Conflict of Interpretations: On Paul Ricoeur's Contributions to the Philosophy of Technology

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Boston University

Recent literature regarding how French philosopher Paul Ricoeur's work relates to the philosophy of technology appears *prima facie* to be contradictory. Philosophy of technology is the systematic treatment of philosophical issues (e.g., technological design, risk, morality) using the assumption that such issues dynamically interact with a given technological artifact or technique in the social sphere. This is opposed to treating technology as being a mere higher-order instantiation of more fundamental philosophical problems. In one sense, Ricoeur has been charged with failing to contribute original work directly to the field by resisting the empirical turn of the discipline in the 1980s and taking a thoroughly pessimistic view of technology that relies on a questionable distinction between persons and things–perhaps due to his early approximation with the Frankfurt school and Habermas.[1] In this view, Ricoeur's work does not add anything new, at least directly, to the discipline but is still valuable to the philosophy of technology through other features of his work such as his hermeneutics and narrativity.

In another sense, some argue Ricoeur adds to the field by directly thematizing technology when studying ethics and human capability and that he cannot be thought of as merely ignoring the complex relationship between the social sphere and technology.[2] [3] Here I offer a synthesis of both views and I suggest that Ricoeur goes beyond just thematizing technology, but offers what I call a 'proto-empirical' philosophy of technology that is open to the remainder of Ricoeur's hermeneutic thought. In this way, Ricoeur did not resist the empirical turn as if it were contradictory with his overall project but was merely on the cusp of it due to his famously cautious philosophical approach, meaning his work is potentially consistent with contemporary perspectives. [4]

As such, I intend to argue that the aforementioned views are not at odds, but rather capture important truths about the nature of Ricoeur's

philosophical project. At one level, Ricoeur's philosophy of technology must be viewed through temporarily parsing apart technology and technique (i.e., an instance of persons and things); in doing so, Ricoeur can be thought of as directly adding to the field, at least in the sense that Wolff[25] advocates, by avoiding the reduction of meaning into merely technical questions. This is an important contribution to the philosophy of technology, whether or not one is convinced of its correctness, as it suggests that there is a dialectic between 1) the abstracted and ambiguous 'technologies' and 2) the practical, concrete experience of those who use 'techniques'; it is this dialectic that can create new possibilities of action and practice which can then be followed to understand the material and sociological implications of technology when collapsing the dialectic. However, by advocating for this working, semantic distinction, Ricoeur finds himself primarily addressing technology in a deterministic sense rather than a social constructionist sense (i.e., failing to sufficiently address material and social concerns), where the ladder makes up roughly the last thirty years of scholarship.[16]

In the end–using Kaplan[1] and Wolff[2] as proxies for general lines of thought–we see each view seems to be incomplete regarding Ricoeur's intention; however, it is clear that both positions are inspiring in their own right in regard to how Ricoeur's thought can influence 21st century scholarship. As it turns out, both Kaplan and Wolff have most recently converged toward a middle ground in 2021 and I hope is to make the destination of their convergence explicit. In fact, in section II, I describe the positive positions each thinker advances as a way to demonstrate that even the initial disagreements between thinkers are already quite compatible and that scholarship should now become forward thinking as we brush off Ricoeur's *corpus*.

It is worth stating explicitly why I have selected Kaplan and Wolff as interlocutors. Kaplan, a careful scholar of Ricoeur's critical philosophy and a philosopher of technology in his own right, has developed his perspective within the new empirical wave of philosophy and, thus, is intimately familiar with where Ricoeur diverges from recent scholarship. Wolff, a well-regarded Ricoeuran scholar and political philosopher with a focus on decolonialism and existential phenomenology, is also a consistent and valuable contributor to the philosophy of technology using Ricoeur's *corpus*. Both Wolff and Kaplan represent two different types of Ricoeurean thinkers in the space. Within the direct philosophical treatment of technologies, Kaplan represents a "no direct value added" view due to Ricoeur taking a purportedly outdated stance on the ontological status of technology, whereas Wolff takes a "underappreciated value added" view, where Ricoeur contributes far more than he is typically credited.

I briefly use these views as proxies to demonstrate that Ricoeurean scholars are generally undecided about how we should think about Ricoeur's work in the present technological age (i.e., which parts to adopt and which

parts to discard). My intention is not to remake the arguments made by Wolff and Kaplan for *why* we should use Ricoeur's work; on this, I defer to each thinker. However, I intend to add that Ricoeurean scholars, and those not yet acquainted with his work, need not grit their teeth as they use Ricoeur's *corpus* to study technological artifacts as they interact with the world–as if we must selectively interact with some of his work while trying to not absorb problematic ontological commitments about technology. Ricoeur's philosophy of technology, while distinct from current literature, is entirely consistent with the empirical turn of the philosophy of technology and is poised to find immediate application. I offer a few brief areas of future research to conclude in section III.

What does Ricoeur mean by 'Technology' and 'Technique'

Philosophy of technology over the last thirty years has tended to focus on the practical features of technology. In this way, a given technological artifact operates as an embedded, dynamical feature of a social environment. For instance, a mobile device informs a person's ontological status in the world and how persons relate to each other, while that person(s) predicate(s) meaning into the actual artifact–technology and persons are reflexively linked. As such, it would follow that technology, in the abstract, does not have governing logic that can be confronted with purely critical analysis. Rather, technology must be studied via how particulars reflexively interact with human society or given cultures–both in how it "reflect[s]" and "change[s] human life, individually, socially, and politically."[7] This view is in response to some 20th century thought, such as Habermas, which had a transcendental focus that pushed back on human life being decontextualized and reduced to technology and instead emphasized persons as they relate to other persons. It has been recently noted that Ricoeur finds himself aligning frequently with this view.[8] In this way, those advocating for such a transcendental position might be seen as taking a 'pessimistic' view of technology in that technological artifacts first and foremost are a threat to the rich interpretative meaning of the lifeworld. Thus, a distinction between persons and things is made.

On the surface, Ricoeur's thought might be improperly placed, in its entirety, among this class of philosophers. It is true that Ricoeur was primarily concerned with a similar project as Habermas, namely avoiding the reduction of cultural meaning or specific heritage to technological processes that act as a sort of universal rationality, but this is not all that Ricoeur believed was the case as some like early Kaplan[1] have argued. Ricoeur and those like Habermas ultimately have distinct approaches in important areas related to technology, like ideology[8]. It might be helpful to begin by tracing Ricoeur's thought through each of his proposed levels of analysis of human "civilization;"[9] in doing so, we will be able to see one of the ways Ricoeur themetizes technology, as Wolff[2] briefly discusses.

The clearest instance of Ricoeur's analysis of human civilization can be seen in his 1965 article, translated into English in 1973, "The Tasks of the Political Educator". In the article, he is primarily concerned with discussing inwhat 'analytic' level of society an educator can be most effective; in using the term 'analytic', Ricoeur is proposing a working distinction between each proposed level when, in reality, they cannot be taken as distinct and instead create a tensional aspect across layers.[9] [10] Ricoeur breaks civilization into "industries", "institutions", and "values", where civilization broadly gestures at all of humanity which is constituted by the three aforementioned layers.

"Industries" [«*outillages*»] as a category finds itself at the highest and most abstract level of society. It is something "which goes beyond the level of tools, machines, and even of techniques."[11] In this way, industries are the "accumulation of experience" that can be understood using "the tool and the machine,"[10] but are, in reality, an abstraction of a mere instance of a technological artifact's use. In this way, through industries, tools survive their "occasional use."[10] Industries are instead accumulated or conserved bodies of technological relations between communities and artifacts that belong to the whole of humanity. It is here where we see the typical critique of Ricoeur's position as he seems, on the surface, to take on a transcendental position, speaking as if technology is one homogeneous concept. He offers the same sort of claim with general knowledge and the sciences by saying that they "can be considered as an industry crystallized into disposable good" that leave "traces" that are "accumulated under the form of works, visible monuments, books and libraries, which comprise the experience of humanity."[10] In fact, he says, "this unique and universal aspect of civilization has always existed, but it is only now that we can become vividly conscious of it" due to the levels of which innovation has occurred recently.[10]

Ricoeur was similarly clear about this civilization category in his 1965 chapter "Universal Civilization and National Cultures" by arguing that civilization, defined the same way as above, has a positive and negative sense. In the positive sense, as previously mentioned, Ricoeur believes there is one "original universality, with its scientific character, [which] permeates all human technics with rationality"–meaning that the whole of humanity has the potential to benefit when something new is created.[12] On the negative side, this creation of a universal rationalization–which is constituted in part by the abstract sense of technology along with science and general knowledge– creates a "sort of subtle destruction . . . of the ethical and mythical nucleus of mankind"[13] via the reduction and homogenizing of specific cultures or heritages.

In this way, technology at the most abstract level of industries has a tension between "the new rationality of calculating efficiency and the old rationality of our shared cultural and political life."[14] This is what leads Kaplan to the following conclusion:

> On the few occasions when Ricoeur did discuss technology, he generally agreed with Heidegger, Marcuse, and Habermas, each of whom contrasts the dehumanizing characteristics of technology and technological reasoning with more humane forms of experience and action[15]...The problem with this pessimistic view is that it is unoriginal, limited, dated, and false. There are too many different things we call technology to be captured by the notion of a single technological rationality that ostensibly underlies them all. The empirical approach to technology studies understands it hermeneutically and contextually: technology must be interpreted against a cultural horizon of meaning, like any other social reality.[14]

It is here where those who take the view of Kaplan[1] would be correct if Ricoeur has no additional complexity in his thought. At the highest level of civilization, in the most abstract sense, technology for Ricoeur can be viewed in a pessimistic way as globalization in the post-1950s led toward hyper-efficiency and what is ostensibly called "neoliberal" ideology. For Ricoeur, this trend threatened to reduce social meaning to mere instances of tool use, scientific data, and general innovation preserved over time in some universal rationality without the use of contextual and hermeneutical thought.

However, Ricoeur's work cannot be left here as it leaves his view incomplete in two ways. First, Ricoeur does not believe that technology in the most abstract sense is intrinsically pessimistic, but rather that it is tensional and ambiguous;[16] this is a type of claim–namely that a phenomenon is both ambiguous and tensional–that is established throughout his corpus, for example in how he thinks of live metaphors.[17] Second, technology in the ambiguous sense can only be fully understood by acknowledging the character of Ricoeur's definition of "technique".

Let us first deal with the ambiguity of technology. Ricoeur is not interested in discussing technology in a transcendental sense for the sake of technology itself, but rather his abstraction of technology into an ambiguous, universal rationality is a "recognition that it [technology] is an indispensable part of affirming the unity of humanity, the irreducibility of politics and the significance of valuation."[18] This is because, in conducting his analytical study of civilization, Ricoeur continues to work beyond industries into institutions and values. Here, institutions are defined as the discourse of "politics–that is to say, the exercise of decision making and force at the level of the community."[19] Below the institution are values, by which Ricoeur means "concrete valorizations such as [those which] could be apprehended in the attitudes of men in regard to other men — in work, property, power, temporal experience, etc."[20] This brings Ricoeur to the following conclusion: "[a]n available tool remains an abstraction independently of the value that we give it and which inserts it into an historical context. An industry is only useful and only operates if it is appreciated and positively valorized [via concrete

values].”[20] Here, we can start to question whether Ricoeur's thinking really is as all or nothing, or "take it or leave it", as some suggest.[21] [22]

In this way, for Ricoeur, when trying to understand technology, it must always be embedded at a contextual level because "[e]ach historical group only appropriates its own technical and economic reality through institutions" rather than some transcendental meaning of technology.[23] In other words, Ricoeur "[speaks] of ambiguity in opposition to progress" because "[t]here is progress in the order of industry in the widest sense one can give this work which not only includes material techniques but also intellectual and spiritual attainments. But what men do through their institutions is always uncertain."[24] As such, technology for Ricoeur is a multiplicity of histories that can only be understood through institutions of power and local techniques.

It should be recalled here that technology is not just ambiguous. In parsing technology apart from techniques, we see why Ricoeur has his working distinction between persons and things. A recent thesis written by Carney[25] shows that techniques for Ricoeur "are the outcome of practical engagements and questions [in institutional work] but they also, in turn, raise further questions and challenge practical understanding" when separated from technology.[26] In separating the technological from the technical, the study of technology can become properly hermeneutical between the dialectic of applied knowledge [«*techné*»] and theoretical, industries-based knowledge [«*technologie*»]. In Ricoeur's words, "[t]here is no technique that is not applied knowledge, and there is no applied knowledge that does not depend on knowledge that has first renounced all application. *Praxis* cannot summarize man. Theoria is also its *raison d'être.*"[27] In taking the 'long route' through interpreting a given technical use of a tool in context and how it relates to its place within technological history at the abstract level, it can be seen how new interpretative possibilities of meaning emerge.

We can see this sort of approach in full bloom in Ricoeur's "The Adventure of Technology and Its Planetary Horizon"[28]–his clearest "proto-empirical" philosophy of technology. In the article, he essentially takes on a particular artifact, namely the Sputnik satellite, and explores its implications to social contexts in a nuanced and multi-valued perspective–including the sociohistorical engagement of work, consumption, and self-understanding.[29] We also see verbiage that we would not expect to see if Ricoeur truly took a pessimistic, purely deterministic view of technology. For instance, consider the following:

> Tool, sign, [and] institution imply each other: as such the tool, finally, proceeds with the power to transform things via discourse [«*parole*»], and according to a prescribed order. We can turn these three notions over as we wish, each one referring to the others. In this sense there is no beginning of the technique prior to that of humanity; the beginning

of the technique merges with the beginning of humanity, which all at once works, speaks and puts in order its social relations.[30]

If we take Ricoeur's persons and things distinction seriously about technology in a metaphysical sense, he is at risk of contradicting himself. However, we must remember that Ricoeur speaks of this distinction throughout his work in only a semantic sense–in other words, Ricoeur, just as his complicated relationship with 'modernity', has no ontological commitment between persons and things but is merely interested in showing that one discourse cannot be reduced to the other.[31] In regard to his discussion of technology he claims that his analytic method is "only provisionally determining a series of levels and articulating these levels;"[9] similarly, he has said elsewhere about the physical and non-physical (e.g., technological artifacts and their context) that "this semantic dualism [...] can only be a point of departure" because "[i]n a certain way—how I am not sure at all—it is the same body that is experienced and known; it is the same mind that is experienced and known; it is the same person who is 'mental' and 'corporal.'"[32] As such, through parsing apart technology and technique, Ricoeur has given us an explicit path toward understanding technology as Wolff[2] advocates; in doing so, we are afforded the remainder of Ricoeur's frameworks to explore the empirical dimensions of technology as Kaplan[1] advocates.

I should briefly point out that even though Ricoeur engages with a specific technology, namely Sputnik, its uniqueness in the Ricoeur corpus demonstrates that, while Ricoeur indirectly acknowledges that engaging with a technological artifact at such lengths is fruitful, he remains firmly in a 'proto-empirical' school of thought.

Bridging the Literature

Thus far, we have been able to explore generally what Ricoeur has to offer to the philosophy of technology in an explicit sense through a single example. Like much of Ricoeur's work, he is thorough and comprehensive in scope in his writings about technology. In different places in his *corpus*, he takes a balanced approach to both the conceptual and analytical sides of his exploration while being careful not to parse them apart. As such, it has been shown that Ricoeur is aware, if not accepting, of the positive and inevitable contributions technology makes to thought and society,[33] while also warning against a potential technological monopoly in epistemological, cultural, and societal forms that Kaplan[1] elegantly lays out. Through this exploration, we have shown how the pessimistic view of Ricoeur's philosophy of technology, represented by Kaplan, [1] is not supported by full extent of the literature. However, the highly optimistic view, which is represented by Wolff,[2] while supported in several instances must be constrained; specifically, while Ricoeur does directly thematize technology in a 'proto-empirical' way, the

sparseness of this work suggests that Ricoeur cannot be thought of as pervasively resisting a deterministic view of technology.

Having dealt with the negative and positive arguments, I offer a few brief comments on both approaches that Kaplan[1] and Wolff[2] utilize–where each philosopher has served humbly, via each of their brilliant and thorough writing, as a proxy for two general views on Ricoeur's work in technology. Specifically, I make explicit that, despite the pessimistic and optimistic tenor of each view, respectively, both thinkers believe Ricoeur can add to the philosophy of technology in contemporary literature. I agree with both thinkers on this front, and in fact, am hoping to solidify the relevance of Ricoeur's perspectives as a helpful tool for current scholarship.

Kaplan[1] and Kaplan[4] engaged in a careful reading of what is largely missing in Ricoeur's philosophy of technology. Ricoeur, while having traces of empirical leanings in his work as I have shown here, rejected the empirical turn due to his interests lying elsewhere–even if it should be considered consistent with the philosophical tools Ricoeur provides. I share Kaplan's later observation, citing Abel[34], that "[f]or moral reasons, Ricoeur takes great pains to respect the differences among the philosophies he brings together" instead of trying to synthesize the best parts of various philosophies.[35] Even with Kaplan's thorough critique, he offers an inspiring take on what Ricoeur can offer the philosophy of technology. He powerfully captures in clear and meticulous writing five broad themes from Ricoeur's work that can serve as productive philosophical frameworks for thinking about contemporary technologies[1] with a similar follow up again in Kaplan.[36]

Kaplan[1] suggests that we can draw upon the work of Ricoeur to better understand the philosophical connotations of technology, using four central themes. First, Kaplan proposes that we view technological objects as 'texts' in the sense that Ricoeur used the term – they bear meanings that are not solely tied to their creators or users. Second, Kaplan introduces Ricoeur's model of hermeneutics as a tool for reconciling the technical aspects of technology with its social implications, illustrating how these two facets are intricately linked. Third, Kaplan refers to Ricoeur's interpretive theory of narratives to explain how technology is woven into the tapestry of our personal stories, influencing our self-perceptions and life experiences. Finally, Kaplan points to Ricoeur's moral-political philosophy as a means of assessing the ethical and suitability of technology, promoting the idea of democratic involvement in setting the course for technology policy.

Let's look at this value through a brief example. Consider the popular smart phone application "Instagram" as a technological artifact for study. On Kaplan's account, we can apply the four major frameworks derived from Ricoeur's work to better understand the philosophical implications of this specific technology. You will notice that each theme essentially co-opts a

thread of Ricoeur's thought rather than using it for its intrinsic value to study technology.

Theme 1: Technology as text. Considering Instagram as a text in the Ricoeurean sense, we recognize that it has meanings and implications independent of its creators and users. The platform, in this sense, can be seen as a cultural artifact that is constantly being created, modified, and interpreted. Users engage with Instagram by posting photos, stories, and comments, but the platform itself also shapes the way people interact with it. For instance, it can abstract traditional understandings of friendship to "likes" as affirmation, mutual following as passively maintained connection (as opposed to actively reinforcing the relationship through mutual understanding and discourse) and limit the visibility and type of social discourses (e.g., via the recommendation algorithm and comment character limits). Thus, Instagram is not only a product of its users but also an influential force in shaping their behaviors, norms, and expectations.

Theme 2: Hermeneutics. Ricoeur's concept of hermeneutics can be applied to understand the dialectical relationship between the technical and social dimensions of Instagram. On the one hand, Instagram is a technological platform with specific features and design elements that enable photo-sharing and social interactions. On the other hand, these technical features are intertwined with the social practices, norms, and values of its users. For instance, the type of content lends itself well to Instagram–highly visual and engaging depictions of the world–can lead to reinforcing particular social values. For instance, the platform allows for highly curated and attention-grabbing photos of a given user (e.g., "selfies"), which can reinforce and communicate cultural norms of attractiveness, can suggest the desirability of particular products for achieving those norms, and can exclude posts or users that fall outside of those norms (e.g., via Instagram's algorithm "deciding" what content is or is not engaging). To fully understand Instagram, we need to recognize the interplay in this spirit and appreciate how the technical aspects of the platform influence and are influenced by the social behaviors of its users.

Theme 3: Narrative theory of interpretation. Instagram, as a technology, figures into the stories of our lives by allowing users to create, share, and consume visual narratives. The rise of the "influencer," where people's influence on a community is measured through literal, quantifiable metrics of follower counts, views, likes, and so forth, communicates particular narratives to users about whether or not they have broader social value or worth. Through posting photos, stories, and comments, users actively participate in shaping their own identities and experiences, as well as those of others. The rising visibility of certain stories, identities, and experiences suggests something about how people should or could think about their own stories. Instagram thus serves as a platform for self-expression, storytelling,

and the construction of personal and collective narratives, which ultimately helps to define who we are and how we perceive the world.

Theme 4: Moral-political philosophy. Ricoeur's moral-political philosophy can provide a framework for evaluating the rightness and appropriateness of Instagram as a technology. Questions about privacy, data ownership, and the impact of social media on mental health and well-being are essential to consider. In this context, his work suggests that democratic participation in technology policy becomes crucial, as it allows for the inclusion of diverse perspectives in the decision-making process. Such participation can help ensure that Instagram and similar platforms remain transparent, accountable, and adaptable to the needs and values of their users.

Despite Kaplan communicating these frameworks, he left out some of the more nuanced components of Ricoeur's thinking about technology in "The Adventure of Technology and Its Planetary Horizon" and "The Tasks of the Political Educator," which I used to suggest Ricoeur's work escapes the charge of being "unoriginal, limited, dated, and false"[14] in section I. Kaplan has softened his view on this front in his recent 2021 book chapter.[35]

Wolff[2], who had the benefit of writing roughly 14 years after Kaplan[1] with a presumably greater accessibility to Ricoeur's scholarship, takes command of Ricoeur's entire corpus through the early 2000s and can explore several explicit ways Ricoeur directly thematizes technology in a productive, original way. I will describe just two here. First, Wolff credits Ricoeur with the careful examination of the ambiguity of technology. In-line with what I have shown in section I, Wolff argues that Ricœur saw technology as having both positive and negative aspects and sought to explore this ambiguity in relation to various issues. A clear example of this, as Wolff fully unpacks, is how Ricoeur examines urbanization with its technological advances and how it can bring both opportunities and pathologies.[37] Through this examination, Ricœur aimed to develop a nuanced understanding of the ethical implications of technological development and adoption in society. Secondly, Wolff credits Ricoeur with exploring how technology exists as an aspect of human abilities to act and draws from countless examples over the entirety of Ricoeur's career to communicate the point. Specifically, Wolff highlighted the ways in which Ricoeur thought technological developments can expand or limit our ability to act in certain ways, particularly through power (e.g., "power to do something," "power over someone"). Through this consideration, Ricœur aimed to develop a deeper understanding of the relationship between technology and human agency.

However, caught up in his thoughtful and positive argument, Wolff fails to make explicit that Ricoeur, while having more than nothing original to say about technology, does resist the empirical turn in a way that is perhaps inappropriate given his breadth of scholarship. Wolff also does not seem to fully acknowledge some of the commitments, whether semantic or otherwise,

that Ricoeur makes and therefore leaves the reader wanting more in the analysis of Ricoeur's "proto-empirical" works.

As such, each philosopher's perspective seems to compliment the other while also reinforcing the adage *ne quid nimis*–nothing in excess. In other words, the primary disagreement between each thinker seems to be about what it means to have direct relevance to the philosophy of technology (i.e., whether thematizing technology is a direct contribution). However, both works are a success at revitalizing life into Ricoeur's philosophical project and reinforces with inspiring rigor that Ricoeur still has much to say here in the 21st century. As such, I content from section I that Ricoeur's views are consistent with contemporary efforts and, here in section II, I content that the indirect disagreement between Wolff and Kaplan is a non-issue for those hoping to use Ricoeur's work in contributing to the philosophy of technology in both highly practical and forward-thinking ways.

This sentiment is reinforced via the release of the brilliant anthology *Interpreting Technology* edited by Wessel Reijers, Alberto Romele, and Mark Coeckelbergh.[3] In this work, we see five accounts of Ricoeur engaging with theories of technology – three of which I have engaged with here (i.e., Wolff, Kaplan, and Carney). Part two offers five additional pieces dedicated to Ricoeur's treatment of ethics as applied to Technology. Part three of the anthology offers roughly 100 pages of Ricoeur's relevance to continued scholarship in the 21st century. The areas of analysis include health information and telecommunication technologies, Ricoeur's novel work on metaphors as applied to software development, the connection between narrativity and the 'black box' of artificial intelligence, and how hermeneutics can allow for responsible innovations in various fields of technology. However, in the next section, I take the opportunity to briefly outline under discussed applications of Ricoeur's frameworks.

Future Applications: Ricoeur's Thought in Philosophy of Technology

As we venture further into the digital age, the application of Ricoeur's philosophy to the realm of technology and technology-related questions gains ever greater importance. In this section, I briefly suggest several potential areas of Ricoeur's ideas for future work that are severely under-discussed or have not previously been proposed.

Philosophy of Information

The philosophy of information is a branch of philosophy that explores questions regarding information, including its nature and dynamics, the philosophical problems it raises, and the philosophical concepts it suggests. The term 'information' has diverse meanings across disciplines and can range

from questions dealing with semantic information[38] to quantified metrics of information present in data (e.g., Shannon Information[39]). Across fields, particularly those interested in the quantification of information, researchers have mostly dealt with technical questions related to information-theoretic measures (i.e., the literal application and performance of the measures). For instance, in my home discipline of computational neuroscience, we spend a great deal of time applying information-theoretic measures to track "information flow" across neuronal networks (e.g., during "functional connectivity" research)[40] without properly dealing with whether the information being quantified or tracked is of intrinsic significance to the system at hand or whether it is merely something that is quantifiable. Within different information metrics and different disciplines, it is prescient for researchers to engage with questions such as "can meaning be reduced to computation," "is a given information metric or concept of intrinsically significant to the system of study and what are the criteria (or lack thereof) that would allow for such a judgment," and "is information, especially in numerical forms, properly interpretable." Through Ricoeur's *corpus*, we can engage with the degree to which information could be hermeneutical and the processes we could take as we look for meaning within information. This thread could be helped directly through Ricoeur's dialectic between technique (i.e., the literal quantification of information) and technological concept of information (i.e., the ambiguity of information and its impact and role). I will explicitly turn my attention to this thread in future work.

Online Personal Identity and Rights Over Those Identities

The proliferation of digital platforms and social media has led to the construction of online personas that may diverge from or even conflict with our offline identities. Ricoeur's narrative theory of interpretation can serve as a lens through which to explore how online personal identities are created, maintained, and transformed over time. By examining the role of digital platforms as texts, we can assess the impact of technology on our self-understanding and investigate the ethical implications of online self-presentation, including the effects of social comparison, cyberbullying, and online privacy. Additionally, as digital legacies persist after our physical demise, questions arise concerning the rights and identities of the deceased in online spaces. To what degree are our online identities proper instantiations of our personal identities? Do some platforms abstract away more features of personal identity and, as such, are they dehumanizing or communicating which features of personal identity are sufficient for the narratives of oneself to persist? Is there a distinction between commodifying one's online identity and likeness, and by extension the identity and likeness of others, and commodifying the physical and mental form of an individual in the absence of a virtual medium? Ricoeur's concept of the text, as well as his moral-political philosophy, can provide a potential framework for understanding

the ethical responsibilities of digital platforms. Furthermore, Ricoeur's emphasis on the phenomenological hermeneutics highlights the importance of interpreting and reinterpreting these digital legacies in light of changing social, cultural contexts, and lived experience, as well as the potential legal implications of digital inheritance.

Artificial Intelligence (AI), Software, and Machine Ethics

The rapid development of AI and machine learning technologies raises complex philosophical questions about autonomy, responsibility, and the nature of meaning. Ricoeur's work can be applied to explore the semantic constructions and ethical implications of AI and software via unpacking through Ricoeur's hermeneutical work on metaphors intrinsic within the design of a given technological artifact.[41] By employing Ricoeur's phenomenological hermeneutics and moral-political philosophy, we can develop a more nuanced understanding of AI's role in society and its impact on human values, while guiding the development of ethical AI systems that align with human needs and desires. It is also clear that Ricoeur's work in linguistics (e.g., Threefold Mimesis) can elucidate the limits of some of these technologies, particularly Large Language Models (LLMs), such as chatGPT, and can suggest ways of thinking about their use in educational pedagogy or within private enterprise.

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While not an exhaustive list, the application of Ricoeur's philosophy to these pressing areas of technology, and science by extension, offers a rich and promising avenue for future work when placed within a broader discourse with other diverse thinkers. By engaging with the dialectical relationships between technical and social dimensions, narrative construction, and moral-political concerns, we can strive for a more nuanced understanding of the ways in which technology shapes and is shaped by the human experience. Through such inquiry, we can hope to foster a more thoughtful, inclusive, and ethical technological future.

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[19] Ricoeur, "The Tasks of the Political Educator," 144.

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