires a "descent into old chaos" (Wittgenstein 1998, 74) to challenge one's own assumptions.

For Ludwig Wittgenstein, "how to think" is not about reaching a final set of truths, but about a rigorous process of clarifying thoughts to escape the "bewitchment" of language. His approach to thinking involves several distinct "methods" that focus on the activity itself: Wittgenstein famously stated that "Philosophy is not a body of doctrine but an activity" (Wittgenstein 2001, 4.112). He believes that traditional philosophy fails because it tries to build grand theories like science. Instead, he proposes that thinking should be a therapeutic act.

Wittgenstein believes that true thinking requires a willingness to dismantle your own certainties. He argues that to philosophize, you must "descend into the old chaos & feel at home there." (Wittgenstein 1998, 74) It is an ethical discipline of working on yourself and your own perceptions rather than just collecting new facts. In short, "how to

think" in the Wittgensteinian sense is the practice of unlearning false simplifications and regaining a clear view of the world as it actually functions.

For Hannah Arendt, "thinking" is also an ethical endeavor and a fundamental human activity that serves as a safeguard against evil and is a prerequisite for moral responsibility. Unlike acquiring knowledge, thinking is an internal, resultless dialogue that anyone can—and must—engage in. For Arendt, thinking is a "dialogue with oneself," insofar as one examines whether one can live with one's actions (cf. Arendt 1971).

Arendt draws a sharp distinction between thinking and knowing. Knowing (cognition) is driven by the search for truth and results in verifiable facts or scientific knowledge. Once a fact is found, the process ends. Thinking (reason) is driven by the search for meaning rather than truth. It deals with "unanswerable questions" and has no end point or tangible product. To stop asking "why" is to stop thinking (cf. Arendt 1978).

Thinking is fundamentally a solitary activity, but it is never lonely. Arendt describes it as a "two-in-one" dialogue where you keep yourself company. You must be able to live with yourself. If you commit a crime or act immorally, you must live with a "wrongdoer" in your own internal dialogue, which creates disharmony. In this internal space, you represent the world and the perspective of others to yourself, testing your ideas against different viewpoints (cf. Arendt 1971; cf. Arendt 1978).

Arendt uses the metaphor of a banister (a handrail on a staircase) to describe traditional moral codes or pre-established guidelines (cf. Arendt 2018). Most people rely on these "banisters" to navigate life. However, if the banisters are swapped (as in Nazi Germany), people often follow the new ones just as blindly. Thinking "without banisters" means judging each situation on its own terms without relying on fixed axioms or inherited ideologies.

Arendt's most famous observation came from the trial of Adolf Eichmann. She found that he was not a "monster" but was profoundly thoughtless. He failed to imagine what others were experiencing and relied entirely on clichés and bureaucracy (cf. Arendt 1964). Thinking is “destructive" because it blows away these easy clichés and unquestioned assumptions, forcing you to stop and examine what you are doing. Arendt believes that while thinking is "useless" in a productive sense, it is the only thing that can prepare us for the faculty of judgment—the ability to tell right from wrong in the heat of the moment (cf. Arendt 1964; cf. Arendt 1971; cf. Arendt 1978).

In summary, it can be said that Wittgenstein seeks to liberate thought therapeutically through the analysis of language, while Arendt understood thought as a necessary, dangerous, and moral act required to make judgments in a complex world.

4. The significance of Arendt's "thinking" for artificial intelligence

Since AI technology did not yet exist at the time, Arendt never directly addressed the topic of artificial intelligence as we know it today, but she did warn against a world in which we are relieved of the need to act.

In current debates, researchers draw on Arendt's theories to warn against surrendering our capacity for judgment to AI (cf. Coeckelbergh. 2022; cf. Iannuccilli 2025; cf. Gans Combe 2025). Following Arendt, we lose the public space for discussion and collective action when algorithms decide what is "true" or "relevant." She foresaw that automation could free people from tedious work but warned that a society consisting exclusively of "consumers" would lose its meaning if it no longer actively participated in political life. We are all "the same" in that we are human, but "distinct" in that no one is ever the same as anyone else. This plurality is only possible if we can communicate our unique perspectives in a shared language.

In her seminal work *The Human Condition*, Arendt divides human activity into three basic forms (cf. Arendt 1998). When we apply this framework to the AI revolution, it becomes clear why her work is so relevant today:

Firstly, activities that serve to sustain biological life (eating, cleaning, routine), which she terms "work." It is an endless cycle of consumption and exhaustion. This is where AI is most useful. It takes over repetitive tasks and "mental assembly-line work." Arendt's concern, however, was that when humans are freed from "work," they do not automatically become thinkers, but degenerate into mere "consumers" who do not know how to use their freedom (cf. Arendt 1998, 79-135).

Secondly, the creation of an artificial world of things (houses, tools, works of art) that outlast a human lifetime—what she calls "making." Today, AI is beginning to dominate "making" (generative art, architectural designs, code). Arendt warns that we lose our connection to the world if we merely "have things made" instead of shaping them ourselves. We surround ourselves with a technological world that we operate, but whose inner logic we no longer comprehend (cf. Arendt 1998, 136-153).

And thirdly, action as the highest form of human activity. It is the interaction between people in the public sphere—speaking, making political decisions, and initiating something entirely new. Herein lies the greatest danger. Action presupposes freedom and spontaneity. AI, however, is based on algorithms and probabilities, that is, on predictions derived from the past. When we delegate political decisions to data models, we replace "action" with "administration." AI can never initiate "something new" in Arendt's sense, since it merely spits out statistical recombinations of the old. For Arendt, AI does not

threaten our jobs (work), but our ability to shape the world together as free citizens (action) (cf. Arendt 1998, 175-179).

Of course, modern models operate through statistical patterns. They lack the web of experiences and social practices Wittgenstein calls "forms of life." But the gap might be narrowing as each new model learns more about the subtle patterns of use, more complex language games. Arendt's analysis of totalitarianism applies today to AI surveillance and algorithmic manipulation. She describes how the loss of facts and the isolation of the individual pave the way for totalitarian rule.

The distinction between mechanically following a rule (like a Turing machine) and acting in a normative manner is highly relevant today. The delegation of responsibility is one of the greatest dangers here. As Arendt describes in her book *Eichmann in Jerusalem*, first published in 1963, Adolf Eichmann justified his actions by claiming he was merely "following orders" and acting within the framework of the system (cf. Arendt 1964). Something similar happens with AI systems: When an algorithm discriminates in the granting of loans or in court rulings, developers often say, "It's just the data" or "That's the logic of the model." No one feels personally responsible.

While Wittgenstein explains AI as a linguistic system, Arendt issues an ethical warning: AI may be capable of "intelligent" computation, but it can never "think" or "act." Therefore, according to her, thinking remains a necessary, dangerous, and moral act essential for making judgments in a complex world.

Conclusion

Despite his role as a pioneer, Wittgenstein also offers the strongest critique of the idea of "true" artificial intelligence. For Wittgenstein, language is embedded in a human "form of life"—a tapestry of biology, culture, and physical experience. Since an AI cannot feel pain, experience hunger, or die, it plays along with the "language game" but does not share the form of life that gives words their deep meaning. It merely simulates understanding through statistical probabilities.

Wittgenstein thus helps us understand why AI is so good at language production (due to the pattern-based nature of language), but at the same time, why it lacks true consciousness (due to a lack of biological and social embedding). In modern AI development, particularly with LLMs, Wittgenstein's concept of "language games" (cf. Wittgenstein 2009, 7) is used as a practical framework for design and interaction.

The distinction between mechanically following a rule (like a Turing machine) and acting in a normative manner is highly relevant today. When an AI makes a mistake,

we look for the error in the code or in the training data (causality). When a human makes a mistake, we criticize their judgment (normativity).

For Arendt, evil (or injustice) does not arise from malice, but from the mindless functioning of a system, and thinking is a "dialogue with oneself" (cf. Arendt 2018, 229, 485). One examines whether one can live with one's actions. An AI has no self and thus no inner dialogue. It merely optimizes a target (e.g., profit or clicks). The danger: When we delegate decisions to AI, we shut off our own conscience. We become "Eichmann's of the algorithms" (Arnswald), blindly carrying out what the machine has calculated to be efficient.

Arendt calls bureaucracy the "rule by Nobody" (Arendt 1970, 38, 81). AI is the ultimate form of this rule. When an algorithm decides your health insurance or your job prospects, there is no longer a counterpart with whom to argue or to whom to explain the human situation. The system is unyielding and thoughtless. In keeping with Arendt's thinking, we must strongly caution against delegating responsibility to algorithms, since they merely perform computational operations, whereas genuine speech always presupposes the individual's personal commitment to a community (a "we").

In short: The "evil" of the AI era is not a robot uprising, but rather the creeping dehumanization that occurs when we stop making moral judgments and instead focus solely on procedural matters. In this regard, Arendt's concept of thinking is directly compatible with Wittgenstein's concept of thinking and is of utmost relevance to the field of artificial intelligence.

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