

## Panel 3. Simondon and AI: A Collective Individuation in the Year of His Birth Centenary

### Convenors:

*Fabio Iapaolo, Politecnico di Milano*

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**Keywords: AI, Gilbert Simondon, Individuation Theory, Machine Learning, Socio-technical Assemblages**

At this historical juncture, when thinking about society seems inseparable from AI and related data-driven technologies, the work of French philosopher Gilbert Simondon is receiving renewed attention. Although his writings predate recent advances in AI and machine learning by decades, they are becoming increasingly relevant to contemporary reflections on these technologies. Simondon's legacy spans disciplines, influencing theorisations of technical cognition (Hayles, 2017), automated labour (Stiegler, 2016), digital media (Hui, 2016), Blackness and computation (Amaro, 2022), and algorithmic governmentality (Bardin and Ferrari, 2022), as well as research on specific technologies and contexts (e.g., Liyanage, 2024).

In retrospect, the resurgence of Simondon's oeuvre is hardly surprising. In *On the Mode of Existence of Technical Objects* (2017), his commitment to placing technicity at the heart of sociocultural enquiry resonates deeply in an era of inscrutable AI systems. At the same time, his tripartite framework of elements, individuals, and ensembles continues to offer a rich lexicon for articulating the co-constitution of agencies across the human-technology continuum. Equally important is his pursuit of a relational and processual ontology, further elaborated in *Individuation in Light of Notions of Form and Information* (2020), which has long unsettled the rigid binaries and essentialism that advancements in AI expose as ever more untenable. Unifying his thought is the notion of the transindividual—a co-individuating dynamic linking individual and collective life—which unfolds as fertile terrain for exploring the uncharted forms of sociality AI may yet bring into being.

As we mark the centenary of Simondon's birth, we embrace his genuine technical curiosity as a lens for engaging with AI both critically and generatively, thereby avoiding the comforting retreats into either technophobia or technophilia. With plans for a follow-up special issue, this panel welcomes contributions—whether theoretical, empirical, or both—that engage with Simondon's ideas, unrestricted by disciplinary, thematic, or methodological boundaries. Rather than outlining a predefined set of research questions or topics, we encourage submissions that, once brought together, may reveal emerging patterns of political concerns, ethical orientations, and research trajectories, especially those intersecting STS concepts and theories. In this way, we hope to facilitate a collective process of individuation, with Simondon and AI as the associated milieu.

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## ID 893 - Simondon Reads Cybernetics: Thresholds in the Social History of Technology

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**Keywords:** cybernetics, Simondon, political technology, social quantification

Both the work of Gilbert Simondon and cybernetics as the 'prehistory' of artificial intelligence have recently been the subject of renewed critical attention (Pasquinelli, 2023). Much attention has rightly been given to Simondon's critique of the cybernetic concept of information and homeostasis, which allows for the identification of certain points of contact between the cybernetic conception of the social order and neoliberalism (Bardin & Ferrari, 2022; Halpern, 2022). The paper focuses instead on the role that cybernetics played, according to Simondon, as a threshold in which technology, for the first time in history, could present itself as a science of the social order (Consolati, 2024).

While the relationship between social science and technology is generally studied from the perspective of the technological modeling of society through cybernetics, Simondon's reading of cybernetics as a new *Discours sur la méthode* allows us to recognize the reverse process: that is, the way in which technology has incorporated models and methods from social science (Simondon, 1989). The historical role of cybernetics lies in having brought to consciousness the possibility of considering matter itself socially as a process of adaptive learning aimed at reproducing conditions of stability. In this way, the historicity of society is consciously reduced to a question of the continuity of behaviors, representable in terms of input and output, while technology intervenes to modify the relationships of authority that run through the social body.

From this point, the paper sets out two objectives: the first is to understand how this reading of cybernetics relates with Simondon's interpretation of other major historical shifts of the past, particularly the Renaissance and the Enlightenment, as thresholds that transform the relationships between techniques, institutional patterns, and culture. The second is to question whether AI and the related "social quantification sector" (Couldry & Mejias, 2019) represent a further threshold for redefining the links between the social order and its technology, or whether, from this perspective, they simply continue the cybernetic threshold.

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## ID 688 - Simondon and the "Gestalt Controversy"

Freya Häberlein, Leuphana Universität Lüneburg

**Keywords:** Gilbert Simondon, Gestalt, cybernetics, artificial intelligence

Early discourse on artificial intelligence is marked by what came to be known as the "Gestalt controversy", that is, as atomistic versus holistic approaches to the idea of cognition. In the work of Gilbert Simondon, this controversy is reflected in profound philosophical terms, as he critically analyses both substantialism



and hylomorphism as models for explanation of the genesis of the individual. According to Pasquinelli, who recalls the post-World-War-II experiments concerned with artificial neuronal networks, the Gestalt controversy was marked by the question of "whether or not human perception is an act of cognition that can be analytically represented and therefore mechanised". While Simondon does not explicitly address the question of artificial neural networks, he is nonetheless theoretically situated within this controversy, as both his critiques of automation in cybernetics as well as the idea of the good form (Prägnanz) in Gestalttheorie show. This contribution therefore aims to read Simondon's critique of modern psychology as a proto-theory reflecting on what, if anything, artificial intelligence could be conceived of in a way that is situated between these two positions.

In the time following World War II, especially during the Hixon Symposium in 1948, attended both by cyberneticians and Gestalt psychologists, the argument raised against artificial intelligence by theoreticians favourable to Gestalt was that human perception could not be mechanised, as this would involve a level of abstraction and universalisation that a machine could not achieve, given the infinite amount of isomorphisms (producing insight) in human perception. Cyberneticians, however, claim that human cognition can indeed be reproduced via automation, that is, that it can be derived via a mapping of the organisational properties of predetermined patterns. As Andrea Bardin points out, Simondon's philosophy is situated between cybernetics and the Gestalt school in an attempt to come up with a different understanding of the notions of both form and information. For Simondon, the claims made by cyberneticians that thinking can be wholly automatised is essentially a myth, and hence, information has to be understood both in terms of structure and operation, as that which signifies the relation between sender and receiver, and thus critically enquires into the hitherto existing static notion of homeostasis, especially in the work of Norbert Wiener. However, he also rejects the claim that there is something intrinsically incomprehensible to consciousness that exceeds all systematic science and that is metaphysically struck by the good form as a stable absolute. By conferring Simondon's critique of modern psychology to the theoretisation of cognition in terms of artificial intelligence, this paper aims to read his work as a position-taking in early discourse on AI.

11 JUNE 2025 14.30 - 16.30

SESSION 1

## ID 870 - "Anthropo-/socio-/zoo-/biomorphisms" as Foundational Processes for Human-AI Relation

*Juho Rantala, Tampereen yliopisto*

**Keywords:** Simondon, AI, anthropomorphism

The presentation considers the foundational role of anthropomorphism and other "morphisms" in the human-technology relation with the help of Gilbert Simondon's thinking. His philosophy of technics as well as analyses on information, imagination, invention, magical thinking, and images pave a way for more profound understanding of these "morphisms".

As Brian Duffy summarises, anthropomorphism is the "tendency to attribute human characteristics to inanimate objects, animals and others with a view to helping us rationalize their actions" (2003). It can also be thought as a special case of sociomorphism that effects, as the prefix indicates, humans. Thus, sociomorphism is, to summarize, tendency to attribute any kind of sociality – or livingness (biomorphism) – to inanimate matter, objects, or phenomenon. In addition, it is possible to differentiate also "zoomorphism", which is tendency to recognize animal features from different phenomena. Other studies have connected especially anthropomorphic tendency to more foundational relation or interaction of human with their milieu. This reciprocal cognitive mechanism – which might partly have its foundation in genetics – is, on the other hand, automatic and, on the other hand, constructed among the interactive relation between the individual, the object (or phenomenon etc.) and the environment. Thus, this framing of a situation of interaction, which also partly creates the situation, has its roots in social living and being.

The anthropomorphic situation also requires the framing of problematics, which, in turn, leans partly on narrativity and myths. Here, narrativity has images as its genetical elements. These images must be un-



derstood more profoundly as grounding images, kind of processes that tie together perceptive units – they are intra-perceptive and nonvisual. This nonvisuality rises out of biological domain: the image as a thought process is already (partly) formalized in pre-individuality, which, in turn, works as a foundation for ontogenesis (or individuation). Anthropomorphism (or socio-/biomorphism) is a schema that works upon this image, it is a kind of filter that extends to the environment and to the object/phenomenon. In addition, this cycle of images, that begins before perception, is tied to social domain through, for example, narrativity and myths, which has reciprocal effect on this cycle.

Technics (and technology) has become probably the most evident area that cultivates, uses, and occasionally challenges the anthropomorphic tendency. This is because technics is, as invented processes and objects, externalized human thinking and gestures. In addition, Simondon claims that it is also a more foundational and universal domain than, for example, religion – it strives to comprehend and answer universal problematics. Anthropomorphic tendency, as a complex multifaced process, grounds the relation between human and technics.

Better understanding of anthropomorphic (bio-/socio-/zoomorphic) elements in the relation between the human and the technics leads to opening and freeing the human and the machine (the technology) – as well as the co-constitution of subjectivity. This helps also framing and positioning of true problematics and avoiding "false problems" in AI. For example, complex problems like "uncanny valley" are connected to and created by the cycle of images that grounds these morphisms.

11 JUNE 2025 14.30 - 16.30

SESSION 1

## ID 350 - The transductions of a purple pixel: conceptual tensions at the boundary between human and machine

Raffaele Andrea Buono, University College London

**Keywords: Simondon, AI, transduction, machine learning, sociality, signification**

This paper builds on 18 months of ethnographic fieldwork in a laboratory working at the intersection between robotics, AI and neuroscience. Particularly, the work of the laboratory attempts to shed light on human capacities for linguistic communication, while also building efficient robotic prototypes that mimic said capacities. I attempt to highlight vernacular conceptualisations of 'communication', by tracing the genealogy of tests performed. I focus on specific models (Variational Autoencoders), and their machinic implementation, which configure linguistic collaboration in specific technical, ontological and epistemic terms. In so doing, I show how 'communication' has vernacular contours which are dynamically diffracted and refracted via the functioning of the ML architectures being tested (Simondon, 2017[1958]), whose different regimes of operations construct specific modes of perception and inference (Rieder, 2020; Kockelman, 2017). Particularly, I highlight a central oeuvre: that is, stabilising the continuity of perceptual information into discrete, communicable linguistic and/or statistical tokens. I recognise in such technical and epistemic concerns traces of the individuation dynamics described by Simondon (2020[1964]), particularly through the concept of transduction. In further analysing the inner workings of VAEs however, I begin to question the extent to which the capacities for generalisation (Reigeluth & Castelle, 2020) touted by unsupervised learning speak to the schematics of attunement and dephasing, individuation and pre-individuality provided by Simondon's conceptual vocabulary.

I take such questioning to the forefront by discussing a simplified experiment involving red and blue pixels: its simplicity allows us to follow the operations of the VAE, teasing moments through which the transductive movements of human perception do not seem to map out to the operations of the model. I focus on how UL models deal with outliers, such as a purple pixel in a neatly laid out latent space of reds and blues.

On the one hand, a human mode of engagement which discovers significations by amplifying difference, leveraging difference to de-individuate, constructing a meaningful, vertical, sedimented and porous history of "paths [...] [through which] the universe becomes ordered by individuating: [...] it is the signification of the system that has just been discovered as a unity that integrates the different anterior points of view"



(Simondon, 2020[1964]: 233). On the other hand, ML models which seem to operationalise the plasticity neuroscience has been increasingly fascinated with: recruiting, flattening, mediating and ultimately enclosing difference through horizontal permutations of individuals, functioning through constant adjustments and re-parametrisations against breaking points and impossible saturations.

Through such analysis, I close by bringing to the forefront generative questions around these tensions in the socialities of humans and machines. How do these ontological shifts impact ways of communicating and learning? How does the social get to be not only conceptualised, but experienced? In gesturing towards, without fully stabilising, these tensions emerging at the encounter between ontogenesis and individualisation, metastability (Bardin & Ferrari, 2022) and ultrastability (Ashby, 1960), human and machine, I hope for this paper itself to become a site for signification and transduction, as an unruly pixel was in the field.

11 JUNE 2025 14.30 - 16.30

SESSION 1

## ID 307 - Deep learning and "in-depth technology": the ethics of Artificial Intelligence systems

Diego Vicentin, Universidade Estadual de Campinas

**Keywords: Technologie Approfondie, Deep Learning, Ethics, Gilbert Simondon, Critical AI**

How to give depth to deep learning and find its ethics? Motivated by this question, this paper juxtaposes "deep learning" techniques of machine learning with Gilbert Simondon's (2014) notion of technologie approfondie ["in-depth technology" or "thorough technology"] in a dialogue with contemporary critical and decolonial studies on Artificial Intelligence (AI) systems. That exercise will proceed in three steps.

First, we're going to unfold the notion of "in-depth technology" as articulated in two brief works separated by thirty years, at the beginning and at the end of Gilbert Simondon's career (SIMONDON, 2014 [1953; 1983]). Giving depth to technology is a way to find its ethics and, through invention, recuperate techniques to their full potential. Clearly, technologie approfondie is a notion intertwined with the problem of technical alienation, to the proposal of technoaesthetics and to G. Simondon's broader project to develop non-autocratic relations with technology.

Second, inspired by Simondon, this paper will unfold deep learning techniques, such as convolutional neural networks and generative adversarial networks, in terms of their architecture, basic operations and political economy. It's important to uncover what is the knowledge depth produced by AI's deep learning in order to find its ethical meaning; to achieve this task technicalities and operations are as important as the "history of thought and consciousness of a society" (Simondon, 2014, p. 224). The [lack of] consciousness of contemporary society on current deployment of AI systems will be addressed with the help of critical and decolonial studies on AI (Benjamin, 2019; Crawford, 2021; Hui, 2020, Pasquinelli, 2023).

Finally, the article revisits potentials and limits of the notion of technologie approfondie, arguing that giving depth to technology depends on the overcoming of the "ethics of destruction" tied to European and anthropocentric epistemic colonialism. This involves diversifying ways of knowing and transforming the world through technical systems.

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## ID 358 - Technical culture beyond Simondon in the age of AI

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**Keywords: technical culture, maintenance and infrastructure studies, play, care, sociotechnical collectives**

Simondon's concept of technical culture was developed as a remedy to his diagnosis of a generalized technical alienation within our culture. Simondon was already coming to terms with the paradox that technology was increasingly ubiquitous while people seemed to know less and less about these entities, treating them more and more like strangers to be mistrusted or slaves to be used. Over fifty years later, Simondon's diagnosis is more acute than ever as digital technologies and AI systems mediate nearly every aspect of our activities and experiences, and as engineers themselves openly claim they do not always understand the AI systems they have developed. Simondon defined technical culture as an active, affective and cognitive engagement with a technical schema that can be experienced through the concrete functioning of a technical object. While he was quick to emphasize the collective and institutional dimensions to the development of this culture (namely through reforms of the schooling system), it is ultimately grounded in individual competencies, knowledge and skills.

In this contribution, I will argue that while Simondon's conceptual dyad technical alienation/technical culture remains a critical and heuristic framework, we must rethink its dimensions in light of contemporary sociotechnical realities. Indeed, the dizzying complexity and scale of AI systems defies, more than ever, any neat adequation between the individual "user" and the technical ensemble. Furthermore, the division of labor and specialization involved in the development and maintenance of these systems encourages us to think of the collective dimensions that a relevant technical culture would have to assume for it to effectively respond to contemporary technical alienation.

To make space for something like technical culture and following Simondon, we must first deflate claims of automation regularly made by industrial, political and media discourses around AI. Contrary to what is often claimed or promised, these systems do not work by themselves. They are embedded in social interactions, they make "errors" (which are often social, not technical, evaluations), require maintenance, consume energy and resources, etc. By looking at the growing "margin of indeterminacy" of these AI systems (i.e. the relative unpredictability of their behaviors and increasing embeddedness in social and natural milieus) that function more as social partners than mere tools, we can begin to understand the multiple dimensions of a corresponding technical culture. I would like to suggest that Simondon's framework can be complemented by aspects of maintenance and infrastructure studies that can help foreground the disparate kinds of labor, engagement and care that underpin the functioning of and interaction with these systems. By mobilizing empirical examples, I would like to broaden what we might consider a technical schema so as to include relationships with AI systems that are not limited to "expertise" or "mastery", but could better be described as a playfulness and carefulness. Thus, technical culture is less about opening the black box and mastering a technical schema than it is does about the collectives that share forms of knowledge, skill and care about and for these systems.

## ID 635 - Understanding technicity: towards a new approach to AI education

*Susana Aires, King's College London*

**Keywords: Gilbert Simondon, technical education, technicity, AI education**

At a time of unprecedented technological change, the oeuvre of Gilbert Simondon remains paramount. The rapid unfolding of AI technologies and the need to problematise their operation has led scholars to draw on Simondon's oeuvre to foreground, for example, research on the calculation of meaning of AI systems (Bunz, 2019), the evolution of algorithmic techniques (Rieder, 2020) and the nature of digital objects (Hui, 2016). While predominantly known for his study of the functioning and evolution of technical objects



(2017) and individuation theory (2020), the plurality of Simondon's thought spans various domains of life, including aesthetics, invention and education, among others. To mark the centenary of his birth, this paper delves into Simondon's vision for what he termed "technical initiation" (2014a) and "technical education" (2017), which, albeit scattered across his oeuvre, concurs with his fundamental concern, i.e., the "misunderstanding of the machine" ensuing from the "non-knowledge" of its functioning qua technicity (Simondon, 2017: 16). Specifically, this paper posits that Simondon's oeuvre can advance contemporary pedagogical practices in AI education.

In light of the fast-paced developments in the field, marked by the release of sophisticated AI systems in the public domain (e.g., generative AI, multimodal AI), many have argued for introducing AI technologies in the classroom, using these to deliver personalised education and to learn with AI. Few, however, have looked into learning about AI. To be precise, while there has been an emphasis on developing students' AI literacy, aiming at the safe and competent use of these technologies, we are yet to systematise an approach to learning centred on the technicity of the technical objects of AI, especially given the complexity and unintelligibility of dominant, data-driven techniques. To this end, this paper draws on Simondon's vision for technical education (2017, 2014a, 2014b), to lay the foundations for a pedagogical practice that promotes the understanding of AI technologies by engaging with its schemas of functioning. Combining the intuitive and the conceptual, the visual and the discursive (Simondon, 2017), the technical AI education proposed herein – as an ambition and pedagogical practice – draws on Simondon's analogical thought to mitigate the challenges posed by the operational opacity and complexity of contemporary AI techniques, whilst placing it within Simondon's wider theory of individuation, fleshing out the transindividual potential of contemporary technical objects of AI.

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## ID 831 - AI Beyond “the adversary of man”: Re-situating LLMs as Cultural Objects

Matt Ratto, University of Toronto

Sarah Gram, University of Toronto

**Keywords:** generative ai, LLMs, process philosophy, human-AI relations, machine learning, sociotechnical assemblages

Large language models (LLMs) seem like a fever dream for cognitivist thinkers, in which the situated and material nature of intelligence is replaced by a centralized, abstracted, and linguistic doppelgänger. These systems are purported to engage in human-level intelligence (whether now or in some proximate future) but without having to get their (metaphoric) hands dirty. Instead, LLMs are often claimed to exist in a pure world of language, deriving their intelligence (real or imagined) from the complex pattern matching of billions and billions of tokens – words – archived from the vast richness of digitized human textual activity. Critical scholarship importantly rematerializes these systems by resurfacing clear connections to “real-world” systems: their energy and carbon footprints, their sources of training data, and the embodied human labour used in their production. Our goal is similar, in that we wish to better situate the potential value of LLMs as cultural artifacts within emergent relationships with humans. Here, the work of Simondon and related processualist thinkers can help us better contextualize and understand these relations.

LLMs fit into a longer history by and through which the human mind has been ‘mechanized’ (Dupuy, 2000) and, simultaneously, we have ‘become posthuman’ (Hayles, 1999). LLMs are the latest systems through which cybernetic visions are realized, starting with Ashby’s Homeostat in 1948, the Perceptrons and early neural nets of the 1960’s, and culminating in the Convolutional Neural Networks and Transformer model for natural language processing that power current LLMs. Hayles describes the waves of machine intelligence as ‘seriations’, drawing on the definition of this term in archaeology to emphasize chronological progression but also relation – each successive wave builds from previous ones and artifacts that show up in later contexts are clearly related to the ones that came before. For example, the auto-regressive nature of LLMs (feedback loops) and their use of training and weights (neural nets) clearly derive from the previous waves of machine intelligence described by Hayles. While it is clear that LLMs ‘prehend’ and ‘concrese’ (Whitehead, 1929/1978) attributes from previous waves, do they, and genAI systems more generally, constitute a new wave?

We explore this question, leveraging Simondon’s concept of ‘co-individuation’ and other processualist accounts of agency (e.g. Barad, 2007.) We consider whether this wave can be considered as a potential change in human-technology relations, away from relations of interaction and toward relations of “intra-action,” (Barad, 2007) and “modulation” (Simondon, 2010 cited in Rantala & Muilu, 2024). By doing so, we intend to situate LLMs within emergent human-AI relations and therefore to re-open the liberatory possibilities in these new digital systems. By taking up a processualist perspective on LLMs in particular and generative AI more generally, we hope to move beyond understandings of AI as “technical individual entity” that is the “adversary of man” (Simondon, 1958/2017). Rather, we suggest that through the application of a processualist approach, we can re-situate genAI as an “open machine” that human beings can intervene in and transform.



## ID 737 - Techni(City): Environmental Cognition and the Techno-Geographies of Urban AI

Fabio Iapaolo, Politecnico di Milano

**Keywords:** Gilbert Simondon, Technicity, Environmentalism, Urban AI, Autonomous Driving

Attending to city-scale automation through the infrastructural and cognitive operations of autonomous driving, this presentation interrogates the distinct techno-geographies of urban artificial intelligences (AIs) as they concretize within and through urban environments. Bringing Gilbert Simondon's formulation of 'technicity' into dialogue with Jennifer Gabrys' articulation of 'environmentality', it reframes urban AI not simply as the deployment of AI technologies within cities but as a process generative of novel ways of "programming and concretizing environments and environmental relations" (Gabrys, 2016, p. 4).

If techno-geographies describe the spatial, material, and informational conditions that render AI actionable, then this paper introduces technicity as a conceptual lens for examining a double relation in which AI technologies—specifically self-driving cars—are at once conditioned by the environments they traverse while simultaneously transforming urban space as a 'condition of possibility' for their functioning. It is argued that as AI technologies become increasingly embedded in urban systems, they not only require the further exteriorization of cognition from individuated technologies into environments but also reconfigure urban governance and citizenship, engendering (as well as foreclosing) new modes of political subjectivation and participation.

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## ID 444 - The space of concretization: a Simondonian approach to technical development

Enrico De Martin Topranin, Università di Pisa

**Keywords:** concretization, AI, space, Simondon, technicity

The French philosopher Gilbert Simondon provides useful tools for a critical study of artificial intelligence. I want to bring out how Simondonian thought can be helpful to analyse the effects of algorithmic technologies in the political space (Bardin, Ferrari, 2022). By conceiving the technical object beyond its mere instrumental and innovative status, Simondon provides a dynamic perspective to study the relations between the technical pole and the political pole.

For those not familiar with the works of Gilbert Simondon, his concepts may appear obscure: in my presentation I intend to explain and clarify some aspects of it. I will focus on the concepts of concretization, technicity and associated milieu; the importance of spatiality will emerge as a link between technology, politics and geography. Concretization is defined by the author as the process through which an object goes from an abstract condition to a concrete one. The more concrete the object is, the more its technical functions converge. This way, the global operating of the technical object is not split in different structures. There is, instead, a simultaneous functioning between sub-systems (Simondon, 1989). The technicity of an object describes this process of technical progress. It qualifies a technical element as something that can be transported in a different technical system. This dynamism allows Simondon to conceive technicity as spatially widespread between different technical objects (Simondon, 2014). The concretization process brings into being an associated milieu, which is technical and geographical. The functioning of the tech-



nical object is mediated by the natural element around it; in this sense, the space of a technical object is not merely passive but active on the object itself (Simondon, 2014). Simondon recognizes the intersection between the techno-geographical space and the political one (Simondon, 2014, Hui, 2017). If relations between politics and AI are currently being studied (Bardin, Ferrari, Rodriguez, 2024), and environmental impact of AI is being investigated (Valdivia, 2024), I want to link these two different discourses.

Through concretization, technicity and associated milieu, Simondon offers an evaluative criteria of AI; these concepts allow to explore technical objects holding together technical, political and geographical elements (Simondon, 1989). Simondon's thought highlights the external influences that are placed on the technical object, for example by political, social or economic needs. In this way, it is considered possible to study AI showing its different stratifications and compositions, both technical and non-technical.

11 JUNE 2025 17.00 - 19.00

SESSION 2

## ID 533 - Agentification as Individuation? Generative AI, Reinforcement Learning and the Making of the Algorithmic Individual

Ludovico Rella, Durham University

**Keywords:** agentic AI, generative AI, individuation, algorithms, milieu

Generative AI has entered a new phase of hype, promise and investments under the banner of Agentic AI. From algorithmic traders to copilots, generative algorithms are being endowed with more and more individual-like affordances such as browsing the internet, taking control of a laptop, impersonating real-world people and so forth. This, in turn, begs several questions, to which a close reading of Simondon's theory of individuation might provide tentative answers. First of all, if this is an agentic turn, the question becomes what is the difference between an agentic and a non-agentic algorithm? Is the latter, and not the former, an individual and, if so, which mode of existence do algorithms inhabit? If they are at different stages of the process of individuation, what threshold is crossed between non-agentic and agentic algorithms? Furthermore, if individuation is always a relationship between the individual and its milieu, what specifically is the relationship that comes into play between an agent and its milieu? Which kind of environment is that which agents inhabit, how do they navigate it and how does it shape their mode of existence? Is that between agents and world a sui generis form of embodiment? How does the environment affect agential behaviour?

11 JUNE 2025 17.00 - 19.00

SESSION 2

## ID 609 - Pre-individual Per-sona: The role of voice in defining AI as an 'individual'

Francesco Bentivegna, University of Bristol

**Keywords:** voice, Simondon, pre-individual, performance arts, AI

The debate surrounding autonomous machines and art has only begun to scratch the surface of Performing Arts studies, where Artificial Intelligence is viewed as either an ideal of artificial life or merely a scientific tool that does not pertain to the field. However, the impact of AI needs to be critically examined and reimagined. Similarly, the role of voice in shaping 'AI identities' is frequently overlooked and downplayed. In this paper, commencing with AI vocalisation and speech synthesis, I aim to tackle the theoretical issue of 'the identity of the machine' by engaging with Simondon's theories on technicity in connection to voice and the performing arts. Starting with the role of voice and prosopopoeia as foundational elements of a 'godification' of AI, this paper intends to redirect the emphasis toward the relations we maintain with the 'mythical' AI, specifically examining metastability, pre-individuality, and technical objects. Building on Simondon's definition of the 'pre-individual' (1992, p. 306), Rosi Braidotti posits that machines exist within the meta-stability of the pre-individual, a site of potential post-anthropocentric becoming or the threshold to numerous possible worlds (2019, p. 98). I argue that such possibilities are 'generated' or 'imagined' through



the interaction of voice and language. In exploring this space 'within' machines, this paper will highlight three specific case studies, aiming to define and subsequently interrogate the notion of a voice in or of the machine, advocating for a voice 'with' the machine. I intend to investigate how the possibilities arising in the pre-individual state are articulated in contemporary performance practices, uncovering the voices in, of, and with machines while reflecting on my relationship with synthetic voices as a listener around which my argument is built: voice with the machine.

11 JUNE 2025 17.00 - 19.00

SESSION 2

## ID 815 - Beyond Instrumentalism: reframing human-centered AI through Simondon's philosophy of technical objects

*Luuk Stellinga, Wageningen University & Research*

**Keywords:** Human-Centered AI, Instrumentalism, Simondon

In recent years, 'human-centered artificial intelligence' (HCAI) has emerged as a prominent phrase in the societal debate about the implications of AI, framing the development, deployment, and governance of AI technologies. Despite widespread appeal to the phrase, current discourse on HCAI lacks critical reflection on the nature of AI as a technical object as well as human-AI relations, leading to an implicit instrumentalist perspective that treats AI technologies as means to human ends. As a result, current HCAI discourse is susceptible to wrongly conceptualizing the legitimate and pressing societal concern around the development of AI technologies in purely instrumentalist terms, reducing it to a matter of ensuring human control over AI. This view is both philosophically flawed and fails to map onto the reality of human-AI relations, as AI has come to shape human existence in more subtle and profound ways than can be captured by the instrumentalist schema. In response, we pose the question of how to ground the concept of HCAI in a richer understanding of technical objects that reflects the complexity of human-AI relations.

To begin, we provide a critical analysis of instrumentalism as a dominant yet reductive perspective in contemporary thinking about AI, reveal its shortcomings, and demonstrate the need for moving beyond it. A response can be found in Gilbert Simondon's philosophy of technical objects, which argues that instrumentalism stems from a false dualism between technics and culture (Simondon, 1958). Following a reconstruction of this argument, we introduce Simondon's understanding of technical objects as genetic and relational entities, meaning that they are never fixed but exist in a process of concretization, and always stand in relation to both humans and the natural environment. We build on Simondon's theory of technology, as well as recent scholarship that has investigated the relevance of Simondon's work in the context of digital technologies and AI, to rethink the human-technology relation in HCAI. This leads to an appraisal of current HCAI approaches as too focused on the utility of AI systems, seeking to design for usefulness and increasing human performance. Instead, Simondon's perspective invites us to consider how values materialize in AI technologies, for example through examining the processes by which large datasets are computed for classification and prediction in real-world settings.

In the following section, we consider two potential shortcomings of Simondon's theory of technology for grounding the concept of HCAI. First, we suggest that Simondon's analysis overlooks the role of technical objects as the infrastructure of political engagement, or "public things" to which human beings relate together as citizens (Honig, 2017). We analyze this shortcoming of Simondon as a limited philosophical anthropology that does not acknowledge the human as *zoon politikon*. Second, we question whether Simondon's perspective allows for contending with the environmental costs of technical progress, and suggest the importance of reckoning with the finality of the geographic milieu. This paper contributes critical engagement with the assumed instrumentalism in current HCAI discourse, and develops a response building on Simondon's philosophy of technical objects, while addressing its limitations.

