Indisciplinary Technical Practice or Doing AI, Design, and Philosophy with Cards: Reflections on the Second Iteration of the Moments of Reading Workshop.

By Jordi Viader Guerrero

Invited by Daniel Leix Palumbo, fellow PhD researcher in this messy field we call AI, and Dr. Matt Coler, the second iteration of the Moments of Reading workshop took place on October 24, 2023 (thanks a lot to both and all the students who took part in it!). Designed by Dmitry Muravyov and myself and carried out within the framework of the Intro to Voice Technology course at the University of Groningen, this workshop has the objective of creating a space for philosophical reflection, or more precisely, conceptual expansion by means of a card game. The game focuses on the notoriously polysemic notions of 'AI', 'Design', and 'Democracy' (see previous post by Dmitry Muravyov for an initial reflection of the workshop's first iteration). While our first experiment back in March was directed to an interdisciplinary audience -ranging from engineers and designers to philosophers and law scholars- this iteration was aimed at master's students in computer science and linguistics. This change in audience is not casual, it implies a structural change in what this workshop is doing: from working as a bridge between disciplines to providing a shared space of non-hierarchical, non-specialized interaction. So, rather than acting as an interdisciplinary method (as the first iteration was framed) the classroom setting transforms the Moments of Reading Workshop into a practice of "indisciplinarity".

Lack of specialization tends to be disregarded as non-rigorous or inadequate for academic contexts – an absence of understanding of what is being talked about delegitimizes a speaker to make claims about it. Knowledge is here regarded as something obtained after a long journey going from the general, vague, ungrounded, and superficial opinion to the specific, concrete, grounded, and profound scientific assertion. This is, of course, a long-standing Socratic inheritance that imagines (designs?) knowledge as conceptual delimitation. That is, an analysis that breaks down abstract generalities into concrete and "grounded" concepts that can refer back to the "real" world out there. Scientific knowledge is only found at the final stages of this breakdown, in the most specialized branches of the ever-sprouting tree of science.

Grown unrelated to one another, interdisciplinarity seeks to connect these specialized branches. This is a project that can be done in several ways. However, Philosophy, like many other disciplines (I'm looking at you: physics, mathematics, semiotics, cybernetics, and nowadays computer science, design, and artificial intelligence), has had a chronic bad habit of presenting itself as the tree trunk grounding and connecting the different branches of knowledge. Under this model, interdisciplinarity is achieved by discovering a common root, a meta-language capable of unifying diversity.

While the relevance and value of specialized knowledge cannot be underestimated, it limits the scope of the activities that count as knowledge and, consequently, the type of actors that produce knowledge. This limitation is not only scientific or epistemic, but also political: the fragmentation of knowledge surreptitiously creates a hierarchization of activities that classify people between those who can produce (mental and specialized) knowledge and have a say on it and those who cannot and don't have a say on any particular domain. Although attempting to blur these hierarchies away, interdisciplinarity ironically risks recreating them if it insists on finding a meta-language, whether computational, philosophical, or designerly, that eradicates contradictions and smoothens out mismatches between domains. In yet another platonic move, interdisciplinarity enshrines as philosopher kings those who can speak the meta-language and jump between the particular and the universal. Instead of starting to consider that there might be no all-encompassing higher logic, interdisciplinarity's logic remains a vertical one: some knowledges count more than others.

The practice of democracy presents a challenge to vertical models of knowledge production. In a political organization that values equality, how can non-specialized political subjects have a say on things they have no (specialized) knowledge about? This is a problem that contemporary liberal democracies have stumbled upon time and time again to the point of exhaustion. Not only around discussions on AI, but on any topic that involves specialized knowledge: the management and institutional mobilization to control and make sense of the COVID-19 pandemic or the climate crisis are prime examples. As we know, in both cases popular trust in specialization has backlashed as it relegated the administration of public matters to seemingly closed-off and undemocratic expert circles.

Enter indisciplinarity. I borrow this term from design researchers Mahmoud Keshavarz and Ramia Maze, who critically approached the political assumption of consensus in participatory design practices through the works of philosopher Jacques Rancière. They propose indisciplinarity as an approach to organize the relations between participants of participatory design activities. For Keshavarz and Maze indisciplinarity is "an approach to framing collaborative activities in ways that avoid the hierarchy or domination of one discipline, one form of knowledge, or one person/group over another" (Keshavarz & Maze, 2013, p. 17).

Indisciplinarity is not exactly the rejection of expertise and specialization, but the critical acknowledgment that not all knowledge is produced within the specific practices and spaces of intellectual labor (academia, private research centers, governmental institutions). It is also the realization that knowledge production itself is not necessarily a tool for convergence and contradiction resolution. Indisciplinary knowledge can instead highlight contradictions and repurpose them to look with a new light inherited assumptions in practices and social relations of specialized knowledge production. That is, indisciplinarity can function as a critical practice (Agre, 1998) that defamiliarizes or deidentifies received schemes of knowledge production.

Moreover, indisciplinarity recognizes that deductive reflection and inductive experimentation are not the only methods for knowledge production. It allows for reframing knowledge not necessarily as the formalization, symbolization, or abstraction of phenomena through concepts, models, theories, or any other means of representation. To put int differently, it grants epistemic representations functions other than mirroring, depicting, or substituting. In this sense, indisciplinarity casts a doubt over the conflation between representation and represented – that knowledge is not only about copying the world in one's (the intellectual worker's) mind through representational models (see Agre, 1998; Barad, 2003; Ranciere et al., 2001). It puts into question that knowledge is something we (academics) consume, categorize, and safekeep in our individual minds – that criticality can only come from those who have a clear, holistic picture of a given discipline and that it is them who can be actors and receptors of knowledge.

So, what does this have to do with the Moments of Reading Workshop? And where is AI in all of this? As I mentioned before, this second iteration of the workshop was addressed to a less specialized (but not for that reason less relevant) audience of students. Students were not there as representatives of a discipline but to learn (and, of course, because attendance was mandatory). In this sense, they did not have any prior agenda to share or defend, nor did they have explicit vested interests in AI, design, or democracy (although one of the goals of the workshop was to make them realize that they do). In a class setting, the workshop was not about disciplines critiquing or asserting their explanatory relevance over each other. Instead, it was all about horizontal distributions: negotiating what cards can be placed next to each other, what cards make a better conceptual and visual configuration without a guiding assembly framework. I could continue describing this event as a successful space for indisciplinarity that promotes horizontal relations around topics so commonly plagued with the aura of expertise and call it a day. Practicing this horizontality is already a way of facilitating a democratic experience that de-compartmentalizes these domains and broadens the kind of subjects who can have a legitimate say on them. Nevertheless, while I don't want to diminish the importance of opening the possibility of discussing AI as a non-specialized domain and thus without performing the reverential nod of doing catch-up to big-tech engineers, I also want the ambitions of this workshop to be broader.

I would like to reflect on this workshop in order to link indisciplinarity with Philip Agre's notion of critical technical practice (Agre, 1998). Inviting students who are not yet fully inserted in the specific academic discourses of AI, design, and democracy to find links among terms drawn from their lexicons is, on the one side, an attempt to critically engage with pre-established definitions, habits of thought, and hopefully practices in technological design by defamiliarizing these terms and expanding their reach. On the other, it is also a speculation on what (philosophical) thought and critical technical practice can be if we further connect them to each other through indicisciplinarity. In short, I would like this workshop to be a (still very rough) example of framing philosophical reflection as a technical practice akin to design and engineering.

Agre claimed that a technical practice is to (specifically AI) designers and engineers what ideas are to philosophers (Agre, 1998). Engineers don't work with abstract ideas with claims of universality but are bound to an everyday practice of making things work: working and generating knowledge about tools and their usage in order to iteratively implement (often vague) intuitions into technical specifications for mechanisms. The results of technical practices are evaluated under the question, "Does this thing work?". This means, does it reach a desired state in the most efficient way? What I want this workshop to convey is that ideas are, in several ways, like material tools and, therefore, to approximate philosophy to a technical practice. This is not simply about complementing a technical practice with philosophy to make it "critical", "philosophical", or "ethical" (what Eggink and Dorrestijn propose as the practical turn in philosophy of technology. See: Eggink & Dorrestijn, 2018), but to think the work with concepts and ideas itself as a technical practice.

This ambition of reformulating conceptual labor comes from my experience (and probably that of many scholars) that the work of philosophical research is not aptly defined by cartesian introspective meditation, but rather with the very unglamorous daily use of

word processors, pdf readers, note-taking applications, slide show software, reference managers, search engines, etc. A daily practice aimed at assembling a very material machine (a text) through the negotiation with its medium-specific properties (meaning) and that of its material support (digital technologies). A machine that should effectively perform the task of being published, circulate online, and hopefully entering in another negotiation with a future reader. In short, a technical practice with (touch)screens, mouses, keyboards, and internet infrastructure (see Panagia, 2014), to create specific social relations (getting read and maybe receive a nice email from a reader at some point).

But what does describing philosophy as a technical practice implies? First, to start with the obvious one, to reimagine philosophy and theoretical research in general as a practice. This means, that philosophy is about *doing* something. That it is a daily iterative practice with tools, either conceptual or technical (although I would argue that they are both one and the same). It also gives a very different image of how knowledge is produced and the relationship between knowledge/science and technology: instead of technology being the application or implementation of theoretical knowledge or this knowledge being applied to a fleeting reality, knowledge is produced through the interaction with technology (see Pasquinelli, 2023) and, more generally, with a technologically constituted world. This also differs from empirical experimental methods as technical practice is not regarded as a means or a method to inductively extract concepts, but that <u>the practice itself is the knowledge</u>.

This paradigm is nothing new, I borrow it from practice-based or artistic research methods (Bishop, 2023; Busch, 2009; Citton, 2018) as well as from critical making (Ratto, 2011) and critical design (Dunne, 2008), and could be framed as designerly way of *doing* philosophy (a well-found and elegant expression suggested by Nazli Cila and Olya Kudina). What I appreciate from these approaches is that they share the implicit conviction that the uses and knowledge embedded in technological tools always exceed their original plans. If knowledge production is attached to the use of tools as I argue above, then we should accept that their possibilities must exceed their intended designs. Interaction with tools, i.e., design or technical practices, are not the application of knowledge but its active production. The issue of how to use technology is then not the techno-determinist problem primarily concerning design, designers, and affordances (although, of course, they play a fundamental role), but also that of the kind of knowledge-generating practices and cultures established around them (see Viader Guerrero, upcoming).

This brings me to the second implication of translating philosophy into a technical practice: philosophy as a technical practice is performed collectively. Practical knowledge of tools is not the internalization of abstracted concepts either obtained from (deductive) introspection or (inductive and empirical) experimentation. It is rather the creation, establishment, transmission, and eventual re-negotiation of shared practices. This doesn't necessarily imply a consensus on how tools are used – the point of a shared practice is not to get to the final, most optimized form or to an agreeable common denominator of that practice, but to continuously revisit and iterate on it without a clear theory guiding the entire process from the top. Knowledge as a practice transforms this apparently epistemological question into the political one of creating and sustaining communities of practice. Knowledge is then more about sustaining communities and their

ways of doing through (technological) abstractions than about producing abstractions as the end goal. Upkeeping ways of doing is a matter of creating tools and protocols of usage that simultaneously conserve them and push them to further evolve (since the usage of a tool always exceeds its intended use).

I will now go back to what students actually did during the Moments of Reading Workshop to clarify this idea of collectively practiced knowledge. Or, in other words, I will articulate this idea through what I wish to frame as an indisciplinary technical practice. During the workshop, students were given the task of relating notions belonging to the domains of AI, design, and democracy. This was done by using a set of triangular cards designed by the workshop facilitators (Dmitry Muravyov and myself). Each card shows a term and a text either explaining or using that term, and corresponds to one of the aforementioned categories: design, AI, and democracy. The instructions were simple: after dividing the class into groups, each of them was provided with two sets of cards containing all the terms from two of the categories and one single card of the remaining one. Students then had to collectively decide which terms made more sense to link to the given single card. For example, if a group got a term from the AI category {i.e., network}, they had to then select a card from the democracy set {i.e., representation; contestation; human rights; etc.} and one from the design set {i.e., speculative; human-centered; decolonial; etc.}. The conceptual logic as well as the visual arrangement in which this selection was made, developed, and displayed was left for them to decide. And it is here where problems arose.



The texts displayed on the cards for each of the terms are admittedly too long and academic for a non-specialized audience. This was done partially on purpose: we had the explicit intention to alienate participants from pre-conceived ideas they could have of these terms. However, we also wanted them to be an aid for grounding concepts, yet they left participants with more questions than answers. Nevertheless, the uncertainty created by this terminological difficulty, as well as the lack of examples of possible outcomes, set the tone for the students' engagement with the activity. Ultimately, the crux of it was just about collectively dwelling in and negotiating with this uncertainty. When presented with a tool (the cards) with no clear way of engagement and yet still expecting an (undefined)

outcome, the problem of how to use it becomes a problem of creating schemes for organizing the relations around them.



Yes, the text is too long.

The groups recurred to different strategies to overcome the initial terminological uncertainty: some of them proceeded to read the text in the cards and try to reflect about their meaning before attempting to come to the "right" decision (a long and boring chore of truth-seeking that would take way longer than the given 20 minutes). Interestingly but not surprisingly, some students outsourced this task to ChatGPT in search of clarification. There is a lot to be said about the expectations placed on AI to spit out objectivity and reduce uncertainty, as well as about the nesting a large language model algorithm within an activity that I would like to frame as an algorithmic practice (more on that later), but I will not go into this on this blog post. Some others recurred to the democratic trope of voting by setting up a simple hand-raising procedure. Whether students actually read the cards or not was irrelevant to this approach, its determinant factor being if the procedure was appropriately followed or not (whether each student was committed to the handraising game or not). And finally, some just went for iterative trail-and-error, quickly skimming through all the provided cards and sticking to what "feels" right without any clear procedure. These groups are an example of either completely evading the uncertainty problem or, perhaps, of simply feeling comfortable with dwelling in it, unconcerned about getting the connections "right" but simply with producing an outcome. As a side note, this procedure mimics the connectivist epistemologies of machine learning (Pasquinelli, 2023; Pasquinelli & Joler, 2020) that produce outcomes through iterative approximation and

self-correction after feedback (in this case my own feedback while the activity was taking place) rather than by possessing a theory or a formalized procedure for action.

While there were no correct answers to the assigned problem, the point of the activity was for students to articulate and visualize how they got to those connections. The cards are triangular for a reason. Inspired by the Hegelian online resource <u>www.hegel.net</u>, they are meant to be arranged as a triangular fractal or a <u>Sierpiński</u> triangle. That is, we imagined students creating a larger triangle with the three selected cards and, moreover, using the negative space created in between them to name and describe this triad. A meta-concept made out of concepts, a diagram rather than a word, showing not only static definitions but also their relations to other concepts and, most importantly, correlating them both to the explicit act of conceptualization carried out during the activity.



www.hegel.net

The fourth secret thing to be placed in the negative space between the cards is not yet again another concept with its corresponding definition, but a reflexive stance that sums up and thematizes how the concepts were disposed. In a word, designed. I wanted

students to design their own designing or conceptualize their own collective conceptualization process through the visual scheme afforded by the cards.

Concepts are incomplete without concrete relations. These relations are a stance that participants must take and perform by (implicitly) organizing a community of practice or engagement with the tool. This is what we call, echoing hermeneutical orientations, a moment of reading. In this sense, we hoped for the fractals or triads to be a different type of representational tool for a different type of (practical) thinking. Unlike concepts delimiting and closing off an idea from others, they were meant as tools for triggering, tracing, and future blueprinting of a moment in which a community practices a conceptual expansion. So, even if the fractal scheme is of Hegelian inspiration, this diagram is not meant to represent an upward movement of transcendental revelation of a new key concept (i.e., criticality), but a horizontal one to support the unfolding of a collective practice. I want to think that using these cards is more is more like using a highlighter when reading a text, a material aid to the supposedly mental activity of reading, than a way to capture a higher truth or message enclosed in it.

The results were, however, different, confirming my previous intuition that the potential knowledge held by tools always exceeds their designers' plans. During the first iteration of the workshop at the Industrial Design Faculty in TU Delft, the most interesting outcomes were those that disregarded the expected visual format and imagined new ways of visualizing relations. In my opinion, this was an astounding success: participants not only critically approached and expanded the given concepts but also imagined different forms of conceptualization, of relating concepts to one another. They intuitively understood that visual tools can be used to diagram and make explicit (make visible) our assumptions around conceptual work and imagine new formats for it (Celtic triquetras or octagonal honeycomb patterns, for example).



I also didn't know this $\uparrow\uparrow$ was called triquetra (or at least it resembles one). Octagon under construction.

However, the outcomes of this second iteration at Groningen University were not as visually inspiring. This "failure" does signal a tension between an aspiration of epistemic indisciplinarity and political horizontality with championing a model of critical technical practice as a designerly way of doing philosophy (and AI). Emulating design and engineering and immersed in iterative making, philosophy as a critical technical practice is too concerned and captivated by results. Philosophy as a critical technical practice risks reducing conceptual labor into assembling machines that work. An objective that goes against one of the intentions of this workshop. Namely, presenting the discipline of AI, and more specifically critical AI, as something more than writing critique to produce even more machines that work – machines that work to better address social and political qualms through better, more "critical" or "ethical", technical specifications (see what Davide Panagia calls epistemic reformism in critical AI discourse: Panagia, 2021). If we are to foster an indisciplinary technical practice, then we need to be open to a lack of results and stop designing firm grounds from where to neatly sum up all our critical intuitions.

To be fair, we are also perpetuating this tendency. Our intellectual habits are too critically oriented to resist the disciplinary expectations of philosophy and design. The expectation that the cards would function as a sort of diagram, visually putting concepts in relation to one another, came with the hope of evading extremely vague results. This means that, even if our machines are assembled with cardboard cards conveying concepts, we hoped for particular visible results. Specifically, we had expectations of what we wanted to avoid: the much feared "everything is related to everything in every way". That the card assemblages did everything and therefore nothing at all. This is the one of the great criticisms made by analytical methods to expansive, synthetic, or imaginative ones: that no knowledge can be generated without delimitation, without properly identifying what we're trying to define in the first place.

But then again, if knowledge is a practice and not its outcomes, we want these triads not to be a reflection or substitution of the collective engagement with tools through formalization, but a diagram initiating and tracing an engagement for its possible future reproduction by other communities of practice. In this sense, the cards hold a conflictual position as representational tools: they are a diagram triggering an algorithm of interaction as well as a medium to record it, while still being a picture or a formula to abstract it.

Maybe it's because of this ambivalence on what the cards are supposed to do that we did not avoid the feared "everything is related to everything". Especially in this second iteration of the workshop, I reckon that I failed to emphasize to students our interest in their collective decision-making processes, and that the cards are a tool for them to make distinct choices about how these terms relate to each other semantically and visually. This means, that they are <u>expected to make decisions</u>, which implies making exclusions as well as connections. Hopefully for future iterations, focusing more on the fact that they are expected to use the cards as a means to reflect, visualize, and support their cooperation will lead to more concrete relations between the chosen terms. With any luck, this might also prime students to a make a more explicit connection between conceptual relations and the practices of collective organization around the technical medium with which they are performed.



Students presenting their triads to the class

To conclude, the workshop is meant to re-present conceptual labor or philosophy as expansive, practical/technical, and collective. The technical work of experimenting with tools to produce a visual (or material) expression that expands conceptual relations and creates/sustains new communities of practice.

On this note I want to mention my current dissatisfaction with the name of the workshop. As mentioned earlier, a moment of reading is a reflexive, performative, and non-essentialist portraval of what a concept is. Nevertheless, I have a growing nagging feeling that this hermeneutic metaphor doesn't properly express a technical and indisciplinary take on knowledge. Reading is notoriously an encounter with a technical tool (text in all its presentations) that has traditionally been inclined to erase its own mediation. Expectations of transparency, immersion, or clarity make the act reading a text seem like the direct transmission of ideas. Furthermore, guoting Agre, "it suggests a solitary "reader" facing the practical reality of technical work as an individual. Technical work is performed in and by communities, and a critically engaged practitioner cannot hope to found an alternative community in which everyone shares the same critical premises and methodologies" (Agre, 1998, p.17). Also, following Vicky Kirby's critique of Latour, the reading metaphor gives off this idea that we, humans, are in this ontologically distinct position from which we are compelled to read and write the world (Kirby, 2011). That is, again, that knowledge has more to do with the symbolic capacity of representing and abstracting the world than to acting and reenacting ways of inhabiting it. This view reproduces a one-to-one or face-to-face relation with technology, as if there was one qualitatively different and hierarchically superior relation (that of the reader, the scribe, the artist or designer, all of which we are at the center of), rather than a reconfiguring network of horizontal actors. This is also why I am ultimately dissatisfied with a paradigm of mediation (see Rosenberger & Verbeek, 2015; Verbeek, 2011) to fundamentally describe human-technology relations.

I am now thinking about how to rebaptize this workshop. I am drawn to something along the lines of connecting cables or something related to audiovisual production, as it entails cooperation and collective labor (although highly hierarchical). I'm inspired by my work with Tommaso Campagna on online video streaming setups for <u>THE VOID</u>. But more on that on a next blog post.

Speaking about metaphors and branding, I would like to end this (extensive) blog post with the provocation of "branding" this workshop as AI. With this I mean to think about this workshop not only as a space for discussing AI and its relations to design and democracy, but as a very rough draft of what a practice of AI seen through the lens of indisciplinarity and critical technical practice (indisciplinary technical practice) could look like. This idea is inspired by Matteo Pasquinelli's notion of algorithmic practices and his counter-history of AI (in this case, machine learning), not as the culmination of an intellectual history of technical formalization through symbolization (the automation of the mind, interiority, and intentionality as the long-awaited meta-language), but as the alienation of practical knowledge from workers. The dispossession of technical know-how from laborers through technical abstractions. This idea (along with Davide Panagia's notion of dispositionality and Bernard Dionysius Geoghegan's ecology of operations. See Geoghegan, 2019; Panagia, 2019), places AI (as a technology and as a research discipline) within a tradition that both valorizes and weaponizes the spaces and knowledge of making, the knowledge of the hands.

This blogpost started as commentary on knowledge production, something that's not a coincidence for a discipline concerned with intelligence. Thus, I would like to finish by noting that if conceptions of knowledge production change, our expectations of automating or emulating intelligence do so as well. The project of AI, as a technology and as a discipline, stops being that of computationally emulating intentional action (creating an artificial mind), but that of technologically distributing social relations through the automation of know-how. How and for what purposes these relations are distributed, whether formalization necessarily implies automation, under whose terms this formalization takes place, and who gets to own this know-how once it's formalized and embedded in machines, become crucial questions for AI. Indisciplinarity and other "critical" (for the lack of better word) design approaches can give a clue for answering them. If knowledge is not the individual assimilation of concepts but collectively performed activities protocolized through technology (whether cards or neural networks), AI, like philosophy, shows itself not merely as a technical device (algorithms, concepts) and starts resembling communities of (hopefully indisciplinary) technical practices.



I wrap up with a misuse of our own scheme. Please don't think that indisciplinary technical practice is a concept that subsumes and overcomes all contradictions between AI, design, and philosophy, but more as the highly conflictual collective practice that affords linking them together.

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