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LURKING IN THE GAP BETWEEN PHILOSOPHY OF MIND AND THE PLANETARY

Abstract

This article outlines an emerging tendency prominent in the theory and practice of the art & technology domain to 'horseshoe' the urgencies of planetary-scale technology with questions traditionally associated with the philosophy of mind, conventionally placed at a much lower level-of-analysis. It delineates and problematises this trend in the theoretical plane, before considering the 'interpersonal', stemming from the work of Hannah Arendt, as a mediatory level of analysis, and ground from which to reconcile these contemporary concerns. This intervention acts as a methodological clarification. The implications of this shift are explored for the theorisation of 'minor tech' projects as scalable systems which originate at the interpersonal, but can leverage change upscale.

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Introduction

Big Theories which engage 'advanced technologies' (Serpentine R&D Platform, 2020) in general – and machine learning (ML) in particular – are burdened by ambiguities of scale. In one direction there lies a tendency toward analysing phenomena at the grander macrolevels of 'planetary computation' (Hui; Bratton). At the opposite end of the scale, the zoomed - in investigation that characterises 'mind' or 'cognition', and its technological equivalents, operates in the other (Metzinger; Gamez) characterised by dense metaphysical perplexities. When brought together in the art & technology field to confront seemingly urgent technological problems, the respective complexities and agendas of these distant 'big' and 'small' scales compound to produce confused conceptualisations of 'planetary-scale intelligence'. Though the urgency of analysis across scales necessitates such work, the way such scalar reconciliations are performed requires evaluation.

At first this article lays out in more detail this problem of scale, or 'level of analysis', for the contemporary theorisation that is implicated in the art and technology domain, assessing the contemporary tendency to pull together scalar extremities without reconciling the critical tensions between them. It then goes on to focus on an intermediate level of analysis, the 'interpersonal', tested as a ground from which theories can be built, but also from which these micro and macro level phenomena can be interpreted and assessed more effectively. In all, it proposes a course correction in which these 'horseshoed' instances of interscalar theory are mediated by the social domain of the interpersonal.

The scalar horseshoe problem

It might be taken, on the face of it, that discussions of scale presuppose increasingly smaller entities at one end, and increasingly larger entities at the other. Aiming to illustrate a maximally noncontroversial view of this intuitive scalar setup might look like this:

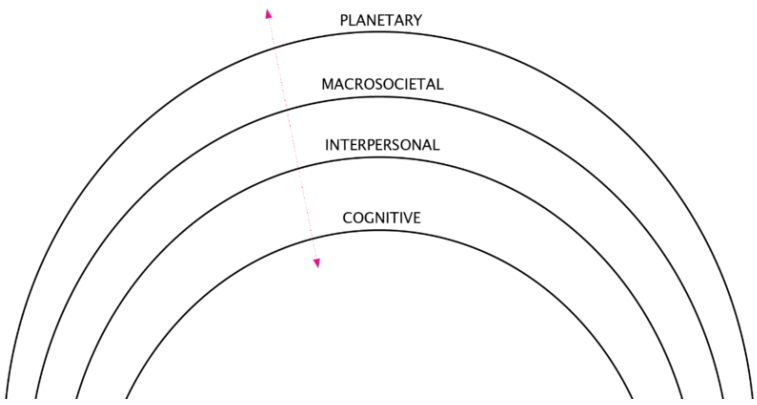

Figure 1 illustrates a maximally noncontroversial view of levels of analysis.

Here our epistemological categories carve up our world along the intuitive lines of 'big' (the planetary) through to 'small' (the mind) as we know them from our prima facie human (though not necessarily humanist) standpoint. In order to detect, record, measure, and then talk about 'bigger' entities, like the 'planet', we need to zoom out, through abstraction, in order to comprehend them. This requires losing some granularity. Some entities are arguably too big to quantify and measure in the first place, only knowable through conceptual abstraction (Morton). In order to make sense of the microscopic, we are required to zoom in, thus foregoing the sense of 'perspective' that might show us how things fit together.

This intuitive view however assumes that scalar levels can be understood as affixed to what might be called 'entities' ('substances' or 'objects') rather than 'process'; that 'bigger' entities correspond to 'bigger' processes, and 'smaller' entities to 'smaller' processes'. It makes an assumption about 'bigger' relations between bigger entities, and 'smaller' relations between smaller. It assumes that processes and relations do not transect scales. It also conflicts with emerging tendencies to be found across philosophy, art and technology in which the macroscopic and the minute are sometimes horseshoed into speculations of planetary-scale cognition to compound their urgencies. Here, a lot of the concerns about localised phenomena (human-scale cognition) are imposed upstream on grander-scale infrastructure, a trend also particularly widespread among discussion of the seemingly 'cognitive' capabilities of recent large language models (Berardi; Floridi). Here, and most currently, debates surrounding the nature and conditions of 'thought' and 'agency' are, reasonably, extended from localised agents to planetary-scale infrastructures in order to assess emergent phenomena. But in testing these concepts at the planetary scale, swathes of relational activity, traditionally situated between the cognitive and the planetary, are bypassed, and the role of such social, or interpersonal, processes in constituting global cognitive systems run the risk of being neglected.

This tendency is widespread in the context of artistic practice, and particularly amongst those engaged closely with the overlapping posthumanist (Braidotti) and vibrant materialist paradigms (Bennett). For the sake of good-faith engagement with the problem at hand, I will focus on the upstream theoretical sources that engage and sometimes inspire – often through superficial interpretation – such horseshoeing, since they reveal their rationale explicitly, allowing fuller engagement with its core assumptions. This acts as an alternative to targeting specific art practitioners through an interpretation of their work, where these ideas are deployed in embedded and operative contexts. This methodological decision reflects a commitment to take art practice seriously as a contributor to theoretical discourses, while allowing its practitioners the space to engage in speculative thinking, in this way levelling theoretical questions at the appropriate interlocutors.

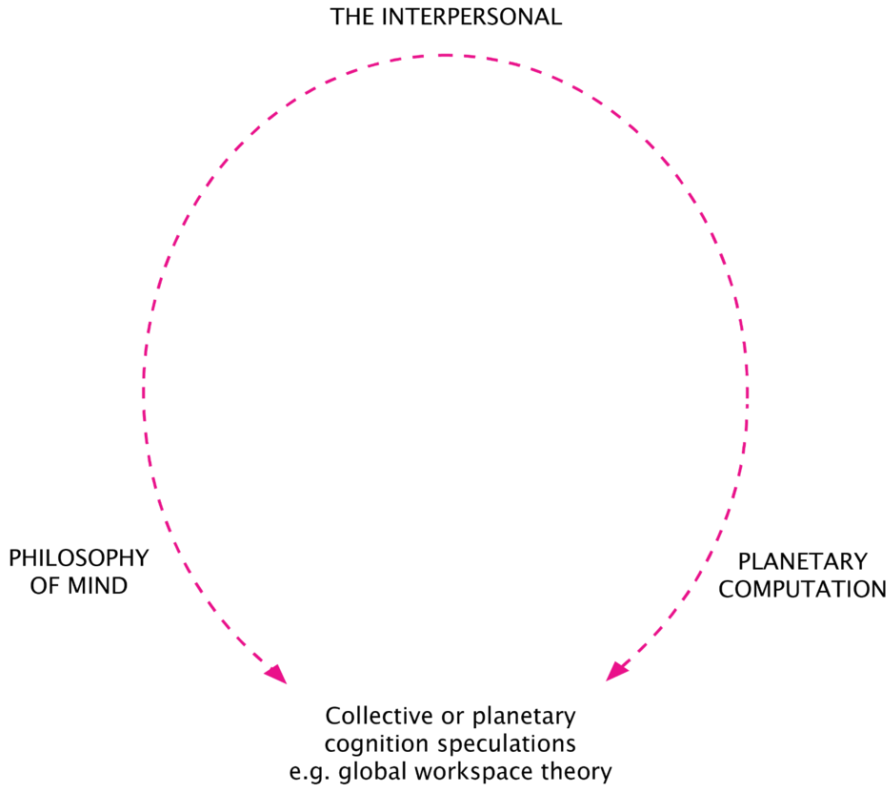

Figure 2 illustrates the warping of the pink arrow from fig.1.

The problem

The basic setup here – specifically the scalar gulf that separates questions of 'mind' from questions of 'the planetary' – tracks with Robin Mackay's problematization of the relationship between the local and the global scalar levels, in Mackay's case their invocation in conceptualising so-called 'site-specific' art practice. They level a warning that's relevant to us, outlining

> the vague notion that [...] the entire universe is compacted into every site, giving rise to invocations of the type 'we are all made of stardust' – sentiments which, whether uttered in a mood of wonder or cosmic desolation, effectively put an end to any navigation of the space of knowledge" (Mackay 261).

Here the small contains the big – in fact, every small (or local) entity (in this case 'site') contains a totality (the universe) – deeming the ontological status of such claims tautological. If every site contains the universe, each site is rendered equivalent in its potential for artistic and conceptual explication. This tautology from 'site-specific' art pairs with another tautology implicit here when Mackay refers to 'stardust' – that everything is connected, an intellectual commitment that sometimes troubles vibrant materialist approaches to art & technology (across theory and

practice). The question that is derived from this analysis for our purposes then becomes: how do we build a theory of interscalar, planetary technologies in cultural practice which avoid the trap of these 'universe in every site' and 'everything is connected' tautologies? In light of this, I will consider how such planetary-scale systems of computation can be influenced by non-conglomerate actors – 'minor' technologists, artists and theorists working in tandem.

The 'planetary' scale

By the admission of one of its most prominent analysts Yuk Hui, 'planetary' is 'largely interchangeable' with the previously-fashionable and now-laden 'globalisation' (Hui). Despite this concern, a good faith rendering of the planetary and its specific conditions can be delineated by turning to the work of Patricia Reed (2019) who offers a deep explication of the concept and its explanatory potential. The scale of the planetary is not simply a replacement for a level of analysis, in her view, but contains within it stacked relations:

> The "planetary scale" serves as an initial, terminological index for this big-world condition of coexistential nth dimensionality. Particularly deployed in discourses on climate change and ubiquitous computation throughout the last decade, the planetary scale, in general, describes the consequential magnitude of (some) human techno-economic activity. (Reed)

The planetary scale should not be viewed, from this perspective, as a total abstraction in which the detail is left behind, but a high-dimensional scale which contains, necessarily, lower-dimensional scales, and their activity therein, which constitutes the planetary as a whole. It is also anchored in reference to a particular planet, Earth, inclusive of its biomes and atmosphere, though it leaves open the possibility for extraplanetary and interplanetary analyses. Here, the 'local' is shaped by situated relations elsewhere, a highly interdependent plurality which is only contained by the 'planetary' as an organising principle: "sites or situations are co-constituted by extra-local relations. There exists an array of contextual conditions that co-produce any instance of localization" (Reed). Importantly, viewing the planetary as this navigable scalar stack makes possible the containing of intermediary levels of analysis, and a framework through which to map the relations that transect them.

Such a view of the planetary might complicate scales by acknowledging, for example, the leverage that cognitive decision-making in the sphere of politics might have for planetary-scale entities, even prior to the emergence of intervening technologies. Moving across scales is a phenomenon that takes place both in practice, then, and analytically, when we build theories or narratives to account for the interaction that takes place across Reed's 'nth' dimensions. The problem is not then working across scales, or that the planetary abstracts away the possibility of engaging those intermediary levels; but rather, how those scales are moved across,

and what is carried. These mediate not just the inter-locality that she argues for, but also play an explanatory purpose which can help to account for how such planetary scale systems emerge out of said interdependent localities. This will be addressed shortly in the section on the 'interpersonal'.

The 'mind' scale

Often, to explain emerging technological phenomena, such thinking turns to 'small'-scalar concepts, frameworks, or even simply assumptions, from the philosophy of mind – or indeed neuroscience (VanRullen and Kanai) as an interdependent field – the disciplines(s) best tooled to think about questions of agency viz. sentience, consciousness and more precise concepts of 'thinking' in general. These invocations are not always carefully deployed and integrated with planetary speculations however. We can analyse a viable theory which performs this operation by turning to Global Workspace Theory (GWT), as just one recent, and technically relevant, example that brings questions of mind into the realm of planetary-scale ML computation. It imports, from a specific neuroscientific model, that

> shared information at each moment in time – the global workspace – is what constitutes our conscious awareness. In functional terms, the global workspace can serve to resolve problems that could not be solved by a single specialized function, by coordinating multiple specialized modules (VanRullen and Kanai 1).

As such GWT is implicitly physicalist insofar as it commits us to the position: if consciousness is an emergent property of complex material organisation which spans multiple functional zones, then we should consider the possibility that consciousness might emerge out of a global infrastructure of machine learning. Though GWT should not be inherently conflated with a total planetary intelligence as argued for elsewhere (Frank et al.), the type of 'conscious awareness' proposed by this position is planetary-in-scale because of the infrastructures required to support such constituent neural networks which compose the Global Workspace. This would be constituted by not just the active neural networks that are taken as the core of such technology, but further by the much more expansive support structures (Mackenzie, 2017: 23) the substrate of data production and scraping which human populations contribute to. GWT is just one of many approaches to considering the planetary computational viz. the qualities or capacities of mind. Such speculations are also well-represented in posthumanist literatures, one compelling example being Betti Marenko's "Hybrid Animisms" (Marenko 7). Here, Marenko speculates the possibility of more complex relations of computational and human mind though distributed and planetary infrastructures: "assemblages have become us, in a milieu of organic, nonorganic, human, nonhuman, carbon, silicon, atoms, bits, which is creating an 'incipient machinic sensate world', a world which is both sensing and sentient" (Marenko 12). Marenko's federated view of the planetary-in-scale operable system reflects a broader shift in artistic speculation, seeing technology not as discrete tools, but rather part of an intraoperative whole.

Such huge scalar leaps between the 'planetary' scales of contemporary computation and the functions traditionally ascribed to 'mind' might reasonably concern the 'minor' technologist though, as well as a broader base of critics sceptical of such conceptual manoeuvres, given that it makes technology the domain in which these highly abstract and sometimes obtuse philosophical debates are being conducted. This is not to suggest that a planetary-scale view of computation more generally is somehow inaccurate, but rather that, regardless of the position, some explanatory theory at lower scalar levels is necessary to reach such conclusions. Here, a different level of granularity from which we can build theories of human-computational interactivity is needed, through which the jump from the processes of 'mind' and the planetary-scale computational infrastructure which demands theorisation, can be linked or grounded? The 'interpersonal' has been considered elsewhere by Jeremy Bendik-Keymer (2020) as a response to the planetarisation of thought, but here is forwarded as a mediator and starting point for course correcting this horseshoeing trend amongst the art & technology field.

The interpersonal

Not all theories which contend with the culture of planetary-scale technological infrastructures depart from the macrolevel. Hannah Arendt, considered here via Patrick Hayden's (2015) reading, posits that human activity is situated in the interdependent field of "the space of appearances" in which thought and deliberation take place as common activities. According to Arendt 'labour' – the cyclical toil that provides us with sustenance – and 'work' – the processes through which we co-constitute the world – are distinct (Canovan and Arendt ix). 'Work' is in part the building of a common technological infrastructure – "a composition of human artifice" built together through 'work' (Hayden, 2015: 754) – which can be understood in some holistic sense, like the 'planetary' as per Reed, except that its construction takes place within a more local frame of reference that we not only understand, but iteratively build and occupy. 'Work' forms a common ground also for thinking through the reciprocal relationship between cultural production, which renders our world a particular way, and the building of technological infrastructures, which shapes the way this cultural production takes place. Both are brought into being through collaborative engagement, requiring multiple hands for each iterative component, as well as the accumulative production of Arendt's composite human artifice.

This frame of reference – or rather scalar level of analysis – can be identified as the interpersonal, encompassing the social and productive relations that take place outside of, and between, our introspective selves (i.e. beyond the bounds of 'mind' as conventionally conceived). Analysing these relations (Drichel) as interactions, exchanges, and collaborations in work and labour all help to account, at a more granular level, where a planetary-scale computational system comes from and how it operates. It also enables the human contributions to such planetary systems, that appear and are sometimes analysed as autonomous (Bratton, *The Terraforming* 13),

to be made visible, not in the interests of arguing for some universal truth about the nature of human-machine collaboration, but to render the specific human contributions to specific computational systems which compose any arguably overarching planetary superstructure like those we've seen speculated.

Locating 'work' within the interpersonal allows us to identify where lower-level processes interface with grander-planetary-infrastructures. Downscale work constitutes upscale infrastructure, which then determines the conditions for the world in which we subsequently live and work. Arendt calls this the 'objective' world that sits between humans and nature:

> Against the subjectivity of men stands the objectivity of the man-made world rather than the sublime indifference of an untouched nature [...] Only we who have erected the objectivity of a world of our own from what nature gives us, who have built it into the environment of nature so we are protected from her, can look upon nature as something "objective" (Arendt, 137).

Though on first reading this view of the constructed infrastructure of humanity appears to aggrandise, here Arendt is pointing out that such infrastructure is a part of, and interfaces, humanity with, the natural world – "built it into" – our shared environment from which any infrastructure fundamentally derives. But more importantly is to understand this 'objective' constructed world that we live in not in the epistemological sense, but as something that shapes our existence in the same way as the 'natural' components of our environment. Once we build it, it is there, and we must live with it or attempt collectively to reshape it, through work or political action. Any planetary-scale computation, then, comes from our collective work, but must subsequently be worked with.

This view of the interpersonal appears compatible with Reed's conception of the planetary, then, who aligns on this question of 'situatedness' of human processes in interscalar existence. But it insists on a bottom-up approach to understanding the processes of building a planetary-scale computation. To be sure, the nonanthropogenic processes that enable this – geological formation of the natural resources which are shaped into such computational, for example – are best accounted for across planetary-scale geological time in the first instance, as Arendt suggests when she argues that:

> material is always a product of human hands which have removed it from its natural location [such as] interrupting one of nature's slower processes, as in the case of iron, stone, or marble torn out of the womb of the earth. This element of violation and violence is present in all fabrication, and homo faber, the creator of the human artifice, has always been a destroyer of nature. (Arendt 139)

But this extraction is an empirical matter of historical record, and though planetary in scale is totally distinct as a claim from the speculations of emergent cognitive

phenomena across infrastructure, for example. This is perhaps where scalar distinctions are best made then: from the point of view of analysing such divergent processes, despite the contingency of one (planetary computation) on the other (geological mineral formation and extraction). This interscalar dependency is also where 'level of analysis' diverges from any ontological argument about scalar levels which can be "carved at their joints" since the levels of analysis we use to examine different processes must best serve that analysis.

Leveraging change upscale

We come to know the Planetary, then, through discursive and interpersonal work, in which lower "nth-dimensional" levels give insight into the construction of higher ones. This is also where we build the 'total artifice' of planetary-scale computation, creating infrastructure at scale incrementally, piece by piece. Thinking our contemporary technological circumstances through this set-up, in which technological 'work' takes place in our midst, though often behind closed doors, might lead us to ask why we often focus on understanding technology at the planetary scale in the first instance. I would suggest that this tendency comes from seeing technology as an artefact or abstract condition to be evaluated in postproduction rather than a distributed and simultaneous field of research & development which can itself be entered – this behind-the-scenes is discussed in the Creative AI Lab as the "back-end" (Bunz and Jäger). The barrier to access then becomes a practical and methodological one then rather than an ontological impasse. This is not to say that we don't engage in analysis across scales, but rather that we can share a ground with such technology and it's developmental contexts.

If we adopt this Arendtian framing, then we can shift to seeking access (the practical) and identifying how to build an analysis (the methodological). If we want to understand technological developmental work at the scale of the conglomerates – which is vital – we must follow in Jaton's footsteps, seeking permission to access their personnel and environs (Jaton). But if we are interested in the systems built by artists, we should seek the hospitality instead of artists themselves, and engage in R&D processes that brings them into the world, as well as the institutions that sometimes house the most intensive technical research practices. Here, we move from critique, an inheritance of an art historical discipline tooled for a different time, to an engagement with the process of production which is more granular, and perhaps even reciprocal.

In refocusing our analysis on the work that happens at the interpersonal level, though, there remains the problem of executive management over such systems of technical work. Nation states have political leaders; technology companies have CEOs; universities have chancellors and boards, with funding bodies upstream. These exert pressure on the kind of 'work' accounted for here, applying political pressure, command and control, and funding constraints which determine how work is carried out. 'Minor tech' projects in general, and art & technology examples in particular, offer a pathway out of these downward excursions of creative control.

Though working outside of corporate contexts profoundly reduces the resourcing available to practitioners, the purposes of such work is also different. Firstly, these projects are characterised by different delivery pressures: new technical systems here become an end in themselves, their development not beholden to performance metrics defined by profitability. Secondly, they can become incubators for thinking which is developed more horizontally between those involved, allowing the executive function, design and decision-making to become federated and localised.

Finally, and perhaps most importantly, these 'minor' artists' projects act as subsystems (or countersystems) within a corporate-dominated landscape of technical R&D: what Meadows (1999) calls a 'leverage point' which can initiate broader change. This can take many forms. Artists (and their collaborative teams) can develop new ideas to then seek scalable funding streams; they can produce prototypes that become exemplars, acting as a proof-of-concept for alternatives to the naturalised systems of the inherited Trad Web. An artists' system or platform can be bootstrapped by a community of engaged users (see *Hivemind*, 2022) more effectively than trying to present it from an early stage as monetizable. Once operable, a 'minor' technological system, positioned in this way as a proof-of-concept, is exactly what is required to undermine the hegemonic platforms that seem beyond competition. Though they might never scale to serve mass markets, their adoption by smaller communities offers the possibility of a comparatively more 'organic' growth pattern, or no growth at all, remaining the domains of specific subcultures. While such systems (autonomous of hegemonic platforms) are a promise more aligned with blockchain infrastructures, the servicing of smaller communities reignites this possibility for 'scalability', originally the promise of capitalism, negated by the market's capture. Here then we zoom out again, from mapping the artist's system as delimitable, to situating each as an enactive subsystem within a broader systemic landscape; perhaps what might now be the Arendtian artifice. Remembering that the action takes places at the interpersonal level, though, should give us hope that change can be leveraged upscale.

Thus, when we leverage change from the interpersonal scale to the state or planetary-scale through minor projects, we are engaging in what Ray Brassier calls the "collective self-mastery" required for true "self-governance" (Brassier 74). In this respect, the project of building anything 'planetary' – infrastructure, culture, politics, or systems which combine both – is an incremental one. The interpersonal and planetary should be seen as co-constituted, as well as approximately and imperfectly mappable. As such, the horseshoeing of mind and the planetary which inspired these reflections becomes a worthwhile critique of the field if, and only if, we go on to see the mechanisms of 'mind' as they are embedded in the social interactions of the interpersonal. It is in this way that we break the initial tautology of 'the universe in every site' from Mackay. Seeing such mechanisms embedded contextually, again as in Reed, means we might be better prepared with a framework for thinking through the cognitive implications of new technologies. This allows space for the relational elements of posthumanist approaches, like Marenko's,

to remain profoundly important, while also subject to good faith critique as part of a wider discourse.

My purpose here has been to share some thinking on the conceptually-grounded methodological struggles of theorybuilding in evasive empirical contexts such as ML corporate and artistic development, where the stakes seem high but technical access can be elusive. The purpose of departing from the 'interpersonal' is to provide a starting point for establishing where to look in trying to understand planetary-scale technologies that have metaphysical implications. But undertaking such analysis allows the carrying forward of particular elements of each of these scalar approaches, while grounding them somewhere empirically more verifiable. This helps us to reduce abstraction by attempting to build theories from the ontological level that we are most accustomed to, while delivering a framework which can bear the abstraction necessary to discuss these urgent questions.

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