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When Philosophy Becomes Cybernetics and Cybernetics Becomes Philosophy: Luhmann's Systems Theory as the Foundation for Twenty-first Century Cybernetics

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Abstract:
This article examines the intersection of philosophy and cybernetics, proposing Niklas Luhmann's systems theory as a crucial foundation for renewed cybernetics in the twenty-first century. By revisiting Norbert Wiener's foundational insights and reinterpreting key cybernetic principles, it explores how Luhmann's second-order observation and the concept of meaning challenge the traditional distinctions between human consciousness and technology. The paper argues that Luhmann's approach not only addresses concerns of dehumanization in a technologically advanced society but also offers a dynamic framework for rethinking human self-perception and social organization without denying it cybernetic foundations. This exploration highlights the potential of systems theory to redefine the philosophical significance of cybernetics, providing tools for understanding the evolving interactions among humans, machines, and society in modernity.

Keywords: Cybernetics, Philosophy, Niklas Luhmann, Systems Theory, Norbert Wiener.

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1. Introduction: Ideas about the Relationship between Philosophy and Cybernetics.

Interest in cybernetics from the perspective of the humanities, philosophy, and social sciences has been growing in recent years. An example is Yuk Hui's proposal for cybernetics for the twenty-first century,[1] which involves multiple authors with a common position. Namely, the idea that the epistemic reconstruction of cybernetics is both possible and necessary. This reconstruction would unveil the heuristic potential of a discipline that, despite having lost relevance, continues to be vital for addressing the problems, transformations, and new circumstances of a technologically constituted society—[2] particularly for today, as naivety in the face of developments and the growing autonomisation of technology seems to predominate.[3] The aforementioned naivety also illustrates that Langdon Winner's cautionary advice remains pertinent, and instead of accepting the advancement of technology as an inevitable fact and superficially assessing its social consequences, we must come to terms with our new conditions of existence and use the available tools, especially those from sciences and cybernetics, to think about the social sciences, politics, and philosophy of the future.[4]

Given the context of the twenty-first century and the need to think within the margins of a technified world that did not exist, at least to the same extent, in the 1950s or the 1960s, during the rise of cybernetics, it is also worth asking about the relationship that can exist between cybernetics and philosophy. And about which of cybernetics scientific ideas can be valuable for thinking about the present and the future of social organisation and human understanding. It is worth noting that an examination of the interconnection between these two forms of thought has a lengthy historical precedent.[5]

According to Norbert Wiener, the essential object of cybernetics is the problem of control in general,[6] which necessarily implies that cybernetics, since its birth, had to deal with

1 Yuk Hui, "Why Cybernetics Now?" in *Cybernetics for the 21st Century, Vol. 1: Epistemological Reconstruction,* ed. Yuk Hui (Kwai Chung: Hanart Press, 2004), 11.

2 Katherin Hayles, "Detoxifying Cybernetics: From Homeostasis to Autopoiesis and Beyond," in *Cybernetics for the 21st Century, Vol. 1: Epistemological Reconstruction,* ed. Yuk Hui (Kwai Chung: Hanart Press, 2004), 85.

3 Hui, "Why Cybernetics Now," 16.

4 Langdon Winner, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought.* (Cambridge, MA.: The MIT Press, 1978.), 4.

5 Frederick J. Crosson, "Teoría de la Información y Fenomenología," en *Filosofía y Cibernética*, ed. Frederick J. Crosson y Kenneth M. Sayre, trans. Adolfo de Alba (México, D.F.: Fondo de Cultura Económica, 1971). See also Thomas Marlowe & Joseph Laracy, "Philosophy and Cybernetics: Questions and Issues," *Systemics, Cybernetics and Informatics* 19, no. 4, (2021).

6 Norbert Wiener, *The Human Use of Human Beings* (Boston: Da Capo Press, 1954), 17.

philosophical assumptions from which it cannot detach.[7] This means, on the other hand, that the cybernetic aspiration to construct a system capable of containing and grounding the totality of the sciences[8] inevitably places the discipline on a level analogous to that of philosophy, while raising the question of whether cybernetics and philosophy can coexist—or whether it makes sense for them to do so. As Wilfred Sellars observed, it is not possible to extract a scientifically grounded view of the human being and claim that it is valid in any epistemic context.[9]

It was Martin Heidegger who denounced most decisively the possibility of seeing philosophy reduced to irrelevance and replaced by cybernetics because of the development of modern technology. Towards the end of his intellectual life, in a work entitled *The End of Philosophy and the Task of Thinking,* Heidegger pointed out that philosophy, understood as the intellectual activity of thinking in and about the world, about existence and about the being, had come to an end because philosophy was no longer capable of redirecting humanity towards a self-reflection on its condition. He adds that it is cybernetics, understood as the New Fundamental Science, which has come to take its place through a calculating and rationalising way of thinking.[10]

Here, Heidegger's critique is part of a broader denunciation of metaphysics, a tradition that, in his view, prioritizes the forgetting of being in favor of entities, or the world of things. This idea is further developed in *The Question Concerning Technology*, in which Heidegger argues that modern cybernetic thinking conceals the true meaning of the world. This concealment arises from the lack of an authentically human philosophical inquiry capable of addressing the limitations of a metaphysical tradition that treats the world as mere "reserve stock."[11] As a result, cybernetics is linked to general distrust in classical philosophy, particularly regarding the notion of replicating what it means to be human.[12]

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7 Archie J. Bahm, "Cybernetics as a Systems Philosophy," in *Current Topics in Cybernetics and Systems*, ed. Jacob Rose (Heidelberg: Springer-Verlag, 1978), 305.

8 Ernst von Glaserfelds, *Radical Constructivism: A Way of Knowing* (London & Washington: The Falmer Press, 1995), 146. See also Norbert Wiener, *Cybernetics, or Control and Communication of the Animal and The Machine.* (Cambridge, MA.: The MIT Press, 1973), 50.

9 Wilfred Sellars, *Science, Perception and Reality*, (Atascadero: Ridgeview Publishing Company, 1963), 25.

10 Martin Heidegger, *On Time and Being*, trans. John Stambaugh (New York: Harper Torchbook, 1972), 55–60. See also Martin Heidegger, *The Question Concerning Technology and Other Essays,* trans. William Lovitt (New York: Garland Publishing INC., 1977), 14.

11 Jean-Pierre Dupuy, "Cybernetics Is an Antihumanism. Technoscience and the Rebellion Against the Human Condition," in *French Philosophy of Technology:Classical Readings and Contemporary Approaches*, ed. Sacha Loeve, Xavier Guchet, Bernadette Bensaude (Cham: Springer, 2018), 141–144.

12 Carl Mitcham, "Three Ways of Being-with Technology," in *From Artifact to Habitat: Studies in the Critical Engagement of Technology,* ed. Gayle Ormiston (Bethlehem: Lehigh University Press, 1990), 33.

From this perspective, the coexistence of philosophy and cybernetics suggests total incompatibility. While philosophy acts as a defender of the spiritual nature of human beings, their consciousness, and their surrounding world, cybernetics exists as a tangible testimony of a material reality in which objects rule. Thus, while philosophy deals with the world of meaning, cybernetics is unable to say anything about human beings.[13] Between cybernetics and philosophy, there would be a gap of separation marked by the opposition between the phenomenon of complexity and that of subjectivity.[14]

But is this really the case? Is there a necessity for such a clear-cut distinction between philosophy and cybernetics? Undoubtedly, our ideas and ways of thinking are anchored in the technical devices we use to think.[15] Moreover, our culture exists, survives, and organises itself in large part thanks to the communication platforms through which it is disseminated.[16] In a certain way, as Niklas Luhmann suggest along his work, society is the capacity of society itself to reach beyond the present with communication through technological changes.[17] This means that, on the one hand, albeit problematic, there is an enormous proximity between the domain of the technical-cybernetic and the philosophical. And on the other, that the study of the human is incomplete if it does not include the study of the way in which human life organises in relation to other systems,[18] including technological ones.[19]

The purpose of this paper is to delve into the interrelationship between philosophy and cybernetics in order to examine the apparent paradox of the coexistence of both disciplines. Simultaneously, it seeks to introduce Niklas Luhmann's theoretical proposal to reinterpret the contributions of cybernetics in the framework of contemporary society. To this end, the first part of this work will seek the foundations of Norbert Wiener's cybernetics to identify its philosophical motives and tensions. It also highlights the way in which these ideas contrast with some of the fundamental postulates of modern philosophy and science by Kant and Newton. This section concludes with a discussion

13 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology*, trans. David Carr. (Evanston: Northwestern University Press, 1970), §6.

14 Niklas Luhmann, *Complejidad y Modernidad: De la Unidad a la Diferencia*, trans. Josetxo Beriain y José María García Blanco. (Madrid: Trotta, 1998), 16.

15 Mark Coeckelbergh, *New Romantic Cyborgs* (Cambridge, MA.: The MIT Press, 2017), 99.

16 Elena Esposito, "Social Forgetting: A Systems-Theory Approach,".in *Cultural Memory Studies: An Interdisciplinary and International Handbook*, ed. Astrid Erll & Ansgar Nünning. (Berlin/New York: de Gruyter, 2008).

17 Niklas Luhmann, *La Sociedad de la Sociedad*, trans. Javier Torres Nafarrete and Darío Rodríguez Mansilla. (México: Herder-Universidad Iberoamericana, 2007), 289.

18 Humberto Maturana and Francisco Varela, *De Máquinas y Seres Vivos*, (Santiago: Editorial Universitaria, 1972), 17.

19 Carl Mitcham, *Thinking Through Technology* (Chicago: Chicago University Press, 1994), 39.

of the possible consequences of cybernetics and the normative helplessness that follows from the hollowing of philosophy.

In the second part of this paper, I seek to explore an alternative way of understanding the human condition and sociability initiated by the same cybernetic tradition, the culmination of which is the work of Niklas Luhmann and his reappropriation of the concept of meaning within a social theory of complexity born in both opposition and observance to Husserl's phenomenology. The central argument of this section is that cybernetics not only poses a risk of dehumanisation but also the potential to offer a form of interrogation of the human self, its relation to history, and the impact of technology in the self-elaboration of modern society's modes of organization, which can serve as a foundation for the project of cybernetics for the twenty-first century, claimed by Yuk Hui as the basis for a future philosophy. It should be noted that although some explanations of Luhmann's thought are offered, the focus of the presentation is on his interpretation. This article dispenses a detailed treatment of his central concepts, which are sufficiently addressed in works in both English and Spanish, not to mention German.

2. On the Philosophical Motive of Cybernetics and the Problem of the Naturalisation of the Mind

When referring to the birth of cybernetics, Wiener[20] mentions two events that would turn out to be fundamental for the discipline, since they would lay the foundations of its conception of the world. These are historical and scientific events. The first was the end of a period of relative peace and stability sustained by the great empires, which until then had been able to guarantee order and security. The second was the discovery of the probabilistic nature of known physical phenomena. This was an achievement of several scientists, among whom Wiener highlighted the work of Josiah Willard Gibbs. However, they go back to other scientists such as Boltzmann, Maxwell, or Pierce.[21]

Now, the relevance of both events apparently unconnected is that they would constitute proof—one historical and the other scientific—that the real world is contingent. That is, any given state of organisation, far from obeying a series of temporal constants given by the structure of a reality available for discovery, as it had been until Newton,[22] is in fact the result of an improbable combination of interlocking phenomena. This means that the universe we came to know, from the organisation of large physical systems to the internal

20 Wiener, *The Human Use of Human Beings,* 7–8.

21 P.R. Masani, "Norbert Wiener's Place in the History of Science and Philosophy." *Current Science* 67, no. 12 (1994).

22 Wiener, *The Human Use of Human Beings,* 7.

logic of the living, would have to be interpreted as part of an essentially variable universe within a series of similar—though different—equally possible worlds. Otherwise, Wiener argues that there would be no room for contingency, variation, or organisation. Every event would already be determined from its beginning.[23]

The fundamental concept that Wiener rescues from Gibbs's work in the field of thermodynamics is that of entropy, precisely because it allows him to affirm the progressive degradation of everything that exists in nature. Indeed, entropy refers to the tendency to disorganisation of everything organized.[24] This means that the identity of any system can no longer be understood as a constant given by an original design,[25] but as a fleeting state that tends to dissolve between equivalence and similarity with other similar systems. This ultimately implies that any order is much less likely than disorder and that the fundamental question that remains to be asked is how any form of organisation is possible, including the organisation of human life and social order.

Starting from this is not difficult to see how Wiener's and cybernetics' understanding of reality differs from the view held by both Newtonian physics and Kant's philosophy. In *The Critique of Pure Reason*, Kant explicitly states the need for a metaphysical science that can serve as a foundation for all forms of sociability and understanding.[26] As he himself explained, his philosophical enterprise sought in nature what reason itself puts into it. The idea behind this is that between reason and reality, there would be the possibility of a correspondence that could be known, the existence of which could also serve to guide humanity towards the realisation of what he would later describe as humanity's infinite practical mission. That is, an ethical way of life in which happiness and moral duty could coincide.[27] All of which seems quite close to Newton's idea that everything that exists, including human society, does so according to the laws of a previously organised or structured world that can be known, insofar as its rational foundations are known too.[28] Ultimately, this supposes the existence of an inner purposiveness of nature in Kant's terms.[29] That is, a normative orientation of nature itself.

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23 Norbert Wiener, *I Am a Mathematician* (Cambridge, MA.: The MIT Press, 1964), 322–323.

24 Wiener, *The Human Use of Human Beings,* 8–11.

25 Masani, "Norbert Wiener's Place in the History of Science and Philosophy," 921.

26 Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer and Allen W. Wood. (Cambridge: Cambridge University Press, 1998), 99–105.

27 Immanuel Kant, *Critique of Practical Reason,* trans. Werner S. Pluhar (Cambridge, MA.: Hackett Publishing Company Inc., 2002), 97.

28 Wiener, *The Human Use of Human Beings*, 7.

29 Immanuel Kant, *Critique of Judgement*, trans. Paul Guyer y Erich H. Goebel. (Oxford: Oxford University Press, 2007), 209.

By contrast, Wiener observes that the world must be understood as part of a deficient reality that lacks foundations and normativity. As he points out: "In control and communication we are always fighting nature's tendency to degrade the organised and to destroy the meaningful..."[30] This means that what seems secure and stable is subject to degradation. Furthermore, every mode of organisation is the result of operations whose foundation can only be that of the organisation itself. In other words, there is no evidence of the existence of an a priori structure capable of serving as a support or guarantee of the reality of what is real. A crucial point on which Wiener differs not only from Kant but also from Newton is that by rejecting the existence of an aprioristic rational structure, any attempt to base the will and its temporality on the spiritual nature of the subject is rejected in general.[31]

In fact, Wiener went so far as to affirm that life could not be understood in any other way than as a highly improbable accident that is therefore devoid of meaning, marked only by the instants that are realised: "...life is an island here and now in a dying world."[32] Life, from a cybernetic point of view, is nothing more than a particular mode of organisation, that is, a process of complex self-eco-organisation,[33] as it only emerges from the improbable interweaving of a series of variables of diverse nature that concur with each other to make an organised organism whose only task is to give itself an origin and a meaning.[34] Order, organization, and life are, therefore, the products of a self-produced *creatio-continua* consisting of originating a relative and provisional regularity from the order that is diluted in the past and the disorder, or uncertainty, towards which, at all times, the future is moving.

This same point is perhaps most clearly illustrated by Gregory Bateson regarding the metaphor of the map and territory and the problem of knowledge. The map is not the territory, and the name is not the thing named.[35] This is the enigmatic phrase with which Gregory Bateson sums up his view of the relationship between reality and information. What he seeks to express is that we can only consider reality hypothetically—that is, through models, names, and representations—which are simultaneously imperfect and true because they are responsible for the fact that we can speak of a reality. In other words, everything that exists in cognitive terms is that which contains some kind of organisation, which in turn is always the result of the act of an observer. In other words, for Heinz Von Foerster, language is not an image of reality, but reality is an image that depends on

30 Wiener, *The Human Use of Human Beings*, 17.

31 Masani, "Norbert Wiener's Place in the History of Science and Philosophy," 920.

32 Wiener, *The Human use of Human Beings,* 95.

33 Edgard Morin, *Introduction à la Pensée Complexe* (Paris: Points, 2014), 116.

34 Heinz von Foerster, *The Beginning of Heaven and Earth Has No Name: Seven Days with Second-order Cybernetics* (New York: Fordham University Press, 2014), 2.

35 Gregory Bateson, *Mind and Nature*: *A Necessary Unity* (New York: E.P. Dutton, 1979), 30.

language. Language allows us to see to the same extent that it hides things from us. No one can see what they do not see.[36]

The implications of this shift in cybernetics extend to the fields of epistemology, ontology, and ethics and are particularly evident in the displacement of subjectivity and its relation to the surrounding world. As Luhmann would explain lather, without the transcendental component of the subject, the individual is no longer the one who controls or uses the world at their disposal, as the very idea of an external world dilutes from the point of view of the observer and the *de-ontologization of reality*, which ultimately means that knowledge can only know itself and the distinction between subject and object becomes irrelevant.[37] Henceforth, after the cybernetic shift, as N. Katherine Hayles argues, the individual can only perceive itself as a product or reflection of complex information processes that precede and shape them.[38]

From Wiener's perspective, this shift was achieved through the adoption of the idea of feedback, which describes the process through which animals, humans, and machines relate to the world and learn because of their interactions with the environment. His idea here was that things that belong to the human realm could not be detached from natural and physical processes. Rather, cybernetics should be able to describe the processes and mechanisms through which human development occurs. However, the price to pay was the abandonment of the enlightenment overestimation of the human spirit, which Wiener considered naïve and immature,[39] in favour of a conception of the living sufficiently abstract to unite all kinds of creatures, organic or artificial. As Wiener states: "...the physical functioning of the living individual and the operation of some of the newer communication machines are precisely parallel in their analogous attempts to control entropy though feedback."[40]

Consequently, from Wiener's position, there follows the displacement of the idea of intention and will, which were central to the humanities and philosophy of the first half of the twentieth century, in favour of the complex relationship between chance and necessity. Which means, that the human brain operates in a manner akin to a machine,

36 Heinz von Foerster, "Visión y Conocimiento: Disfunciones de Segundo Orden," in *Nuevos Paradigmas, Cultura y Subjetividad*, ed. Dora Fried Schnitman, trans. Javier Rodríguez. (Barcelona: Paidós, 1994), 100.

37 Niklas Luhmann. "The Cognitive Program of Constructivism and a Reality that Remains Unknown," in *Selforganization, Sociology of the Sciences, vol. 14*, ed. Wolfgang Krohn, Günter Küppers and Helga Nowotny. Dordrecht: Springer, 1990), 64–67.

38 N. Katherine Hayles, *How We Became Posthumans: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 4.

39 Masani, "Norbert Wiener's Place in the History of Science and Philosophy," 925–927.

40 Wiener, *The Human Use of Human Beings,* 26.

with its actions dictated by prior experiences and inclined towards adapting to the unpredictable nature of an ever-evolving environment. This ultimately implies that it is no longer possible to conceive of human history as an incremental process of improvement and progress in which the natural and social take on the form of ethicity, as it had been for the enlightened modern project.[41] Within a cybernetic modern world, the very idea of humanity no longer possesses differentiating factors from animals or machines, and consciousness can no longer be conceived of as the guiding force of a will capable of guiding itself—in Kant's enlightenment terminology—free of any determination.

Nevertheless, how does this relate to the issue of the relationship between philosophy and cybernetics? Once the close connection between machines and human beings has been established the distinction between them has to be understood as merely a matter of the varying degrees of complexity in the organisation of information that makes them possible. Which ultimately means that the way is paved for the naturalisation of the mind. I.e., the reformulation of the fundamental concepts associated with consciousness within the framework of the mind as a physiological phenomenon.[42] This is fundamental because the phenomenon of life can now be understood as part of a computational project of increasing the information-processing capacity analogous to that of evolution. As John von Neumann pointed out, the functioning of the nervous system is essentially a digital function in that it establishes the rules that govern the responses of neurons that react to stimuli that, without internal rules for discrimination, would be incapable of reacting in a way other than pure randomness.[43]

On the other hand, this implies that the game of the organisation of the brain and the organism —living or inert—is the game of information management or control and, as Hayles observed: "If the name of the game is processing information, it is only a matter of time until intelligent machines replace us as our evolutionary heirs. Whether we decide to fight them or join them by becoming computers ourselves, the days of the human race are numbered."[44] Behind the cybernetic view of humans, there is thus, as Heidegger feared, the risk of a total displacement of the human in favour of the technical, understood as the measure of all that exists.

Indeed, as Jean Pierre Dupuy argues, the central focus of cognitive sciences, heirs of cybernetics, has never been to solve the enigmas of the human mind or to decipher its specificities: "The aim of cognitive science always was—and still is today—the

41 Peter Wagner, *Progress: A Reconstruction* (Cambridge: Polity Press, 2016), 1.

42 Dupuy, "Cybernetics Is an Antihumanism," 144.

43 John von Neumann, *El Ordenador y el Cerebro*, trans. Josep Borrell and Carolina Mayeur. (Barcelona: Antoni Bosch Editor, 2023), 73.

44 Hayles, *How We Became Posthumans*, 243.

mechanization of the mind, not the humanization of the machine."[45] The normative orientation of movements such as transhumanism, the quest for immortality, or general intelligence seems to follow the same direction towards the reduction of the human to the most absolute simplicity[46] and lack of depth.[47] Which highlights that underlying the cybernetics-inspired technical development agenda is the idea that the mind can be treated as a manipulable and modifiable artifact, whose intervention would lead to human enhancement by artificial means.

However, the problem with this is that this goal, driven by the modern desire for knowledge and technical mastery, also implies an almost certainty of the annihilation of everything that surrounds humanity, meaning it strips it of everything that separates it from mere things.[48] Including every aspect of human experience of the world that refers to the familiar or surrounding world—i.e., the culture—and that constitutes and gives meaning to the fact of being in it. As Sloterdijk observes, with his irrepressible hunger for discovery, the human being has opened up an abyss before everything that links him to others.[49] That is to say, they destroyed the whole tradition and all the foundations on which the meaning of human life was held together, including what constitutes the normal, the familiar, and the paths of enquiry into the meaning of existence. In conclusion, this means that cybernetic success in describing the organised and reproducing the human mind must at the same time mean its end.

3. Niklas Luhmann's Cybernetics as a Defense against the All-too-familiarity of the World.

The attitude of continental philosophy towards cybernetics has been one of criticism mixed with a certain amount of indifference and disinterest. Despite some rather concrete attempts made to incorporate some cybernetic assumptions in philosophy, what Catherine Malabou describes as an intransigent attitude of resistance to the mechanisation and biologisation of the mind has generally predominated.[50] That is, a reaction against technoscientific research on the mind, under the assumption that cybernetic description

45 Dupuy, "Cybernetics is an Antihumanism," 141.

46 Mark Coeckelbergh, *AI Ethics* (Cambridge, MA.: The MIT Press, 2020), 11.

47 Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: The Viking Press, 2005), 9.

48 Dupuy, "Cybernetics is an Antihumanism," 154–155.

49 Peter Sloterdijk, *In the World Interior of Capital*, trans. Wieland Hoban. (Cambridge: Polity Press, 2013), 29.

50 Catherine Malabou, *Morphing Intelligence: From IQ Measurements to Artificial Brains* (New York: Columbia University Press, 2019), 9.

would be a genetic and deterministic description that is not capable of describing the complexity of human intellectual and cultural phenomena or the meaning of moral values. This can be seen in the work of Heidegger, as previously stated. But it is also the case of Ellul, who points out: "Every intervention of technique is, in effect, a reduction of facts, forces, phenomena, means, and instruments to the schema of logic."[51]

As seen in the previous section, this critical attitude is correct in identifying one of the fundamental ideological and normative tendencies of cybernetic scientific thinking. However, its attitude toward abstinence, distance, and indifference poses at least one fundamental problem. It is no longer possible to say *no* to technology.[52] As Luhmann explains, the modern world is put into operation through technology;[53] technology is a fundamental part of today's world and the possibilities it offers.[54] And that's something that Wiener clearly stated too, while referring to the practical consequences of cybernetics and modern sciences: "We have contributed to the initiation of a new science which, as I have said, embraces technical developments for good and evil."[55] What, on the other hand, means that the main philosophical question of contemporary technological society can be none other than, simultaneously, the central question of any attempt of cybernetics for the Twenty-first Century: How is organisation possible in a world that, now technified, opposes it with its entropic tendency? Otherwise, no philosophical inquiry could be completed.

An author who, within cybernetics, offers a way to think critically about the problems of organisation in a technified world, without having to deny the discoveries or advances of the discipline itself nor succumbing to the complete mechanisation of mind and meaning, is the aforementioned sociologist, Niklas Luhmann. An author little read both within the cybernetic tradition and in philosophy who, however, turns out to be both an important representative of second-order cybernetics[56] and a keen reader of continental philosophy in general and of phenomenology in particular.

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51 Jacques Ellul, *The Technological Society*, trans. John Wilkinson. (New York: Vintage Books, 1964), 79.

52 Peter Sloterdijk, *Not Saved: Essays After Heidegger*, trans. Ian Alexander Moore and Christopher Turner. (Cambridge: Polity Press, 2017), X–XIV.

53 Luhmann, *La Sociedad de la Sociedad*, 289.

54 Sloterdijk, *Not Saved*, 175. See also Winner, *Autonomous Technology*, 100ss.

55 Wiener, *Cybernetics,* 28.

56 Heinz von Foerster, "An Niklas Luhmann," in *Gibt es eigentlich den Berliner Zoo noch? Erinnerungen an Niklas Luhmann, ed. Theodor Bardmann & Dirk Baecker* (Munich: UVK Verlagsgesellschaft, 1999), 13–15. See also Michael Paetau, "Niklas Luhmann and Cybernetics," *Journal of Sociocybernetics* 11, (2013).

The particularity of Luhmann's sociological work is that, in his understanding of modern society, he incorporates the idea of complexity and improbability to describe society and its organization in a way that could not yet be conceived either by sociology or philosophy, let alone by Wiener's cybernetics. Certainly, Luhmann recovers from Wiener the basic assumption that from the point of view of the modern being, it is no longer possible to conceive of the world that supports human life as fixed in inert institutions embedded in time, but as highly dynamic systems that manage to survive because of their mode of organisation.[57] However, instead of assuming entropy and self-reproduction of systems as constants of nature capable of affecting individuals' homeostatic capacities, Luhmann seeks to construct a general theory of autopoiesis to extend entropy and self-reproduction to the phenomena of consciousness and communication, but no longer as contextual conditionings previously underestimated, but as structural and existential conditions of all becoming.[58]

This attempt to extend the postulates of cybernetics into the domain of the psychic and the social stems from an effort to de-ontologise reality and the individual in favour of the positioning of the observer in relation to the environment. According to this, the world can only be conceived of as an apparent world lacking an ontological right of its own.[59] Luhmann's argument for this is that the reality of everything real must be understood as part of a structure that remains latent and can only be accessed through an effort of observation and distinction, insofar as the limits of cognition suggest that all knowledge is nothing more than knowledge of knowledge.[60] In other words, knowledge, and in particular the language with which it is constructed, never goes beyond the pointing out of a conceivable possibility of the distinction between identity and the difference of the observed, while reality itself remains a real illusion.[61] Between latent reality and the observer, the only thing available is the language in which reality is observed. [62] Meaning, on the other hand, that systems exist insofar as they can produce themselves through differentiation from the environment.

From a theoretical point of view, this means that the organisation of the collective and the common could only emerge as part of a process of self-construction that exists to the

57 Stafford Beer, *Designing Freedom* (New York: Wiley, 1995), 2.

58 Luhmann, *La Sociedad de la Sociedad*, 56.

59 Niklas Luhmann*, Ilustración Sociológica y Otros Ensayos*, trans. Héctor A. Murena. (Buenos Aires: Editorial Sur, 1973), 100.

60 Luhmann, "The Cognitive Program of Constructivism and a Reality that Remains Unkown," 65.

61 Niklas Luhmann "Why does Society Describe itself as Postmodern." in *Observing Complexity: Systems Theory and Postmodernity*, ed. William Rasch and Cary Wolfe (Minneapolis: Minnesota University Press, 2000), 36–37.

62 Humberto Maturana and Francisco Varela, *El Árbol del Conocimiento: Las Bases Biológicas del Entendimiento Humano* (Santiago: Editorial Universitaria, 1984), 137.

same extent that it is degraded. This is because reality has lost its points of support and certainty. According to Luhmann, these are now replaced by the free play of the observation of observers and the variations that the diversity of points of view produce on attempts to understand the meaning of communication.[63] Luhmann illustrates and explains this through the double contingency theorem. Double contingency, says Luhmann, describes a double dependence or complementarity of expectations.[64] That is to say, the correlative nature of expectations that confront each other and have in common the ignorance of the intentions and desires of the other.

In this sense, double contingency deals with the description of an initial face-to-face situation between strangers who, by necessity of circumstances, need to reach a consensus to develop their actions and pursue their ends. So essentially the concept describes a normative deficit,[65] according to which, without some kind of coercion, society is confronted with an unsolvable problem, as there are no guarantees for the development of collectively oriented action. However, Luhmann's solution to this, which distances him from Talcott Parsons, who originally used the concept to foster the need for the generalisation of values and culture,[66] is to stop placing so much importance on consensus and instead note that it is in fact the negation of consensus, motivated by difference, that allows for change and the evolution of the meaning of communication, since any negation of it is also, and in turn, poiesis.[67] This means, in Luhmann's words, that the double contingency "makes possible the evolution of specifically social orders—even if evolution, again, means only the construction and destruction of structured orders at the emergent levels of reality."[68]

The significance of this is that Luhmann's identification of the evolutionary self-construction of meaning within systems through the tendency towards its construction and destruction is that it manages to incorporate contingency, complexity and entropy within social and psychic systems in a way that no longer requires the individual to be hypostatised through a metaphysical foundation that sustains it in opposition to the disruptions or degradations of the natural environment. Nor of diluting the subject among external determinants. On the contrary, it attempts to ground the groundlessness

63 Niklas Luhmann, "What is Communication?" *Communication Theory* 2, no. 3 (1992).

64 Niklas Luhmann, *Sistemas Sociales. Lineamientos para una Teoría General*, trans. Silvia Pappe and Brunhilde Erker. (Barcelona: Anthropos, 1998), 115.

65 Pedro Cárcamo-Petridis, "La Cultura Como Autodescripción De La Sociedad Funcionalmente Diferenciada". *Revista del Magister de Análisis Sistémico Aplicado a la Sociedad*, 48 (2023).

66 Talcott Parsons, *Toward a General Theory of Action* (Cambridge, MA: Harvard University Press. 1951), 15.

67 Luhmann, *Sistemas Sociales*, 118.

68 Luhmann, *Sistemas Sociales,* 127.

of the individual and society in the temporality of systems, in the constraint towards the selectivity of meaning by the impossibility of abandoning the world,[69] and in the double contingency and its consequent capacity to create out of destruction. Which means, finally, that it is through communication, but mainly through the negation of its meaning, that the social as well as the psychic world constructs itself as such.

Therefore, according to Luhmann, the problem of organisation is no longer a homeostatic problem, as it would be for Wiener, but a problem of differentiation. And in this, the denial, i.e. the ability to say no, always takes precedence because there is always more information and differentiation in what is alien than in what is familiar. It is the strangeness of rejection and denial that mobilises the continuity of communication and therefore, if an explanation for the organisation is sought, it cannot lie in the mere assumption of a humanistic tendency towards consensus and friendship.[70]

Due to this idea of double contingency and his prioritisation of difference, Luhmann radically separates himself from the philosophical tradition that preceded him.[71] This is also how Sloterdijk puts it. After Luhmann indicates a break with the past, which is not only historical but is characterised by the *de-satanisation* of the problem of the lack of ontological references anchored in familiarity.[72] And for this reason in Luhmann's view, society and the world can no longer be conceived of as given, in the sense that their organisation must necessarily be seen as improbable and problematic.[73] Contrary to the position of Husserl, for whom the world is conceived from the familiarity of the subject with respect to his surrounding world and the other selves around him,[74] for Luhmann it is not enough to imagine a certain correspondence between subjects, neither normative nor ontological, for the emergence of an intersubjective bond capable of guaranteeing coexistence and normativity.[75] On the contrary, sociability is conceived as a contingent

69 Luhmann, *Complejidad y Modernidad*, 29.

70 Sloterdijk, *Not Saved*, 193.

71 Lionel Lewkow, *Luhmann, interprete de Husserl: El observador observado* (Buenos Aires: Miño y Dávila, 2017), 45. See also Hans-Georg Moeller, *The Radical Luhmann* (New York: Columbia University Press, 2012), 25–27.

72 Sloterdijk, *Not Saved*, 50; 65.

73 Niklas Luhmann, "Globalization or World Society: How to Conceive of Modern Society?" *International Review of Sociology* 7, (1997).

74 Edmund Husserl, *Cartesian Meditations: Introduction to Phenomenology*, trans. Dorion Cairns (Dordrecht, Springer, 1977), 110.

75 Anthony Steinbock, Home and Beyond. Generative Phenomenology After Husser (Evanston, Northwestern University Press, 1995), 173. See also Axel Paul, "Organizing Husserl: On the Phenomenological Foundations of Luhmann's Systems Theory". Journal of Classical Sociology 1 no. 3.

and normatively deficient mode of organisation that is characterised by its variation. This is, in other words, by its constant disengagement with the past tradition.[76]

To defend this idea, Luhmann proposes a shift from the assumptions of what he himself calls the philosophy of consciousness—referring mainly to Husserl—towards the aforementioned paradigm of communication and the system/environment differentiation.[77] And with this, he tries to recover Husserl's concept of meaning but with a significant difference, which is the refusal to seek its foundation in something like a lifeworld.[78] This is because Luhmann's aim is to develop an understanding of meaning that can account for itself as meaning produced in a concrete scenario. Namely, a concept that could submit everything that previously had be taken for granted to an effort of clarification, which also includes the category of meaning itself or the normality of the world on which the sense of the commonplace is based. And this means that now, stripped of the lifeworld, meaning can only exist as a temporalised reference to itself. i. e. as the very demarcation of a contingent limit that is self-realised based on communications whose only fundamental characteristic is that they make sense because they can refer to themselves. That is to say, to what communications themselves have managed to establish as the normal and the constant—or the familiar[79]—as opposed to the unselected possibilities of all communication.[80]

In short, after Luhmann, it is communication that defines and makes coexistence and organisation possible. It is not intention or will, nor is it the common past that drives the association. Not anymore, at least, in a differentiated society.[81] On the contrary, communication and the technical means it uses to overcome the barriers of its context are responsible, according to Luhmann, both for the symbolic or normative construction of meaning and for the underlying possibility of uprooting from history: "…the evolution [narrative of meaning] is at the same time a link to history and liberation from history. It connects with existing conquests, but at the same time makes the system independent of its genetic conditions."[82] This implies that society must be understood as a self-substituting order that depends on its capacity to forget and therefore to de-mystify or even de-theologise itself.[83]

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76 Luhmann, *Complejidad y Modernidad,* 30.

77 Luhmann, *La Sociedad de la Sociedad*, 27. See also Paetau, *Niklas Luhmann and Cybernetics*, 87.

78 Lewkow, *Luhmann, Intérprete de Husserl*, 252.

79 Niklas Luhmann, "Familiarity, Confidence and Trust: Problems and Alternatives," in *Trust: Making and Breaking Cooperative Relations*, ed. Diego Gambetta (Oxford: Blackwell, 1988), 95.

80 Luhmann, *La Sociedad de la Sociedad*, 31.

81 Cárcamo-Petridis, "La Cultura Como autodescripción De La Sociedad Funcionalmente Diferenciada", 67.

82 Luhmann, *La Sociedad de la Sociedad,* 201.

83 Dirk Baecker, "Why Systems?", *Theory, Culture & Society* 18, no.1 (2001).

Now, what is relevant to the problem here is that with this approach, Luhmann manages to distance himself from the idea that the existence of society is conditional on a certain structure, which in turn depends on a subjective substratum. In fact, this is the core of his estrangement from Husserl's phenomenology.[84] On the contrary, after detaching himself from the uncomfortable figure of the subject, now replaced by *blackboxes*[85] Luhmann seeks a direct approach to the contingency and self-reference of society. Contingency, after having the problem of the ontology of society displaced, now moves from being a condition of the environment to a defining feature of society and, by extension, the individual. This revalorises observation, and in particular second-order observation understood as observation of observers, as a means through which to investigate complexity and unravel the illusions with which it manages to concretise reality for the individual. A question which, finally, refers to the pretension originally formulated by Gotthard Günther, of finding in cybernetics the key to amend the overvaluation of the image of the human being, above his environment.[86]

To summarise, then, what Luhmann tries to achieve using the tools of second-order observation and cybernetics[87] is to highlight the way in which society self-constitutes reality, while at the same time emphasising its blind spots. That is, its historical specificity and the semantic load of its values, traditions, and ideas, which, on the other hand, reveal the importance Luhmann places on Nietzsche's work as an effort at self-liberation. In fact, Luhmann, in reference to Nietzsche, writes at the beginning of his most important final work—*Die Gesellschaft der Gesellschaft*—that the sense of his work is to reconstruct the relationship with history, in the sense of approaching it from new points of view that might allow to highlight its incongruities, contradictions and paradoxes.[88] This, in turn, would make it possible to find and elaborate new ways of understanding the world, the human being and society's relationship to it. Ultimately, Luhmann seems interested in taking up Nietzsche's impulse, to not to accept ideas whose normativity is simply to be

84 Niklas Luhmann, *Theories of Distinction: Redescribing The Descriptions of Modernity* (Stanford: Stanford University Press, 2001), 33.

85 Luhmann, *Sistemas Sociales*, 118. See also Ignacio Izuzquiza, *La Sociedad Sin Hombres: Niklas Luhmann o La Teoría Como Escándalo* (Barcelona: Anthropos, 2008), 23.

86 Gotthard Günther, *Beiträge zur Grundlegung einer operationsfähigen Dialektik, vol. 3* (Hamburg: Félix Meiner Verlag, 1976), 224.

87 Heinz von Foerster, *Understanding Understanding* (New York: Springer, 2003), 242–244.

88 Luhmann, *La Sociedad de la Sociedad*, 20. See also Dirk Baecker, "Gypsy Reason: Niklas Luhmann's Sociological Enlightenment," Cybernetics & Human Knowing, 6, no. 3 (1999).

accepted as unconditionally valid,[89] but to advocate instead, as Sloterdijk suggests,[90] for a praise for the not-self. That is, to the emergence of the strange and the novel in a world overloaded with meaning. Or, as Luhmann himself says: for a gypsy reason.[91]

Considering this, it seems clear that Luhmann considers the mere keeping together of society, i.e., pure human coexistence and reproduction, to be a form of decadence of society. In a world already determined in advance, made from the structure of any subjectivity, according to Luhmann, the pure idea of history is meaningless. History only unfolds in the social system, through the bonding and unbonding with respect to it that becomes possible, not insofar as meaning or familiarity exists—as Husserl would think—but insofar as it can be intervened by the spontaneous and disruptive emergence of the non-familiarity with which the technical and artificial world of a communication that recursively turns back on itself is characterised.[92] And in doing so, Luhmann certainly follows the cybernetic impulse of a 'naturalisation of the mind' if that means seeing the mind reduced to its natural conditions. In fact, he also comes surprisingly close to some of the latest behavioural science research, for example that of Nick Charter and his idea of the lack of depth of mind.[93]

However, with his recompression of meaning within the framework of its contingency and second-order observation, Luhmann adds a semantic component to the self-elaboration of systems that allows for the aforementioned blurring of ontological barriers and to highlight instead the self-making process of meaning as part of an evolutionary orientation whose movement brings together consciousness, literature, technology or, in general, anything that can be seen as communication. Evolution whose purpose, in the other hand, is to encourage and promote the constant re-elaboration of human self-understanding in its relation to the world through communication. Sloterdijk explains this while analysing Nietzsche's influence on Luhmann: "there is no will, so there is no will to power… there is

89 Todd Cesaratto, "Luhmann, all too Luhmann: Nieztsche, Luhmann and the human," in *Luhmann Observed: Radical Theoretical Encounters,* ed. Anders La Cour and Andreas Philippopoulos-Mihalopoulos (London: Palgrave Macmillan, 2013), 108–110. See also Werner Stegmaier, *Orientierung im Nihilismus: Luhmann meets Nietzsche* (Berlin: De Gruyter, 2016), 60.

90 Peter Sloterdijk, *Sobre La Mejora De La Buena Nueva. El Quinto «Evangelio» Según Nietzsche*, trans. Germán Cano. (Madrid: Siruela, 2005), 112–113.

91 Luhmann, *Theories of Distinction*, 53.

92 Bernhard Waldenfelds, *Exploraciones Fenomenológicas Acerca de lo Extraño*, trans. Peter Storandt Diller, Marcos Romano Hassán and José María Muñoz Terrón. (Barcelona: Anthropos, 2015), 105. See also Elena Esposito, *Artificial Communication: How Algorithms Produce Social Intelligence* (Cambridge, MA.: The MIT Press, 2022), 1.

93 Nick Charter, *The Mind is Flat: The Remarkable Shallowness of the Improvising Brain* (New Haven & London: Yale University Press, 2018), 21.

only a multiplicity of forces, discourses, gestures and their composition under the aegis and direction of an I, which asserts, loses and transforms itself."[94]

As Nick Charter states, "…the unfolding of a life is not unlike to that of a novel…,"[95] and that is particularly true from Luhmann's perspective. What matters is not the depth of what is given, be it consciousness or tradition, but rather the possibilities that we are able to give ourselves through the reconversion of the past into semantic premises on which to orient self-reflexively towards the future of meaning. Which is to say, in short, that those involved in the task of self-understanding and observation of the world must find, in the exploration of meaning, a way of analysing and understanding the many ways in which history and its semantic legacy has turned in on itself to shape the fictions that sustain it. That is, the imaginary constructions of the unity of the system.[96]

Finally, this certainly means that in Luhmann's cybernetic thinking there is a rupture with what has been philosophical thinking up to the present. Without the ontological status of reality, it is no longer possible to conceive of man as an engineer of the world or a producer of himself, but rather as the one in charge of setting in motion the machinery through which the right circumstances are created for the realisation of a life according to the standards that history itself, as a narrative of narratives, has defined. To communicate, in this sense, is to be part of a process that never belongs to or derives from any particular or aggregate intention, but rather from a free play of meanings that makes the individual, as Sloterdijk points out, as a part of a medial nature.[97]

However, in a normative sense this medial character does not imply pure passivity in the face of a world that unfolds itself, but rather the adoption of an attitude of abstention in the face of complexity and contingency, with the aim of replacing the critical attitude, accused of being blind to itself,[98] with the observation of the meaning and self-organising strategies of society. And this with the aim of narrating the narratives with which society understands itself to reveal its blind spots and thus offer a glimpse of the reverse side of what has become normal in the organisation.[99] From Luhmann's cybernetic perspective, this constitutes both the basis of his sociological system and the root of all future philosophical endeavours.

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94 Peter Sloterdijk, *Sobre La Mejora De La Buena Nueva*, 115.

95 Charter, *The Mind is Flat*, 5.

96 Luhmann, *La Sociedad de la Sociedad*, 687.

97 Sloterdijk, *Not Saved*, 176.

98 Elena Esposito, "Author's Response: Opacity and Complexity of Learning Black Boxes," *Constructivist Foundations* 16, no. 3, (2021).

99 Edmundo Balsemão Pires, "The Epistemological Meaning of Luhmann's Critique of Classical Ontology," *Systema: Connecting Matter, Life, Culture, and Technology* 1, no.1 (2013), 5.

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