BOOK OF ABSTRACTS

OUTONOMY WORKSHOP

Donostia - San Sebastián

22-24 June, 2022

www.outonomy.net/workshop

IAS-Research
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Outonomy: fleshing out autonomy beyond the individual is a research project lead by Leonardo Bich and Xabier E. Barandiaran with Kepa Ruiz-Mirazo, Jon Umerez and Arantza Etxeberria as members of the research team and a network of 24 research collaborators including PhD students, postdoc researchers and international researchers. With project ID PID2019-104576GB-I00 Outonomy was awarded by the Spanish Ministry of Science and Innovation for the period 01/06/2020-31/05/2023 within 2019 Call for "R + D + i Projects", as part of the framework of the State Programs for the Generation of Knowledge and Scientific and Technological Strengthening of the R + D + i and R + D + i System Oriented to the Challenges of Society of the National Plan for Scientific and Technical Research and Innovation 2017-2020.

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Session 0 - Wed 22/06, 09:30

WELCOME: Outonomy, fleshing-out autonomy beyond the individual

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KEYWORDS: Autonomy, integration, interaction, collective, sustainability, externalism

ABSTRACT: The concept of autonomy, understood as the capacity of a system to set up and follow the norms of its own functioning, is of central relevance to contemporary science and society. Recently, the increasing acknowledgement of the deep interconnectedness, mutual dependence and multiscale embeddedness of several natural and social phenomena, has directly challenged the very idea of autonomy, together with those of individuality and identity, and the possibility of its applications to scientific and social domains. Theories of autonomy need to be upgraded beyond classical conceptions of the individual by including integrative, relational, collective and environmental dimensions into it. To do so the project pursues 4 main goals: 1. To develop a notion of integration that is capable of delivering operational criteria to understand how diverse types of autonomous organizations are kept together cohesively, to address controversial cases such as symbiotic systems, human microbiome, mother and foetus relationship in pregnancy, and to deliver socially relevant outcomes for the understanding of biological and psychological personal identity. 2. To explain how higher levels of autonomy emerge from the interaction between autonomous systems and how these new levels in turn limit or expand the autonomy of their constituents: from dyadic relationships to collective agency, from autonomous social habits to the constitution of democracies. 3. To enlarge the concept of autonomy to include relevant aspects of the environment it relies upon, particularly when this environment is transformed by the recurrent action of the subject and creates additional structures that may constitute material or epistemic scaffolds, challenges and threats to the viability of biological systems. Analogous challenges in the domain of human autonomy are found in our technological environment, including increasingly autonomous artificial intelligence, and the way it can jeopardize or enhance personal and democratic self-governance. 4. The last goal concerns the development of a concept of autonomy that includes issues of sustainability beyond the scale of an individual organization: ranging from holobionts, oecological associations, requirements for open-ended evolution, to the governance of social-ecological networks in the context of contemporary climate crises.

Session 1 - Wed 22/06, 10:00

Autonomous Systems Adapting to their Own Dynamic Viability

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KEYWORDS: autonomy, adaptivity, viability, norm-following, behaviour

ABSTRACT: An autonomous system consists of a network of interdependent components, where each component is inherently unstable, and yet persists thanks to its own influence and the influence of other components within the network.

Systems organized in this way have a set of `viability conditions': conditions that must be satisfied for the system to continue to exist. These conditions are holistic in the sense that they are not the result of a single component, but of multiple components and the non-linear ways that those components interact. Further complicating matters, the viability conditions for such a system can themselves change in ways that depend upon the autonomous system's environment and that depend upon the system's history.

As such, measuring (as a 3rd party observer/scientist) the health or viability of such a system is complicated, as it is not something that can be completely captured in a single summary statistic or variable. The case is similar for the autonomous system itself: how can such a system detect and respond to variations *in its own health*? How can such a system regulate its own behaviour in response to how healthy it is, and in response to its own (potentially changing viability conditions)?

To address this question, I will review published work that:

- investigates `viability indicators', state-variables that strongly correlate with a system's viability;

- considers systems where processes of self-construction and behaviour are strongly coupled;

If time allows, I will also present a generalized model (currently under development) that I am using to explore how autonomous systems can adapt to their own viability dynamics.

Discussion will focus primarily around biological autonomy (metabolism and the self-production of biochemical systems), but will also consider autonomous sensorimotor dynamics (self-maintaining patterns of behaviour, i.e. `habits'). The observations will be presented in a way that is readily related to other contexts where autonomous systems are found (such as social systems or institutions). There will also be some discussion about how autonomous systems operating in different domains can be entangled and can interact in supportive or destructive ways.

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Enactivism and the Hegelian Stance on Intrinsic Purposiveness

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KEYWORDS: Purposiveness, Hegel, Autonomy, Enaction, Agency, Organicism

ABSTRACT: Since its inception at the end of the twentieth century, embodied cognition has progressively established itself as a valuable alternative to mainstream computationalism, notably by ascribing an active role to the organism in determining cognitive phenomena. In this paper, we assess the specific place occupied by enactivism within the landscape of embodied cognition, by bringing to the fore the specific way it conceives of the relation between intrinsic purposiveness, agency and cognition. In doing so, we argue that enactivism – understood as a branch of the theory of biological autonomy, and therefore in the specific sense of 'autopoietic' or 'autonomist' enactivism – adopts what we characterize as a 'Hegelian stance' with regards to these notions.

Within the theory of autonomy, we distinguish two different research directions, that correspond to two different routes to the naturalization of purposiveness: organizationism and enactivism. We suggest that these two routes mirror the attitudes upheld with regards to intrinsic purposiveness by Kant and Hegel, respectively. Kant's approach is characterized by the tension between his scientific commitment to mechanism and the manifest purposiveness of organized beings. By facing this tension, organizationism attempts to understand how intrinsic purposiveness is realized by the organization of biological parts into a whole. Hegel's approach, in turn, is epitomized by the infamous claim according to which teleology is 'the truth of' mechanism. We interpret this claim as suggesting that purposiveness should not be understood as an explanandum, but rather as an explanans of scientific discourse. Accordingly, the focus is shifted

from how purposiveness emerges from the constitution of the whole through the parts, to how it manifests itself in the behavior of the organism as a whole in relation to its environment. This is the Hegelian stance we find at work in enactivism. This means that the key aspect of enactivism consists in presupposing the realization of a purposive organization, and shifting the focus to the interactive phenomena that it generates as a whole.

We develop our argument as follows: Section 2 discusses how both Hegel and the theory of biological autonomy meet the requirements for naturalism; Section 3 focuses on intrinsic purposiveness, and stresses its different declinations in Kant's and Hegel's treatments; Section 4 draws the distinction between organizationism and enactivism within the theory of autonomy, by locating them in the more general context of current organicism and embodied cognition, while section 5 discusses the central themes of the Hegelian stance on agency and cognition.

Session 2 (Keynote lecture) - Wed 22/06, 12:00

Understanding How Heterarchical Control Can Maintain Autonomous Systems

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ABSTRACT: Fundamental to an organism maintaining itself is its ability to exercise control over the various production mechanisms that perform the physiological and motor activities required to construct, maintain, and repair its various components. Each production mechanism needs to be invoked when its activity is needed to maintain the organism and only when it is not seriously harmful to the organism. Drawing upon Pattee, Winning and I have characterized control as involving mechanisms that make measurements (or utilized those made by other mechanisms) and act on flexible constraints in the mechanisms to be controlled. If one focuses on single control mechanisms, it is relatively easy to understand how they perform a control activity and act to maintain the system. A negative feedback process, for example, can control a production mechanism so as it maintains a variable quantity such as temperature at a constant value and contributes to maintaining the constancy of the internal environment as described by Bernard. Cannon's discussion of homeostasis envisages multiple control mechanisms, each operating to maintain a given quantity, a view of control that was adopted by the Cyberneticists. Control processes in living organisms, however, are not independent but highly interactive. As long as a signal is transmitted, a measurement made by one mechanism can be employed by many other mechanisms to exercise control over multiple production mechanisms (divergence). And a given mechanism exercising control can be informed by measurements made by multiple different mechanisms (convergence). Divergence and convergence enable complex control over different production mechanisms, but it also presents a challenge to our understanding: many measurements may interact in a non-linear fashion in the exercise of control over each production mechanism. Although humans often conceptualize control as hierarchical, in living organisms it is heterarchical. Evolution opportunistically adds signaling connections between measurement components and effectors of control when they do not prove fatal. I will briefly illustrate the resulting complexity with examples from bacteria, invertebrates, and vertebrates. How can we hope to make sense of such complexity? Are we forced to just seek out the details in each case? I propose and briefly illustrate two strategies that may partially tame the complexity. One is to seek out design principles—general patterns of organization of control that may produce similar effects even when realized with different components. I will illustrate this with the role autoinhibition often plays in prevents molecular mechanisms from operating except when they are released. A second is to use evolution against itself—looking back in phylogeny for simpler control mechanisms that may reveal the basic organization of maintained through the lineage. I will illustrate how researchers are using such a strategy to understand control of sleep, a phenomenon that appears to be manifest in all animals with neurons.

Session 3 - Wed 22/06, 14:30

Beyond the Ovary: an Overview of the Factors Involved in Ovarian Function Variation

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KEYWORDS: Reproductive Health, Epigenetics, Collaboration, Endocrine Disruptor, Philosophy of Science

ABSTRACT: Developments in biological and ecological sciences have pointed out the need for a clearer understanding of the interactions through which bodies interact with an ever-changing environment, shaping the manifold of phenomena where bodies are embedded in a sort of dependency. This reliance on their environment presents bodies embedded in a network of interactions that challenges traditional perspectives on autonomy and agency and that trusts theoretical research with the task of postulating an alternative to these concepts beyond perspectives restricted to the boundaries of the individual. In this workshop, I will elaborate on the factors affecting and constituting the ovarian function in bodies with ovaries, which I believe establishes a sophisticated case study of a phenomenon shaped through integrative, relational, collective, and environmental processes and that, furthermore, modulates the capacities bodies with ovaries have for self-governance.

Variation in ovarian function has been regarded in clinical practice as a rather straight-forward phenomena, pertaining to key life-events, such as puberty, pregnancy, and menopause, and serving as criteria to classify bodies with ovaries as either with a suitable ovarian function, also referred to as "fertile", or as with an unfit ovarian function, referred to as "unfertile". Nevertheless, ovarian function has been analysed in recent years as an important determinant of health that, when interpreted together with environmental factors, could entail practical implications for the prevention of hormonal health complications throughout the life of bodies with ovaries. These environmental factors include but are not limited to genetic, epigenetic, maternal, and lifestyle factors. Consequently, in this talk, I will look at the myriad of factors involved in the variability of ovarian function in bodies with ovaries and postulate them in terms of processes of integrative, relational, collective, and environmental nature.

Ovarian function variation offers an opportunity for bodies with ovaries to defy the concept of individuality traditionally defining bodies as clear-cut entities, differentiated from their environment, and to reclaim the idea that ovarian function is modulated through a scaffold of interactions that limits and, parallelly, enhances the sense of independence and autonomy that such bodies embody through collaboration and integration that, furthermore, could involve events outside the spatio-temporal scale within which such bodies operate. The role of environmental factors in the shaping of the ovarian function, additionally, provides research with an example of persistent interactive structures sustained in time that transcend

the internal organisation of bodies and that shape metabolic, immune, and reproductive capacities crucial for the sustainability of the species.

This talk will, as a result, provide an exhaustive overview of the complexity of the manifold factors involved in the variation of ovarian functions and that postulate bodies with ovaries as a clear example of bodies whose capabilities exceed the boundaries of autonomy traditionally endorsed by philosophical research.

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Enactive view of the female body: Two operational closures of the menstrual cycle

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KEYWORDS: Menstrual cycle, cogniton, enaction, operational closure, autonomy

ABSTRACT: Current literature in cognitive psychology has increasing interest in the effects of the menstrual cycle in emotions, behavior and cognition from an integrative and dynamic approach (Duchesne et al. 2020, Pletzner et al. 2019; Mueller et al 2021). However, the functionalist framework of cognitivist neuroscience operationalizes the menstrual cycle into variables that describe or reflect the phases of the menstrual cycle as separate and static entities, impairing to see the dynamics of the cycle as a unity that changes over time. As such a functionalist approach fails to grasp how the cycle changes through time and in interaction with physiological, environmental and social systems. I propose to integrate the enactive

view of cognition (Varela et al 1991, Thompson 2007, Di Paolo et al 2017) to menstrual studies, because it offers a promising theoretical framework to observe the dynamics of the cycle as a self-organizing system embedded in an autonomous cognitive system. In this respect, the present contribution aims to characterize the menstrual cycle as a self-organized process that emerges from the evolutionary and developmental history of the human female body. More concretely, I propose that spontaneous ovulation and spontaneous decidualization constitute in the evolutionary history of the female body two operational closures (structural changes in the organization of reproduction) that allowed the menstrual cycle to emerge as a integrated process with widely integrated biological, cognitive and social effects.

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Biological individuality and reproduction

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KEYWORDS: Individuality, Reproduction, Life cycle, Units of Selection, Holobiont, Evo-Devo, Viviparity, Generation, Metaphysics of Reproduction

ABSTRACT: The aim of this paper is to examine the ontological dimension of reproduction in terms of individuality. Reproduction is commonly understood as the process through which new individuals are produced from pre-existing individuals. Hence, philosophical discussions regarding individuality are central for the way in which we understand reproduction in nature and, on its part, biological knowledge on

reproductive processes may illuminate philosophical discussions around individuality. In order to clarify these issues, an overview of some of the most relevant and influential approaches to biological individuality in the philosophy of biology will be displayed, distinguishing notions of individuality that operate at different levels of organization. In particular, the newly proposed notion of the historical individual will be explored, in relation to the evolution of viviparous reproduction in animals, which emphasizes the relational and transitory character of the emergent ontology that arises during pregnancy. From this relational view of individuality, I will sketch in which way this notion would shape a relational way of understanding reproduction overall.

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Session 4 - Wed 22/06, 16:30

Autonomy beyond the individual: 'dynamic decoupling' mechanisms as enabling constraints for the evolutionary development of minimal biological organization

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KEYWORDS: Minimal metabolism, genetically-instructed metabolism, prebiotic evolution, regulatory mechanisms, hereditary mechanisms, dynamic decoupling

ABSTRACT: In this contribution we will argue that minimal biological organization, understood as the genetically-instructed metabolism implemented by any free-living prokaryotic cell, is so complex that cannot be put together unless previous, protocellular systems engage in an evolutionary process that transcends their individual autonomy. Precursor self-producing systems ('minimal metabolisms' [Lauber et al. 2021]), by turning self-re-productive and generating populations of similar systems are able to transform their characteristic autonomous organization at a different time scale and through different means, becoming increasingly complex — despite the various bottlenecks involved. However, for this to happen, the longer-term evolutionary process must be deeply entrenched with the shorter-term self-constructing and self-modifying dynamics of the individuals that are part of it. In other words, the way in which autonomy is realized by the individuals should affect their collective evolution but, in turn, what happens at the evolutionary scale should also have a causal impact on the individuals coming out of the process and on how these express their autonomy. This entrenchment is far from trivial, because it implies dynamics and causal relationships occurring at different spatial and temporal scales [Ruiz-Mirazo et al. 2020]. On the one hand, autonomous metabolic systems require diverse material constraints that derive from and operate on a network of cyclic processes leading to the continuous construction and maintenance of their individual organization. On the other hand, the reproduction and hereditary capacities of these systems involve trans-generational material constraints through which causal links reaching far beyond the individual sphere of each metabolism are established, leading to an open process in which a number of fundamental features are conserved and some others may change/diversify.

In this context, we will analyse the type of material mechanisms that allow to articulate, progressively, a deeper and deeper —though causally asymmetric— coupling between the "individual/physiological" and the "population/evolutionary" variables/domains. A first set of mechanisms relates more directly to the robustness or resilience of the individuals, to their adaptive capacities in a changeful environment that is probed (basically, through trial and error) by the full population across generations. These mechanisms, which will be regarded as 'regulatory', reflect a sedimentary process by which autonomous individuals

become increasingly apt to react to internal or environmental changes in an effective way (i.e., maintaining their organization, here and now, despite endogenous/exogenous perturbations). However, this is not enough to ensure the reliable transmission of increasingly complex molecular and organization features to the offspring (including the regulatory functions themselves, which also face the risk to be lost). Thus, a second set of molecular mechanisms, 'hereditary' mechanisms, must be devoted specifically to those recording tasks, playing a fundamental role in the establishment of phylogenies. Although these two types of mechanism capture different modes of sedimentation throughout the evolutionary process, we will show that both involve an intrinsic dynamic decoupling from (as well as a hierarchical coupling with) the metabolic activity that supports them within each individual — in line with some claims recently made in [Ruiz-Mirazo & Moreno 2022].

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Autonomous Systems and their Affordances: Toward an Integration of Evolutionary and Organizational Approaches to Agency

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KEYWORDS: Biological Autonomy, Affordance, Ecological Psychology, Extended Evolutionary Synthesis, Agency

ABSTRACT: The question of biological autonomy & agency has been an area of convergent interest for scholars working in two parallel areas of study. The first of these is evolutionary biology, where many now consider the dominant paradigm (the so called 'Modern Evolutionary Synthesis') to be insufficient for explaining new empirical findings such as epigenetic inheritance, niche construction, and the interface between evolution, development, and ecology ('eco-evo-devo'). What appears to be missing is the active participatory role of the organism.

The second, more theoretical perspective is a more which has a rich history in the 20th century, particularly the work of Jean Piaget, Ludwig Von Bertalanffy, and scholars associated with the cybernetic movement such as Francisco Varela and Humberto Maturana. This perspective has investigated fundamental theoretical questions in biology, particularly the distinctive organizational principles which underpin the complex, autonomous and adaptive capacities of organisms.

The need to integrate the two perspectives outlined above —evolutionary and organizational— emerges due to the fact that while they both seemingly converge on the concept of biological agency, differences in their aims and method have led to a lack of communication and integration between these perspectives. The evolutionary perspective endeavors to understand agency primarily as an ecological phenomenon, which naturally focuses on organism-environment relationships. The organizational perspective, on the other hand, has focused on such organizational basis first and foremost. However, the extension of the theory of autonomy into a full-blown ecological approach – in other words, from "autonomy" out "outonomy"—poses several conceptual challenges which must be addressed.

The challenge which we focus on is how to conceptualize the notion of affordances, which Denis Walsh has put at the heart of his ecological approach to agency. If the concept of affordance could be integrated with the autonomy approach, it would be a great step forward in the larger synthesis between the autonomy and ecological approaches outlined above. However, there are challenges which originate both 1) with the concept of affordance as it is currently used and 2) with certain lacunae in the autonomy approach. Concerning the first, vague and ill-defined usages have disguised divergent assumptions about the ontology of affordance, and the way they relate to organisms as subjects that "interpret", and "act on" the "information" in their "environment". These confusions can be traced to very origin of the concept in Gibson's work. Concerning the second point, we deem it necessary that the autonomy approach make clear its stance toward notions of information, interpretation, and meaning. Though it may seem natural for it to follow enactivism in its approach to "sense-making" we will argue that there are also other approaches to this issue which remain open to the autonomy school. If pursued, these alternatives may allow it to provide a distinct perspective on how organisms comes to engage meaningfully with their environment.

Individuals out of interactions: reproduction, symbiosis and syntrophic consortia

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KEYWORDS: individuality, symbiosis, holobiont, physiology

ABSTRACT: The debate on biological individuality has usually been focused on the definition and characterization of evolutionary individuals. Addressing this topic has helped clarify the discussion about units of selection and the requirements for evolution by natural selection. Less attention has been paid to other kinds of individuality (i.e. non-evolutionary based accounts), among which the main alternative to evolution to ground biological individuality has been constituted by organismal physiology. Non-evolutionary accounts of biological individuality are still underdeveloped in comparison to evolutionary ones. This is especially evident in relation to interactive cases (i.e. host-microbe symbioses, microbe-microbe symbioses (biofilms), colonies, reproducing biological systems) that transcend the "traditional organism".

On the one hand the very notion of organism has been challenged by cases of cohesive entities emerging from interactions. Recent research on host-microbiota and, more generally, symbiotic relationships characterized by close functional ties, for example, might seem either to question the possibility to establish clear functional boundaries for living organisms, or to call for further of characterization of the different ways functional interactions can be establish within a system or between systems. On the other hand, where generalization has been attempted, criteria involved in physiology, metabolism, organisms, anatomy, and ecology all tend to get bundled up together with very few distinctions to be made about why they go together.

The need for precise accounts based on conceptual or theoretical criteria is therefore especially apparent given new understandings of a wide range of interactive biological entities, from host-microbiota to pregnancy. The possibilities of forms of biological individuals arising out of interactions and new ways to identify and account for non-evolutionary individuals beyond organisms will be explored in this talk, focusing on syntrophic and physiological symbiotic individuals.

Session 5 - Thur 23/06, 10:00

Cognitive and personal autonomy beyond the individual: overview and implications for the (upcoming) technologically mediated world

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KEYWORDS: autonomy, technological environment, situated cognition

ABSTRACT: How the new digital environment is jeopardizing human autonomy is a question of increasing concern (Schuilenburg & Peeters, 2020; Zuboff, 2019). It also forces us to review and update the very concept of autonomy that has been central to western moral and political philosophy since Kant's principle for morality, where it must be oneself—and not something external to the self—who self-imposes a moral course of action. This idea of autonomy as 'self-government' has then been further explored in moral analytical philosophy, where the classical view (e.g. Frankfurt, 1971) focuses on the synchronic structure of desires or volitional states behind autonomous acts. Further work developed the temporal aspects of autonomy (e.g. Christman 1991; Bratman 2000) and, most notably, feminist philosophers have questioned its individualistic and self-sufficient aspect in classical formulations, and have proposed instead relational accounts that focus on the role that the broader social context plays in autonomy (see Mackenzie & Stoljar, 2000; Oshana, 1998). After reviewing this literature, we propose a three-dimensional approach to autonomy (synchronic, temporal and relational) that allows for a richer exploration of the concept, analysing the ways in which each dimension relates to the others.

Once this picture has been set in place, it can help us analyse the ways in which new digital technologies can drastically shape our personal and cognitive autonomy. As it has already been argued, any kind of technology plays a fundamental role in shaping us as human agents (see Latour, 2002), by designing the possibilities that our environment grants us (Verbeek, 2006) and by extending our cognitive abilities (Clark, 2003). Sensorimotor theories of cognition and autonomy (Barandiaran, 2008; Di Paolo et al., 2017) offer a promising way to explore in more detail how this shaping or co-constitution of autonomy by technological environments takes place. In this view, autonomy is not to be accounted for in rational or even computational terms (internal or extended) but, instead, as a self-sustaining and self-regulating network of habits or sensorimotor structures that cut across brain, body and environment. This sensorimotor theory of autonomy allows us to ground some of the aspects that emerged from our three-dimensional analysis of autonomy, and to relate them to different practices of digital interface design. Particularly, we will focus on two ever-present design practices that have already been subject to ethical considerations: "dark patterns" (Gray et al., 2018) and transparency-in-use (Clowes, 2020). Given the importance of the relational dimension, often overlooked, we will also review the ways in which these interfaces, when applied to social

networks, can have strong effects on autonomy. Finally, and keeping in mind emergent technologies that rely directly on sensorimotor interfaces (augmented and virtual reality) or deep physical incorporation (brain-computer interface), we point to some design ideas -such as adaptivity, friction and open-source software- that might help enhance the autonomy of users of present and upcoming digital technologies.

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Technopolitical Autonomy: definition, operationalization and possibilities in the digital society

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ABSTRACT: Autonomy, broadly understood as the capacity of a being to generate the rules of its own functioning, is a multi-layered phenomenon. It is built upon a variety of interacting, nested, recursive processes. This is especially true in the human world. A paradigmatic example of this are high or macro-level forms of autonomy in a digital society, such as technopolitical autonomy. At a time of growing concentration of power and knowledge in the hands of a shrinking number of actors (Zuboff 2019), which nurtures heteronomy in digital societies, technopolitical autonomy speaks of the capacity of a given collective or assemblage (Latour 2004; De Landa 2004) to politically give itself the rules of its own functioning and action in and through technological systems. In this chapter we review the literature in political theory, philosophy of technology, STS, complex systems and information theory, in order to properly define this concept and give an account of its descriptive and normative potential. That implies to provide an "ascending" and a "recursive" overview that goes from ontological definitions of autonomy to its social, political and technical versions and dimensions (and back), as analyzed by authors ranging from Immanuel Kant to Humberto Maturana and Francisco Varela (1980), and from Cornelius Castoriadis (1991) or Michael Hardt and Antonio Negri (2005) up to Langdon Winner (1979, 1986). We also propose a minimal model that may allow its formal operationalization. Finally, by applying it to some empirical cases, we show its analytical potential for the digital humanities and its broader political possibilities in digital societies.

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Relational Identity Graph beyond ego-networks

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KEYWORDS: social networks analysis, ego-networks, self theory, collective identity

ABSTRACT: Social psychological theories of the self draw a distinction between two levels of the self-construals: the individuated self (those aspects that make the self distinguishable from others) and the relational or social self (those aspects that make the self assimilable with others). Moreover, a second level of differentiation in the social self is considered: the relational self that emerges from strong interpersonal relationships with specific others; and the social self that emerges from impersonal bonds derived from common identification [1]. Those two levels of the collective self also reflect different levels of inclusiveness. In the tradition of social network analysis, this aspect is associated with the study of ego-networks [2]. Dunbar and collaborators [3, 4] showed that alters (those in relation with the ego) in ego-networks are organised in different layers of decreasing strength of the relationship, with a strong inner circle of significant others. Recently, it has been observed that the structure of online social networks also shows these properties.

In this work, after reviewing theories from different fields that have in common this multilevel perspective of the self (from Simondon, to Dunbar), we propose a definition of the relational identity graph (RIG) as a graph-theoretical operationalization of the concept of relational identity emerging from interactions with significant others beyond ego-networks. Finally, we explore to what extent the proposed operationalization allows for the study of the informational autonomy of the self across the different levels of self-construals and how it can be validated with data from online social networks.

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Session 6 (Keynote) - Thur 23/06, 12:00

Similarity and difference: A paradigmatic account of collective action

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ABSTRACT: Collective actions come in many forms. Group dances, music ensembles, soccer championships, and demonstrations are all examples of collective actions. Some of these actions are pursued spontaneously by strangers in face-to-face situations, others are performed by groups of individuals that know each other very well, yet others are actions in which individuals, while widely spread in space and time, act in highly organized ways. Some of these collective activities are practiced by groups of human and non-human animals alike, while others seemed to be exclusively a human affair. Some of these activities involve complex cognitive capacities and sophisticated forms of communication while for others inter-bodily coordination suffices. Some require complex social structures to be in place in the common environments, while others do not require much at all. The similarities and differences between these cases are of interest for different disciplines; including comparative psychology, developmental psychology, evolutionary theory, social neuroscience and sociology, to name a few. In this talk, I present a paradigmatic methodology for the study of collective action in its different varieties. Unlike other concepts, that are characterized in terms of essential features, paradigmatic concepts do not specify necessary or sufficient conditions for all the cases that fall under the concept, instead they stipulate an open list of characteristic features that these cases share at least to a certain extent. With the help of this methodology, I proceed to discuss some key characteristic features that different paradigmatic cases of collective action share, including agency, autonomy, and normativity. I then discuss how this methodology can inform, and be informed, by an interdisciplinary study of the features at issue.

Session 7 - Thur 23/06, 14:30

From surviving to living : a major challenge for autonomy

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KEYWORDS: autonomy, agency, decoupling, living, evolution, surviving, closure.

ABSTRACT: Organisms aren't just surviving, they are living. Surviving and living rely on the ability of metabolism to provide energy when organisms interact with their environment and sometimes this energy enables organisms to modify their surroundings, and even to be modified in return by them.

However, if surviving is centered on self-maintenance, which is based on the balance between endergonic and exergonic processes, the decoupling between metabolism and the agential capacities appears to be, in autonomy theory, as a key feature of every organism. Indeed, agency seems to be enabled by the metabolism and yet, its effects are not necessarily functional for the metabolism itself and, on the contrary, sometimes they can even be harmful for it.

In this talk, we aim at clarifying the problem of the complex relations between metabolism and agency, rather than providing a definitive solution to it. Our background hypothesis consists in assuming that the theoretical characterization of an organism realizing a closure of constraints, and achieving thereby intrinsic purposiveness through self-maintenance faces a major challenge. Indeed, the conceptual tools that are at play in describing the survival of an organism as self-maintenance (notably norm, natural purpose, and agency) seem limited when applied to more complex interactive capacities, that is to say, to life, a relation with the world which puts under pressure the circular determination of autonomy.

In this presentation, we will attempt to clarify the philosophical and theoretical challenges and difficulties raised by the transition from self-maintenance to agential capacities decoupled from metabolism, also by discussing recent work on cognitive autonomy. We will also explore to what extent decoupled and more complex forms of agency may contribute in a different way to the evolution of organisms.

An overview of the pain-homeostasis relationship: current challenges in pain explanations.

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KEYWORDS: pain, homeostasis, scientific explanation, autonomy

ABSTRACT: In the mid-20th century, it started to be acknowledged that pain doesn't necessarily reflect the state of the tissues (i.e.: Melzack & Wall, 1965). Since then, there have been several attempts to integrate the different pain modulating factors into explanations of pain in order to achieve a holistic knowledge of this phenomenon. Several authors developed alternative models of pain for emphasizing pain experience (Stilwell & Harman, 2019), introducing social and psychological factors (Adams & Turk, 2018; Turk & Monarch, 2018) or for improving clinical practice (Quintner et al., 2008; Moseley, 2007). Yet those options are not the only ones seated at the dinner table.

Several pain scientists have introduced the notion of homeostasis as an explanatory principle capable of unifying multiple levels of knowledge and integrating pain modulating factors (Gifford, 2014; Craig, 2003; Melzack, 1999; Price, 2017; Kiverstein et al., 2021). For them homeostasis help i) explaining the inconsistent link between pain and noxious stimuli (i.e.: Wall, 1979), ii) integrating neurophysiology with emotions, cognition and environment (Craig, 2003; Strigo & Craig, 2017; Kiverstein et al., 2021), iii) explaining pain interoception and exteroception (Craig, 2003; Strigo & Craig, 2017; Price, 2017), and iv) bridging the gap between the organism-environment and interoception-exteroception relationships (Gifford, 2014; Kiverstein et al., 2021). Moreover, homeostasis also appears as relevant for defining pain (Cohen et al., 2003) and for clinical praxis (Quitner et al., 2017).

However, there are several issues related to the use of homeostasis as an explanatory principle. Firstly, Walter Cannon's proposal of homeostasis (1932) considers self-regulatory values stable; that is why some have argued that pain doesn't fit the dimensions of homeostasis (Perl, 2011). However, several definitions and uses of the word homeostasis exist (Hagen, 2021), so the notion allostasis (stability through change) was introduced as a way to overcome the limitations of homeostasis for explaining the organism's ability to adapt inner and outer changes (Borsook, 2018; Wallden & Nijs, 2021). Secondly, in some proposals (i.e.: Craig, 2003) pain perception and its link with homeostasis seem to be biased towards representationalism (Cohen & Quintner, 2016). Thirdly, introducing ideas related to self-regulation may impact what type of function is ascribed to pain (see: Wall, 1979). Lastly, homeostasis seems to convey an implicit view of the organism in which the different systems involved in pain operate in an integrative manner. This seems presented like an implicit and non-clarified ontological stance that might not be the same in every case (i.e.: Craig, 2003 vs Kiverstein et al., 2021).

The autonomy framework could solve some of those limitations as it is an ontological commitment to what organisms are and how they thrive (Moreno & Mossio, 2016). Some authors have already proposed that pain is a threat to the maintenance of autonomous systems and thus to its existence (Cohen et al., 2017). Yet further work on the explanatory advantages that autonomy could provide is necessary, which might also help solving some of the problems that mechanistic explanations have (Bich & Bechtel, 2021).

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Session 8 - Thur 23/06, 16:30

Autonomy and the Earth system

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KEYWORDS: Autonomy, Gaïa, Earth-system

ABSTRACT: The Gaia hypothesis, formulated by James Lovelock and Lynn Margulis, stands in a tradition of thought which has strived to understand the Earth as an integrated system. It had an impact in the constitution of Earth System science, a multidisciplinary field of research which uses complex system analysis tools to investigate the functioning of our planet. The original Gaia formulation, which described the Earth as a living entity or organism, was however severely criticized by evolutionary biologists. Does the idea that the Earth is alive hold any scientific value, or should it rather be understood as a metaphor? Organizational accounts of biological autonomy have generally been established through the study of the fundamental characteristics of unicellular and multicellular organisms. We argue that in their abstract nature, they are also useful for the characterisation of some aspects of the Earth System, insofar as they exhibit characteristics such as causal circularity, self-production, self-regulation, or organizational closure. Given that the Earth system can be considered to self-sustain with the only external input of solar energy, it could tend to reinforce notions of "individualistic" autonomy by proving the possibility of such a monadic existence. We argue that the opposite is true: the realization that every other autonomous system we know, be it of a biological, social or technological character exists within this unique Earth system, and depends for its existence on the environmental conditions that are provided by it, shows that we should rather strive to understand autonomy as a radically inter-dependent property. The far from equilibrium thermodynamic state that characterizes living organization has to be considered as a characteristic of the planetary system as a whole (Kleidon 2016; Merlo and Barandiarán 2022), and it is at this level that ultimate closure is to be considered.

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Autonomy and its limits in social-ecological systems

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KEYWORDS: Autonomy; Social-Ecological Systems; Sustainability

ABSTRACT: The concept of autonomy, as the capacity of a system to govern itself in terms of self-generated norms, is central to western thinking and modernity. Its use and significance spans from biology [1-3] to psychology and moral philosophy [4-5] to social and political theorizing [6-9]. However, autonomy has traditionally been understood as being constituted within the strict boundaries attributed to the individual or the social system under consideration, in an abstract and self-sufficient manner. This individualism and internalism has been called into question at different scales [10], but perhaps none is so pressing as that posited by the very limits of environmental sustainability we are crossing at a planetary scale [11-12]. Whereas the Earth system determines limits to the material expansion of human societies, capitalist economies appear as constantly defying any external limit, in the spirit of chrematistics as opposed to economy [13]. The issue is thus how to transit from the limits determined by Earth dynamics as a life-sustaining system, to the self-limitation of societies as a condition for autonomy, democracy [6] and sustainability. It is within the field of sustainability sciences that the concept of social-ecological systems emerged to study the interdependencies between humans and environments [14-19]. They are defined as

complex adaptive systems [20-21], with self-organising constituents [17], non-linear dynamics [14,18] and emergent properties in their multi-level organization [15]. Whereas the very notion of autonomy has not been explored within this field, three main traditions have discussed relevant characteristics of autonomy in social-ecological systems. First, the Ostrom' institutional analysis school has examined the emergence of norms and self-regulation as a requisite for sustainable common-pool resource management [22,19]. Second, ecological economics deals with the idea of limits to economic growth, how to define them and how to enact them in a globally just way [12]. Third, relational-processual approaches to sustainability work on intertwinedness and distributed conceptions of agency [23-26]. This view transgresses traditional dichotomies of nature/culture, body/mind, to conceive a social-ecological system as an emerging developmental process with a history, an ontogeny, with constituents actively creating the conditions of their own viability. In this way, autonomous constituents or agents become, whether they are aware of it or not, co-responsible for their (individual, collective, and systemic) faith: human and non-human agencies affect each other and it is from interaction that the system emerges [27]. In this contribution we advance a conception of autonomy in social-ecological systems as an open developmental process of becoming, of interdependent assemblages comprising human and non-human constituents, capable of creatively limiting themselves in a manner that is affectively binding, agentively empowering and sensitive to the autonomy of its constituents.

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Affectivity, loss of sense of agency and social-ecological degradation

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KEYWORDS: affectivity, agency, social-ecological systems, autonomy

ABSTRACT: Psychological and emotional distress and pain triggered by global environmental and climatic change have been largely ignored (Tschakert et al 2013). I argue that environmental degradation has a direct impact on people's affective life, reducing the sense of agency of individuals and communities, sometimes leading to depression, solastalgia and hopelessness (Eakin et al 2019). Affectivity plays a central role in our self construal and sense of agency. Self-feelings are those affective states that reflect one's position in the world according to one's sense of abilities (Fuchs & Koch 2014; Slaby 2012). They are about one's felt sense of self in relationship to the situation that is confronted with — i.e., the world-, defining the ways one will approach it and what one can do and how capable one is to perform in it. As it defines one's position in the world, the sense of ability builds a sense of being that is situated in that particular situation, a self-construal that stands on the "what I can" and "what I cannot".

Along these lines, and based on the work on affordances (Rietveld & Kiverstein 2014), I posit that environmental degradation leads to the erosion of affordances due to a mismatch between skills and abilities and new environmental conditions. The situation can make skills and abilities proper to a form of life inefficient. As affordances degradation becomes more pronounced, affective states get trapped in a downward spiral with greater loss of the sense of agency. The inefficiency of skills and abilities, in turn, contributes to a self-construal that feels disconnected and alienated from the world and the interactions with the world that still take place can begin to be perceived as superfluous and in the worst scenario as meaningless.

A form of life is the network of know-how shared by a community and the fabric that connects people and environment. Environmental degradation is not only an ecological catastrophe, but the destruction of the form of life and of the very fabric that connects people and the biophysical environment (Slaby & Bens 2019). By doing so, it degrades individuals and communities' sense of agency and autonomy. Finally, people and communities in this condition are particularly vulnerable politically to be subjected to the will of de facto groups of power. Therefore, it should be part of the political agenda as an important consequence of socio-ecological degradation, along with social justice. On a positive note, I assert that agency can be recovered when people explore new effective ways to connect with social-ecological features. Moreover it might also increase a sense of agency, control and hope, thus improving affective life and reducing political vulnerability. I offer examples from fieldwork with farmers from Mexico.

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Session 9 - Fri 24/06, 10:30

"The subject is made": from self-sufficient individuals to subjects in common. Towards a revision of the concept of subject autonomy.

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KEYWORDS: Subject, autonomy, self-sufficiency, interdependence, common

ABSTRACT:

The aim of this presentation is to review the criticism of the self-sufficient individual and to consider how autonomy can be thought from the subjects in common. As Goikoetxea affirms, "one is nor born a subject, it is made". The subject is not the autonomous owner of himself. It is constantly overcomed and dispossessed by the relationships that constitute it. If the subject is made and determined, how can autonomy be thought of? Our hypothesis is that being determined, done and dispossessed, instead of being an external limit to autonomy is a precondition, but not a guarantee. The question is how to determine it. The question is not, therefore, to have links or not, but what kind of links. In conclusion, in front of the model of autonomy understood as a pre-social property of a self-sufficient individual, we propose an alternative model of autonomy: a situated and plural capacity to self-governance developed within, through and against social relationships.

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Situational affective atmospheres and the enactive-ecological framework

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ABSTRACT: With the aim of extending the notion of autonomy to encompass larger-scale social phenomena, this piece of work suggests situations as proper explanatory levels that go beyond dyadic explanatory strategies. Situations are emergent wholes that encompass a wide variety of sociomaterial and affective qualities in which interpersonal interactions are embedded and they modulate, enhance, or constrain the sense-making process of the individuals participating in them. Situations are made up by physical-material dispositions, interactional dynamics of relational networks and affective situational qualities in a given space and time. In this way, they contribute to understanding the emergence of autonomous collective meanings, interactive patterns, and shared affects in different contexts.

Concerning physical-material dispositions, ecological psychology has extensively investigated the constitutive role of the sociomaterial environment in cognition and behavior, describing the environment in terms of affordances or dispositions to action. In this regard, the concept of the field of relevant affordances is particularly relevant to understand situational phenomena since it accounts for a whole that emerges from the dynamic interrelations between multiple affordances understood in a wide sense. Concerning interactional dynamics, the enactive approach to social cognition has stressed the constitutive role of engaged interactive process of coordinating with others in the co-construction of shared meanings. These participatory sense-making processes are manifested in the coordination of a wide variety of bodily variables (e.g., heart beats, movements, facial expressions) and give rise to autonomous interactive patterns that modulate individual sense-making processes. Concerning the affective dimension, a promising newcomer in the field of situated affectivity is the concept of atmospheres. Atmospheres are holistic affective qualities of situations that modulate individual experience in a general, blurred and pathic way. Although they are particularly salient in intersubjectively shared spaces such as political demonstrations or football matches, they address situational processes that go beyond the interpersonal framework to the integration of affect-laden spatial surroundings in the interactive landscape.

This piece of work articulates these three perspectives —the enactive framework of participatory sense-making, the field of relevant affordances, and the phenomenology of atmosphere— to provide a comprehensive and integrative account of situational affective phenomena as holistic emergent totalities that traverse and modulate individual and collective dimensions of experience. Psychotherapeutic encounters and social inclusion/exclusion group dynamics will be analyzed as examples of situational affective phenomena.

Autonomy, loneliness and the perception of architectural spaces. An interdisciplinary analysis developed in the Basque Country.

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KEYWORDS: autonomy, loneliness, architecture, space, affordances

ABSTRACT: This conference paper presents the preliminary results of philosophical research, linking architecture and humanities and focusing on the perception of loneliness and autonomy in elderly people. The research analyzes two specific variables: loneliness and autonomy. The analysis of these two variables is not new in social sciences and psychology (see for instance Cacioppo & Patrick 2008; Murthy 2020). For this reason, the paper will firstly present a general overview of the state of the art. Yet, the novelty of this research is that it relates these two increasingly important social variables - autonomy and loneliness - with the perception of space inside and outside buildings. The research will also focus on case studies about how minority groups – such elderly - perceive their living spaces (natural, urban, individual and social) as constituted by negative and positive affordances (Gibson 1979) for the development of autonomy and the reduction of unwanted loneliness. This research aims to shed light on the importance of the social and spatial basis of loneliness and autonomy as related to space perception. Furthermore, it compares architectural and urban projects specifically focused on the elderly and the aging in place (Burton et al. 2011). This type of research allows extending the notion of autonomy from an interdisciplinary perspective toward spatial analysis and architecture. In doing this, we combine a philosophical and cognitive science analysis, such as the one developed by Gallagher (Gallagher & Janz 2018) with the current architectural-based literature on the topic (e.g. Burton et al. 2011; Lane 2019).

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