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EXTERIORIZATION

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It. *Esternalizzare*; Fr. *Externalizer*; Germ. *Auslagern*; Span. *Externalizar*. Exteriorization refers to the human ability to transfer certain cognitive, perceptual, or agentive capacities onto objects. A written note, for instance, exteriorizes memory; a camera exteriorizes vision; a press exteriorizes the force that one might otherwise apply with the hands. Objects that facilitate exteriorization often surpass the abilities of the human biological bodies in terms of precision and efficiency. A written note is more reliable than human memory; a continuously powered camera serves as a tireless eye capable of recording and replaying visual information; a hydraulic press exerts a force far beyond human strength. In essence, exteriorization encompasses both a poietic dimension – related to making, constructing, and manipulating matter – and a delegatory aspect – wherein artifacts embodied a specific agency.

However, understanding exteriorization also requires an examination of its counterpart: extension. In fact, just as individuals exteriorize perceptual, agentive, and cognitive capacities onto physical objects, they simultaneously extend and transform their abilities through tools' interactions. This material and pragmatic engagement leads to the dynamic reshaping of human capacities and cognition. The circular nature of this feed-back model is reinforced by the embodiment of technology, where artifacts should not be regarded merely as inert objects but as integral components of human gestures, habits, and environments, exerting an ecological impact on perception, action, and mind (McLuhan 1964; Verbeek 2005).

THE CONTEMPORARY DEBATE

In the first half of the twentieth century, the reciprocal and coevolutionary relationship between human birth and the technologies that exteriorize and extend our species abilities

was a central focus of German philosophical anthropology. This field of research was particularly shaped by Helmuth Plessner's concept of "eccentricity" and Arnold Gehlen's notion of "relief", both of which provided an ontological framework for describing the specific abilities of the human species through its morphological traits.

In *The Levels of Organic Life and the Human* (1928), Plessner conceptualizes all animals as "centred" – meaning they exist within a sphere of action where their identity is neither questioned nor actively reaffirmed. Humans, by contrast, exhibit eccentricity, namely the ability to project themselves beyond their immediate centre of experience. For Plessner this capacity is deeply linked to bipedalism, which positions humans in a naturally frontal stance toward a vast horizon extending from the ground to the sky. This orientation fosters a novel perspectival relationship with their surroundings and grants them greater mastery over their environment. Because of this morphological predisposition toward exploration, humans are uniquely inclined toward transformation – creating tools to exteriorize their needs and extend their sphere of action.

In *Man: His Nature and Place in the World* (1940), Gehlen adopts what he terms an "anthropobiological" perspective, which does not isolate human physiology but integrates it with cognitive characteristics. For Gehlen, human distinctiveness lies in action, particularly goal-directed activity. However, from a morphological standpoint, the human body appears deficient, lacking specialized adaptations. To pragmatically compensate this biological under-determination, humans employ a unique strategy among living beings: "relief". In this process, the body is freed of certain tasks, and the teleology of action is exteriorized into objects, which then become instruments of human agency.

The connection between exteriorization and morphology is further emphasized in the work of André Leroi-Gourhan, who argues that the construction and use of objects were made possible primarily by the liberation of the hands. According to the paleoanthropologist, the most significant event in human evolution was not the increase in cranial capacity (and thus brain size) but rather the shift in posture. The transition from quadrupedalism to bipedalism provided hominins with a surplus: two free arms and hands, unbound by a fixed function, open to new possibilities. This unique morphological configuration of the upper limbs allowed for a more complex and diversified engagement with matter. Once in human hands, objects could become manipulable, thus enabling a network of interactions through which individuals can exteriorize their cognitive and practical abilities.

The reflections of Plessner, Gehlen, and Leroi-Gourhan have converged, in various ways, into contemporary theoretical frameworks such as the extended mind hypothesis, enactivism, and the Material Engagement Theory. These perspectives offer some of the most comprehensive

formulations of exteriorization and extension today. In particular, Andy Clark and David Chalmers introduced the groundbreaking idea of the *extended mind* in their seminal homonymous article from 1998. They argue that our cognitive abilities are not confined to the brain or body but are distributed across the tools we construct and use. Unlike Plessner and Gehlen, who focused mostly on perceptual and agentive capacities, Clark and Chalmers emphasize the role of higher-order cognitive functions, such as memory, calculation, and reading. For instance, they propose that a notebook, a calculator, or a reading device can serve as extensions of thought. At the core of their hypothesis there what Clark and Chalmers call the "parity principle" – namely, the idea that if a process typically associated with cognition (such as memory) can be performed externally (e.g., through a note in a book), then the object should be considered an extension of thought. Humans can be certainly described as naturally exteriorized animals, but Clark and Chalmers propose a more radical hypothesis: for them, indeed, our engagement with technology transforms us, shifting the mind beyond the constraints of biological physiology and embedding human cognition within the very tools we employ (Clark & Chalmers 1998; Clark 2003).

This formulation, however, has been widely critiqued (Colombo, E. Irvine, M. Stapleton 2019). A primary concern is that it risks falling into a representationalist and disembodied model – one in which a note in a book is reduced to a mere transposition of a pre-existing, immaterial mental content, neglecting the situated, embodied, and dynamic nature of cognitive processes. To move beyond a representationalist conception of exteriorization, both enactivism and the Material Engagement Theory have focused more closely on the processes of creation and manipulation of tools (Malafouris 2013; Noë 2009; Gallagher 2020). Within this framework, exteriorization is not understood as the mere translation of a fully formed, internal mental image into an external representation – one that may succeed or fail in capturing the original idea. Instead, exteriorization is co-determined and co-constituted by the properties of materiality – that is, by how things respond to human actions and perception. It is precisely through the encounter between human bodies and matter that new and unforeseeable concatenations emerge – techniques, technologies, and thoughts that take shape within the experience itself. Unlike Clark and Chalmers, who emphasized the tool-mind relationship at the expense of the body, enactivism and the Material Engagement Theory recognize that materiality, sensory engagement, and action are fundamental conditions for exteriorization to occur. These perspectives shift the focus from a pre-existing mental content to the emergent, interactive, and embodied nature of human cognition and technological engagement.

EXPLORING FORMS OF EXTERIORIZATION IN DIGITAL MEDIA

As has been observed, in contemporary cognitive science and Material Engagement Theory, the debates surrounding representation vs. non-representation and the role of human morphology in exteriorization processes remain among the most discussed issues. However, these fields have largely overlooked the ethical, political, and media-related implications triggered by ubiquitous digital technologies, even though these, too, constitute forms of exteriorization.

A more critical engagement has emerged within media theory and philosophy of technology, particularly in the work of Bernard Stiegler. According to Stiegler, the exteriorization processes specific to digital and ubiquitous media involve forms of delegation over which users typically have minimal expertise. For instance, while most people can write using Microsoft Word, only a small minority understands the technological infrastructure that enables such actions—since few possess programming knowledge. Because we are neither educated nor grammatised in these media, Stiegler argues that they lead to a state of symbolic misery – a condition in which individuals are deprived of the tools necessary for conscious and critical engagement with everyday digital exteriorizations (Stiegler 2005, 2006).

Another political issue linked to contemporary technologies and exteriorization concerns how our digital productions circulate online, transforming into trends, statistics, profit, and even tools for electoral analysis. Extractive technologies, which continuously reprocess and reinterpret everyday digital exteriorizations, have become a subject of increasing inquiry – not only for their social impact but also because they reveal a fundamental shift: the vast volume of exteriorized data is no longer manageable by a biological body alone. Instead, algorithmic and statistical processing has become indispensable for interpreting and utilizing this ever-expanding stream of digital information (Finn 2018; Broussard 2023).

Finally, but by no means least, Artificial Intelligence (AI) confronts us with a novel form of exteriorization, one that seeks to transfer into an artifact certain capacities traditionally considered uniquely human—such as speaking, writing, painting, and composing music. As Kate Crawford reminds us, this aspiration is not new (Crawford 2021); however, only today we possess hardware and software sophisticated enough to engage in natural language dialogues, generate images, compose melodies, or produce animated short films that closely resemble human-made works. These emerging forms of AI-driven production raise fundamental questions not only about authorship but also about the very processes of exteriorization—both in humans and in artificial systems (Manzotti 2019; Pasquinelli 2023).

In conclusion, exteriorization is an inherently interdisciplinary theme in contemporary philosophical and scientific debates. As has been explained before, philosophical anthropology, palaeoanthropology, cognitive science, media theory, and the philosophy of

technology all examine exteriorization from distinct yet interconnected perspectives. Despite their methodological differences, these fields share a common focus: the role of materiality – both as an enabling condition of exteriorization and as the medium through which it is empirically realized. At the same time, materiality – along with its resistance, adaptability, and transformative potential – remains central to understand the feedback loops exteriorizations generate with human perception, agency, and cognition. Ultimately, all of this different fields of study recognize that understanding human cognition does not require predefining constraints in an a priori fashion. Instead, it necessitates a close examination of the tools we create and use, as they actively shape, extend, and redefine our cognitive, agentive, perceptual capacities.

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