Deanthropomorphism and Self-Organization: Outlines of a Hayek-Luhmann Synthesis

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Abstract: In this article, I seek to compare two quite different social theorists: Friedrich August von Hayek and Niklas Luhmann. These two author's theoretical approach seems to present more differences than similarities and indeed, it is not apparent that either reflected upon the other's work. Society as a whole is, for Hayek, a self-organizing system of relations. Hayek uses the phrase „spontaneous order" to refer to the condition of dynamic equilibrium that results from the free operation of society. Without such freedom, the social system cannot achieve social benefits. It is through the Haykian idea of „spontaneous order" that I would like to connect his work with that of Luhmann. In Luhmann's case, society is an assemblage of „functional systems", self-organizing units that transform themselves and adapt to their environments. Unlike Hayek's theory of society as a spontaneous order, in the Luhmannian framework social systems are self-organizing units independent of the intentionality of human agents. Social systems are „autopoietic", meaning that they create and stabilize their own inner structures. In this article, I shall refrain from utilizing the entirety of Hayek and Luhmann's substantial bibliography, an exacting task that would demand an entire monograph, and focus on two of their most systematic works: Hayek's immense *Law, Legislation and Liberty*, first published in 1973, and Luhmann's *Soziale Systeme*, originally published in 1983. Through the common thread of self-organization, I hope to connect these two important thinkers.

Keywords

autopoiesis, Friedrich August von Hayek, Niklas Luhmann, self-organization, social theory

The term „self-organization" was first coined by psychiatrist and cybernetician William Ashby in a widely cited and highly influential 1947 article, „Principles of the Self-Organizing Dynamic System." Before unpacking what Hayek and Luhmann have to say in this regard, it will be helpful to define what „self-organization" is. In his article, Ashby advances the view that machines are not wholly predetermined automatons, but rather, are able to „undergo spontaneous changes of internal organisation." (Ashby 1947, 125) If a machine reconfigures itself without outside interference, it may be at once determinate and self-determinating. Everything depends on whether changes are observed within the machine's internal structure. Hence, for Ashby, it is important that such changes be quantifiable. Real systems, because they are dynamic and embedded within broader material networks, are amenable to external measurement. The machine is an „absolute system", in as much as it unites within itself a range of internal components. If changes are observed within the inner structure of the machine, it may be surmised that these changes are self-induced. Each system in Ashby's thought-experiment has at least „two organisations or fields": when machines become self-organizing, they abruptly switch fields. (Ashby 1947, 128) A self-organizing machine is capable of enacting a movement between two points in time, that leads to both a change in its external circumstances and its internal structure. In other words, the self-organizing machine has several different fields. (ibid)

A literary illustration may be of help here. In E.T.A. Hoffmann's magical 1816 short story, *The Sand-Man*, we are acquainted with Olimpia, a captivating young lady who is, alas, not all she seems. The protagonist of the novel, Nathanael, falls in love with Olimpia after dancing with her. Apparently, she is capable of independent movement, and would pass Ashby's test for self-organization. In this sense, Olimpia has several fields. She can apparently perform different kinds of movements with a certain degree of dexterity. Olimpia has a fashion-field, endowed as she is with perfect taste for clothes. She also has a musical-field, exhibited in her piano and singing skills. She has an emotional-field, as exhibited by the yearning in her eyes that incites Nathanael. Also, Olimpia listens with patience to Nathanael's mystical stories, without showing the slightest sign of boredom. She can even give her assent, repeatedly saying „ah ah" to whatever Nathaniel tells her. Olimpia is characterized by a multitude of fields: she is a self-organizing machine. Passive machines, such as puppets for example, by contrast, have only one field: that which they are given by other machines. A puppet can do no more than what the puppet master compels it to do. Tragically and heart-breakingly, Nathanael does not seem prepared to countenance the possibility that machines can return to the state of passivity. Already, we realize that something is amiss, that Olimpia is has not wholly shed the possibility of regression into a passive state, when she reacts in a regrettably dull manner to Nathanael's comically exasperated entreaty: „'Yes, you are my lovely, glorious star of love,' said Nathanael, 'and will shine for ever, purifying and ennobling my heart.' 'Ah! Ah!' replied Olimpia, as she moved along." (Hoffmann 1967, 207) The simplicity of Olimpia's speech betrays the fact that her inner structures are simpler than we would assume. Here we have found a simple field: in terms of language use, she has not been programmed to use syntax in a human manner. Yet Nathanael's blatantly overwritten description of his own emotions (who in his right mind would

utter such sentimental claptrap?) betrays the pervasiveness of artifice. It would seem that Nathanael has given up one of his fields, i.e. the possibility of sexual relations with other, organic women, for a one-sided appreciation of a robotic woman who cannot respond to his communication. A machine is never simply active or passive, self-organizing or organized by external causal agents. Olimpia is never fully human, but neither is Nathanael, a fictional character every bit as artificial as she is, and perhaps even a great deal more contrived. Instead of describing what Olimpia does, Hoffmann prepares us for the final, climactic revelation through an example of negative description:

> She neither embroidered, nor knitted; she did not look out of the window, or feed a bird, or play with a little pet dog or a favourite cat, neither did she twist a piece of paper or anything of that kind round her finger; she did not forcibly convert a yawn into a low affected cough-in short, she sat hour after hour with her eyes bent unchangeably upon her lover's face, without moving or altering her position, and her gaze grew more ardent and more ardent still. And it was only when at last Nathanael rose and kissed her lips or her hand that she said, 'Ah! Ah!' and then 'Goodnight, dear.' (Hoffmann 1967, 209)

Here the limits of Olimpia's self-organization become apparent. This list of qualities serves as a reminder that the boundaries between human and nonhuman cannot be equated with self-organization and external organization. Far from being a case of „either/or", self-organization can be interpreted in the mode of a gradient, which ties in with Ashby's assertion that self-organization is a quantitative matter. As opposed to Olimpia, Hoffmann seems to imply that a real woman exhibits, at least occasionally, the following behaviors: embroidering, knitting, looking out of windows, feeding birds, playing with little pet dogs and/or cats, twisting pieces of paper („or anything of that kind") around her finger and, most entertainingly, forcibly converting yawns into coughs. All of these characteristics are missing in Olimpia. Living women have more fields of activity, and exhibit a greater degree of self-organization. What is most disturbing about Olimpia is her in-betweenness: she is a machine that has too many of the characteristics of womanhood not to qualify as a woman, but she has too little of these to actually qualify as a living person. But for Nathanael, all that matters is the ardency of Olimpia's gaze. Self-organizing machines, by definition, are capable of moving between (and installing themselves in) various fields. This circumstance, however, also entails – and here we must correct Ashby – the possibility of slipping and sliding between self-organization and inert passivity. Unfortunately for Nathanael, his love blinds him the this possibility. Too late, he discovers the shocking truth that self-organizing machines are fully capable of regressing into immobility: „Nathanael was stupefied - he had seen only too distinctly that in Olimpia's pallid waxed face there were no eyes, merely black holes in their stead; she was an inanimate puppet." (Hoffmann 1967, 210)

Her eyes removed, Olimpia is dehumanized. Inanimacy rules out the possibility of self-organization, and actually renders suspect her earlier gestures and movements as well. Once the eye becomes a black hole, the mind cannot resist the talons of insanity. The experience of seeing the emptiness of Olimpia's eye sockets drives Nathanael insane. „Rending his mind and thoughts to shreds" (ibid), madness takes hold of the situation, transforming the disappointed male into a

marionette puppet, an agent with only one field. His only pathway from here on, catalyzed by social disgrace - how could anybody have fallen for an automaton? – is the path of disquiet. Already, prior to the moment of his mental breakdown, Nathanael is the pawn of his own emotions that have attained an autonomy of their own: „Nathanael rushed in, impelled by some nameless dread." (Hoffmann 1967, 209) This nameless dread is the realization that agency is not an either/or, but rather, a slope upon which one may roll along in the manner of a snowball. Olimpia's eyes were black holes all along, unseeing inoperative organs that were manifestly successful in manipulating the desirer's vision. Her ardency and desire are perfectly transparent surfaces, designed to entrap eager males. Needless to say, in an age of sex robots and lifelike dolls, Hoffmann's novel counts as a singular work of prophecy.

But how does all this relate to the issue of self-organization? As we have seen, spontaneity is not an either/or. I utilized this example drawn from literature to highlight this circumstance. The moral of the story is that if it looks like a duck and quacks like a duck, we can be forgiven for thinking that it is a duck. Nathanael's folly is that he treats Olimpia as being more self-organizing, more authentic, than she actually is. *The Sandman* also raises the important question as to whether we ourselves are more manipulable than we may think. Self-organization is a slope and not an absolute condition. There are gradations of self-organization. Different systems are more capable of transforming their inner conditions and travelling between environments. This will be important to bear in mind when seeking to dissect the role of self-organization in both Hayek and Luhmann's work. First, I would like to expand on this theme and see what Hayek has to say on „spontaneous order" in his famous multivolume tome, *Law, Legislation and Liberty* (1973), before taking a look at how Luhmann conceptualizes the autopoiesis of social systems.

Hayek's basic premise is that when speaking of biological or social systems alike, we must separate organization from design. Western thought, the rationalist tradition in particular, is too committed to the anthropomorphic use of language. When we observe structures, we are inclined to believe that some plan preceded their development. Such a conceit, however, is false and betrays a tendency within human beings to extrapolate their own qualities into the world. (Hayek 1998a, 27) This is far from the case, for the vast majority of systems have grown of their own accord, without the assistance of any intention. Hayek distinguishes between two different forms of order. „Made" orders are artificial constructs that may be traced back to intentions, plans or designs with a fair degree of certainty. Somewhere, somehow, somebody constructed this object, say Olimpia or the pyramids or the highway. What Hayek calls „spontaneous orders", on the other hand, are „self-generating" and „endogenous." (Hayek 1998a, 37) We like to think that society is controlled by human desires. But the idea that social life conforms to human intentions is, for Hayek, a false conception, a delusion that is all too comfortable. Hayek names this position „rationalist constructivism", and its root lies in the all too human wish to „interpret all regularity to be found in phenomena anthropomorphically." (Hayek 1998a, 9) It is only natural that we seek to live at home in the world. For several years, the scientific community has been divided as to how various strange surface features on Mars should be interpreted. Are they the result of intelligent design, proof of organic life, or merely spontaneously occurring products of inorganic elements? The human mind is given to projecting patterns onto surfaces that lack any discernable patterns. This tendency is called „pareidolia" by contemporary psychology. It is far from simple to discern between imagined patterns and real materialities. One study, for instance, claims that sediments from Mars display the hallmarks of biomineralization, wherein microbes introduce transformations into rock layers, and that these deformations cannot be the products of human minds overeager to discover Martian life. (Rizzo and Cantasano 2017, 297-316.) The

situation is made more difficult by the very fine line between self-organization and organization pure and simple, not to mention zero organization. Even the line between the inorganic and the organic seems to be extremely difficult to determine.

Where does social pareidolia[i] begin and legitimate social analysis begin? Hayek disputes that all social institutions must be the product of design. Instead, social systems are the created through „growth" and „evolution." (Hayek 1998a, 9) Evolution, in turn, is inseparable from adaptation. Only those societies survive that are capable of creating rules suitable for their successful adaptation to external pressures and competition. Institutions are constructs that lack any purpose in view: they are produced by humans, but this process of production is not enacted with any purpose in view. Success is only ever determined *a posteriori*, after a society has demonstrated that it is capable of thriving in an inhospitable Darwinian environment. Social history is characterized by the struggle between rival cultures; through a long process of cultural selection, only those cultures can survive that follow the correct rules. As Hayek sees the human condition, „man is as much a rule-following animal as a purpose-seeking one." (Hayek 1998a, 11) The rules we follow in our dealings need not be entirely known in order for us to live by them. Most of the rules governing social conduct are unwritten, unspoken axioms that recede into the background of social life. These background factors that enframe social life are sedimentations of selective pressures. Only those rules survive which are of utility for the survival of the society in question. Societies governed by ineffective, unwieldy rules tend to collapse and disappear into the oblivion of history. Hayek's position on this point seems rather tautological, but it is hard to deny its validity: bad rules can hardly make for good societies. Rules, it must be emphasized, are not restricted to legal codes. In addition to what is codified in the legal system, rules are also pregiven in the form of customs, habits, ideals and traditions. This is a necessity stemming from the finitude of human knowledge.

Reality is infinitely more complex than the mind of even the most intelligent being. It is for this reason that imagining the entirety of any society, in particular a modern one, along the lines of a closed system, is erroneous. As Hayek notes, „a designer or engineer needs all the data and full power to control or manipulate them if he is to organize the material objects to produce the intended result. But the success of action in society depends on more particular facts than anyone can possibly know." (Hayek 1998a, 12) There is no all-seeing engineer who is capable of ever knowing the entirety of circumstances and facts that pertain in even a relatively simple society, let alone one as complex as a functionally differentiated modern one. Order is a dynamic evolutionary process that results from the adoption of rules that enable groups to prevail over others. (Hayek 1998a, 9) Self-organization and self-adaptation are consequences of human ignorance. There are no humans, or even groups of humans, no club of experts actually capable of designing a perfect society. Throughout his long career, Hayek railed against all those who thought themselves capable of planning society. The very notion of „social planning" is anathema for Hayek, because planning is inseparable from knowledge. Without knowledge pertaining to the entirety of society, no system of social engineering could success. And it is precisely this absolute knowledge that even the most technologically advanced economic planner will never have. This is why self-organization is not only desirable, but unavoidable. As distinct from simple, closed systems, the „structure of human activities constantly adapts itself, and functions through adapting itself, to millions of facts which in their entirety are not known to anybody." (Hayek 1998a, 13) Nobody is in a position to know, no human being occupies some „God's eye view" of the situation. Hayek's most important move is to drive a wedge between order and intentionality. The fact that a system displays a pattern does not entail automatically

that it was designed purposefully. Advanced civilizations are characterized by „the fragmentation of knowledge." (Hayek 1998a, 14) No single agent has a monopoly on knowledge, and this allows for the production and proliferation of information.

There are forces underneath human knowledge that present themselves through the process of differentiation. Self-formation does not preclude stabilization; quite the reverse. Only those systems can attain to a measure of inner stability and structural integrity that regularly change their own elements. All orders require the translation, exchange, recomposition and decomposition of their molecular components. It is erroneous, however, to view such processes as indicating the presence of a person underlying the phenomena. The scientific validity of Intelligent Design in the case of natural phenomena has been rightly discredited. But the same cannot be said for social theories. Much of social science suffers from what may be described as a „pareidolia of the social." By this, I mean that many sociological paradigms are, tacitly or explicitly preoccupied by the search for privileged social groups whose pernicious influence may be blamed for any and all social ills. While nobody, Hayek included, would dispute the existence of certain structural injustices in even the freest of economies, the idea that social life is the result of the machinations of elites can give ideological succor to the most dangerous populist ideologies. When society „acts", this action cannot be reduced to intentional actions. (Hayek 1998a, 27) Society simply does not operate in the manner of a trivial machine. Hayek is quick to highlight the dangers of using such verbs as „acts", „treats", „rewards", „values", „controls" or „owns" when referring to the operation of social systems. (Hayek 1998a, 28) Such phrases fail to take into account the mind-independent nature of modern society. Self-organization induces the whole and its components: it is always already there, signalling, preforming features, pursuing the actualization of elements. Social components fulfil „functions", without being necessarily aware of these functions. „A function", Hayek observes, „may be performed without the acting part knowing what purpose its action serves." (ibid)

Not only does selectivity pertain to rule-adoption and rule following, but also to the constitution and reception of information. The human mind itself is a selective apparatus, an information-extraction and processing machine that selects elements from its environment. Cognitive selection is achieved through the subjective allocation of relevance to the objects that constitute our world. Without selective closure, the mind would be flooded by waves of irrelevant data. Indeed, in social media addiction, we can identify a kind of destructive openness that results in the Internet user being swamped with irrelevant media content. Because social media addicts are unable or unwilling to exercise cognitive selection, they drown in a sea of digital pixels, weighed down by their own apathetic acceptance of their pathological situation. The successful pursuit of relevant elements demands a selectivity that pertains to relevance itself, as well as a toggling among the various signals the agent is bombarded with. Such adaptational success demands cognitive outsourcing. Tradition is one such mode of reducing the burden of living in a world saturated with irrelevance. (Hayek 1998a, 30-1) Most of what Hayek holds to be „knowledge" is non-conscious, and for the most part, unverifiable. We do not have the time or patience to verify each and every background assumption or rule governing our lives. Intelligence is abstraction, in the sense that it necessarily simplifies its own environment to a phenomenal profile useful for the agent's own purposes. (Hayek 1998a, 30) In the Great Society, there is furthermore a tendency to an ever greater degree of abstraction.[ii] Information pickup, because of its abstract nature, demands ever more complex modes of translation, transcription and transmission. Individual agents, informed as they are by sedimented collective behaviors, tend toward a minimum of energy expenditure in relation to gathering information. Just as living matter depends upon non-

living matter for the stabilization of its own inner structure, so living individuals are dependent upon the past experiences of their dead ancestors. The living and the dead coalesce in a dependency that gives room for further waves of proliferation, complexification and informational outsourcing. To put it differently, out-sourcing is the precondition of in-formation, yet this exteriorization is already in itself informed by the in-formation of the perceiving agent.

As already mentioned, Hayek differentiates between „made" and „grown" order. Hayek defines order in the following manner:

„By 'order' we shall thoughout describe a state of affairs in which a multiplicity of elements of various kinds are so related to each other that we may learn from our acquaintance with some spatial or temporal part of the whole to form correct expectations concerning the rest, or at least expectations which have a good chance of proving correct." (Hayek 1998a, 36)

The behavior of all manner of machines may be predicted through extrapolating from their components. It must be emphasized, however, that just as in the case of the self-organization/organization duality, we may uncover another duality: that of order and disorder. Returning to the unfortunate case of Olimpia, not only does she become an immobile, inert machine but she is also revealed to Nathanael in a damaged state. Her components become uncertain; if the eyeballs can fall out, what guarantee is there that her arms will not fall off at some importune moment? Olimpia the Eyeless, as opposed to the Olimpia endowed with lifelike, large eyes, is a disordered machine, a broken object, a purposeless tool. Underneath even the simplest of machines, we find a quadruple structure, composed of order/disorder and organization/self-organization. In some objects, the self-organizing aspect remains a dormant possibility, while in others, disorder seems to be impossible until the moment of collapse, destruction or death. In the case of a disordered, chaotic system, one cannot extrapolate from the absence or presence of a component the absence or presence of other components. The tension between order and disorder, or that between made and grown orders, seem to be internal to all systems. Radical change is nothing if not a transition of the elements into one or another of these four states. When destabilized, a system's inner elements arrive at a state of symmetry-breaking disquiet, tearing apart the structure in which they were formerly enveloped.

Made orders are „exogenous", while spontaneous orders are „endogenous." Hayek uses the Ancient Greek expressions *taxis* and *kosmos* to refer to these two different orders, *taxis* corresponding to made/artificial/exogenous order and *kosmos* to grown/spontaneous/endogenous order. (Hayek 1998a, 38) There are orderly structures that have been produced by social means and practices without being the products of human design. While Hayek's approach is admirable because of its non-anthropomorphism, the scope of his investigation is nevertheless limited by the restriction of the social realm to the human domain. As we shall see, Luhmann's model is more radical in that it destroys the integrity of individual subjects, whereas Hayek is limited by his commitment to methodological individualism. Indeed, the collective nature of selective cultural evolution stands in contrast to Hayek's emphasis on individual consumer decisions, an interesting tension that has been explored and critiqued by Christina Petsoulas, among others. (Petsoulas 2013) Whether evolutionary theories exclude individualism or not, Hayek's use of *kosmos* is imaginative. Such phrases as „the cosmos of the market" betray a talent for reutilizing

and reconfiguring concepts that is indicative of all great thinkers. (Hayek 1998b, 108) From the existence of an orderly cosmos or a functioning market, we cannot deduce the presence of an all-seeing deity who constantly intervenes in the functioning of that cosmos.

Function, Hayek emphasizes, does not stand in correlation with any purposive teleology. In relation to self-organizing systems, we can only speak of „purpose" in relation to order. Purpose, for such components, would „mean nothing more than that their actions tend to secure the preservation or restoration of... order." (Hayek 1998a, 39) Even abstract properties can be purposive, in the limited sense that their collective behaviors contribute to the maintenance of the system they are integrated into. Function is the synonym of purpose. Order, far from being a static condition, is a regularity, a repetition of the elements. (Hayek 1998a, 40) Hence, it is inherently dynamic, a structure of adaptations that breeds newer structures, an assemblage of particularities that cannot be known in their entirety by any individual agent. If Hayek's cultural evolutionary is commensurable with any form of individualism, then this is an individualism composed of systems rather than persons, a theme that returns in Luhmann's systematic social theory. In the case of a self-organizing system, extrapolation can only predict „the general character of the order that will form itself." (ibid) The positions of the elements, as well as the complex patterns and future strategies enacted by them, remain uncertain. Without uncertainty in relation to the future, there can be no maintenance of stability within the inner sanctum of the system. This may seem paradoxical, but we must remember that spontaneous order is a dynamism. Spontaneous orders display a complexity far superior to that of simplified, abstract machines. Determination only pertains to features that have been abstracted from the self-organizing system. In general, spontaneity gives birth to degrees of complexity „we could never master intellectually, or deliberately arrange." (Hayek 1998a, 41) Nobody can master the cryptocurrency market, for instance, because the degree of its deterritorialization obviates any attempt by governments to bring it under heel. Commentators such as Ian Bogost have already written of the potential for decentralized blockchain financial technologies to eventuate new forms of authoritarianism. (Bogost 2017) Once automated, social oppression could indeed be accelerated and outsourced into technological solutions.

The question of the empirical applicability of such dystopian perspectives to the analysis of contemporary social life must be left open at this stage. Rather, I would like to focus on the epistemological ramifications of self-organization as imagined by Hayek. Not only is epistemological deficiency a precondition of spontaneous order: the proliferation and complexification of such grown orders means that the individual's share of knowledge, when compared to society as a whole, is only likely to decrease further as the system's inner complexity increases. Knowledge, in Hayek's model of society, is distributed, pervasive and fragmented. (Hayek 1998a, 41-2) As a consequence, „the degree of power of control over the extended and more complex order will be much smaller than that which we could exercize over a made order or *taxis*." (Hayek 1998a, 42) The cosmos is too complicated to control for any group of even the most technologically aware and highly informed humans. It is a system that has grown independent of human intentionality. Here Hayek echoes the concerns of such contemporaries as Jacques Ellul, with an important exception: whereas Ellul sees an existential threat in the growing autonomy of technique, Hayek does not view the growing complexity and independence of social systems from human intentionality in such a negative light. (see Ellul 1964; Winner 1978) Quite the reverse: the growth of social complexity achieved by social systems actually serves to free the creative potential of social agents. No order is possible without rules. Blockchain as a technology is dependent upon rules of encryption and decoding.

Similarly, society in Hayek's opinion is only able to function because of the existence of rules governing the repetitions of its inhabitants. In another indication of his intellectual depth, Hayek identifies the possibility of negative repetition, regularities that may destroy social life:

„It is evident that in society some perfectly regular behaviour of the individuals could produce only disorder: if the rule were that any individual should try to kill any other he encountered, or flee as soon as he saw another, the result would clearly be the complete impossibility of an order in which the activities of the individuals were based on collaboration with others." (Hayek 1998a, 44)

This piece of negative description achieves yet another bisection often overlooked by Hayek scholars: the difference between positive and negative regularity. Let us imagine a world that has been overwhelmed by a disastrous economic calamity, such as the absence of fossil fuels. Because of the current excessive dependence of the modern world on the ready availability of fossil fuels, a sudden shortage could have devastating repercussions. Such a dreadful scenario is envisioned in the 2007 horror film, *Tooth and Nail*. During the course of the film, we are treated to the vision of a gang of bloodthirsty cannibals, roaming the deserted streets for human flesh, tearing apart their enemies in chaotic scenes of mayhem. Their rule is to eat one person at a time. If everybody, or even a substantial part of the population were to follow such an imperative („eat any you encounter" or „eat those you encounter one at a time"), society would probably not be able to function at a high degree of complexity. Instead, it would collapse into an advanced state of neo-tribal degradation. One could even imagine rewriting the plot of *Tooth and Nail*, resituating the cannibal hordes to a date and place prior to the civilizational collapse, perhaps even unveiling these bands as having caused the catastrophic oil shortage plaguing the city in the first place. It is not enough to have rules: good rules create opportunities for ever more complex forms of cooperation. Bad rules, on the other hand, make „collaboration with others" impossible. From a Hayekian perspective, we cannot say that the rules followed by the imaginary postapocalyptic cannibal horde are conducive for the evolutionary growth of social life, provided that such growth is a culturally accepted value in the given society. Those who do not believe in the growth of human presence or who hold the complexification of society in contempt have no room in Hayek's model. They are the remainder, the tacit cannibals who lie in wait for the moment when current social rules banning unrestricted murder („thou shalt not kill" vs. „kill any other you encounter") are overturned and a new age of barbaric chaos will ensue...

It is of paramount importance that individuals follow rules conducive to the evolutionary adaptation of their society. At least some measure of conventionality is required on the part of social agents. Were every potential cannibal free to live out his or her fantasies, the social consensus regarding the integrity of human life would be endangered. Individuals must accept rules, whether they agree with them or not. (Hayek 1998a, 45) Modern society as envisioned by Hayek is not composed merely of individuals, but also „deliberate organizations." (Hayek 1998a, 46-7) It is in this sense that Hayek's individualism must be qualified, for this is an individualism that treats institutions, companies and movements as individual units of observation. What is regrettable here is that Hayek does not expand this register of individuals to contain specifically nonhuman components. Had he done so, we would have what Levi Bryant has called a „democracy of objects", an assemblage of various social agents, human and nonhuman alike,

adapting in their own ways to social life, following rules and enacting forces, each contributing to the formation (and in-formation) of spontaneous orders. (Bryant 2011) Such a complete decentering of the human seems far from Hayek's intentions, but we nevertheless find traces of such a posthumanist perspective in his rejection of hierarchical social theories. The human, in this context, is no longer the center of social life, and it is in this sense that I venture to use the term „posthuman." In Hayek's model, social actions accumulate in the form of spontaneous orders that are indepdendent of any individual or group of individuals. For Hayek, the spontaneous order contains several nuclei, some with more definite boundaries than others. But there is no single center of orientation, no controlling position within a spontaneous order, in spite of the inequality of its components. (Hayek 1998a, 47) The growth of aggregate social knowledge is achieved through the complex interplay of components. Hayek calls this system of interrelations „catallaxy." Prior to proceeding to Luhmann and his notion of „autopoiesis", we must outline what Hayek understands by catallaxy. This concept represents Hayek's own take on the Greek verb *katallattein*, which denotes not only the „act of exchange", but also „admission to the community." Before teasing out the implications of Hayek's concept, we must understand what he takes „market" to be. As distinct from much of economics, the „market" should not be conflated with „the economy." In Hayek's view, „the cosmos of the market neither is nor could be governed by (...) a single scale of needs; it serves the multiplicity of separate and incommensurable ends of all of its separate members." (Hayek 1998b, 108) If the globe is an economy, the market is a cosmos.

A market order is composed of a multiplicity of economies. There are as many economies as there are human desires, perversions, lifestyles and flows of energy. Thus Hayek, far from reducing the range of human motivations to that of monetary accretion, wants to give scope for the full diversity of desires. No agreement regarding ends is required in a catallaxy. (Hayek 1998b, 109) In fact, such an agreement regarding desirable ends is actually counterproductive, and must be avoided. The market as a general catallaxy necessitates the growth in complexity, which cannot leave consumer desires intact. Desires too must proliferate within the machinic matrix. In the Great Society of general catallaxy, social life becomes anonymous. What is so refreshing about Hayek is that instead of deploring this condition of alienation, something a critical theorist or a traditionalist would arguably do, Hayek recognizes the emancipatory potential of indifference. We participate in the market without caring for the aggregate or the general well-being of those we lack direct contact with, and yet growth happens, technology proliferates, messages are born, buildings are constructed, signals are transmitted, and the entirety, the market in general, grows. (Hayek 1998b, 109-110) Pure instrumentality reigns supreme, and social life proceeds along a path of progressive complication, differentiation and mutual separation. Hayek's fundamental recognition is that this process is a self-generating one, independent of human intentionality. The importance of this recognition, the Hayekian discovery of catallaxy, cannot be overemphasized. Posthumanism's ever growing presence in the humanities allows us to reread classics of social theory, Hayek included, from a new, innovative perspective. Rather than tirelessly arguing for solidarity, or social unity, or the conformity of goals among individuals, Hayek bravely calls for the complete fragmentation of desirable ends. (Hayek 1998b, 111) Rather a thousand bleeding wounds upon the body of society than a singular, intact bodily cavity, hollowed out from within! In and of itself, the economy becomes a hollow body-without-organs, a sterile shell. It needs the multiplicity afforded by the market in order to become what it is, to become a pregnant body waiting to tear itself apart, giving birth to new, unprecedented repetitions.

Another theorist whose work contributed significantly to the disanthropomorphization of social theory is Niklas Luhmann. Considering the sheer volume of Luhmann's work, which equals that of Hayek in terms of breadth, and perhaps even surpasses Hayek in terms of complexity, I would like to introduce a single concept from this extensive oeuvre: that of *autopoiesis*. In his 1983 book, *Social Systems*, Luhmann presents a model of society which conceptualizes modern, „functionally differentiated" societies as being composed of various „autopoietic" functional systems. Such systems are self-organizing energetic assemblages that determine their own inner elements. (Luhmann 1995, 22) The word itself, *autopoiesis*, is adapted by Luhmann from Humberto Maturana and Francisco Varela, two biologists who used this term to designate the self-referential nature of cells and organisms in general. Analogously, Luhmann views functional social systems as inherently self-referential entities:

„One can call a system self-referential if it itself constitutes the elements that compose it as functional unities and runs reference to this self-constitution through all the relations among these elements, continuously reproducing its self-constitution in this way. In this sense, self-referential systems necessarily operate by self-contact; they possess no other form of environmental contact than this self-contact." (Luhmann 1995, 33)

The elements composing the system cannot be abstracted into its interiority, for the system itself performs the task of sorting, running programs and maintaining order. Autopoiesis is the process of maintaining one's own inner constitution. According to the Luhmannian framework, functional systems, being themselves eachother's complex environments, relate to one another in the manner of mutually inaccessible „black boxes." What they see of one another is a reduction, a caricature, an abstraction. (Luhmann 1995, 109) As opposed to Hayek, who posits a holistic, almost transcendental „market", which serves as the spontaneously ordered aggregate of various heterogeneous „economies", in Luhmann's social philosophy there is no cosmos. Instead of just a product of exchange, here we find „meaning" as the substance of social life. While in Hayek's case, human intentionality no longer forms the central pole of society, Luhmann drives a further wedge between human beings and the realm of the social, separating „social systems" from „psychic systems." Meaning is not produced by social actors, but rather „supports itself in that it enables its own self-referential reproduction." (Luhmann 1995, 98) Even in the case of psychic systems, reproducing themselves through psychosexual communication, we have an instance of meaning producing the conditions of its own production. Socially coded meaning possesses an „auto-agility" that is reminiscent of Hayekian catallaxy. (Luhmann 1995, 66) Self-referentiality is a direct consequence of environmental complexity. In order to complexify their own inner structures, emergent systems must separate themselves from their environments.

Selection is endogenous, and a necessity for successful adaptation. (Luhmann 1995, 37) Furthermore, as complexity grows and the inner structures of an autopoietic system become more convoluted, the self-organizing system in question tends to amplify its own selectivity. (Luhmann 1995, 45) In relation to structures, we may differentiate events that conform to the structures of the system, and deviant events that threaten its integrity. In order for autopoiesis to proceed successfully, functional systems must restrict the amount of deviant events occurring within their interstices. Stability is not the effect of an exogenous agent operating on the autopoietic system. Rather, the latter, as opposed to mere trivial or passive machines, „owes its

stability to itself (...) it constructs itself upon a foundation that is entirely not 'there'" prior to the system's emergence. (Luhmann 1995, 48) Social systems are aggregates of „emergent orders", developing from the complexity of their own, mutually inaccessible functional components. (Luhmann 1995, 109) Functional systems are black boxed entities, arrangements and pattern formations that communicate in a context-dependent manner, without having to make their own inner complexity fully accessible to one another. In Luhmann's case, not unlike Hayek, social order is a dynamic state of controlled complexity, and not a static state. A certain amount of systematic instability is required for social innovation to continue. Stripped of its authoritarian implications, social order becomes a concept able to capture the interrelations between various social elements and components. Functionality demands mutual respect, as well as a tolerance for the boundaries between different functional groupings. Without borders separating the operational components, determination would become a one-way street, and autopoiesis would break down soon. The social system is a hetero-determinational „self-referential circle." (Luhmann 1995, 118) Boundaries determine, for instance, what counts as a legitimate, decodable communication for the functional systems.

Communication, as an arrangement, cannot be universal, for the simple reason that none of the subsystems follow the same code. When enacting selections, systems follow programs. Each system has its own program, its own method of „fixing conditions for the action's correctness by providing either conditions that trigger action or goals that action should aim for or both." (Luhmann 1995, 203-4) A system can only run programs that are suited for its own purposes (we must remember here that the word „purpose" denotes the „function" of the system, and should not be taken to entail any intended purpose). Autonomy does not mean that the system is not dependent on its environment. To cite just one obvious example already mentioned in passing, modern societies are dependent upon access to cheap sources of fossil fuels. Heightened systematic complexity and strengthened self-reference vis-a-vis its own environment can go hand in hand with increased dependence upon certain environmental inputs. As Luhmann emphasizes, the functionally differentiated social system „can achieve more sensitivity, more clarity in perceiving the environment, and more indifference, all at once." (Luhmann 1995, 204) Regarding the issue of fossil fuel depletion, one could argue that modern societies are sensitive to the topic of climate change, have a fairly accurate picture of the future potential capacity of oil reserves and an indifference to the consequences of such information – all at once, without any danger of systematic instability or schizophrenic collapse. A certain degree of schizophrenia is actually beneficial to the social system, in that internal contradictions are conducive to the mass production of communication, and thus contribute to the maintenance of economic growth. To an even greater degree than Hayek, Luhmann subordinates individual actions to the unfolding of social evolution. If Hayek's approach may be characterized as a dual individualism - or dividualism - of individual consumers, as well as organizations conceptualized as being synonymous with individuals, then Luhmann's is a collectivist vision of connectivity. In the latter's model, individual actions are merely self-observations of the self-organizing system itself, performed „in a way that produces support points for further connective actions." (Luhmann 1995, 167) Individual actions are instrumental in the manufacture of communication.

Free initiative, from a subjective standpoint, is important for a wide variety of reasons. But from a systems theory standpoint such as that represented by Luhmann, actions serve as precursors for connective actions. Actions are required solely to accentuate the amount of connections prevalent in the social world. It is not humans, defined broadly as psychic systems, that are the authors of social action. Instead, Luhmann posits „the system" as „the author of selections."

(ibid) Determinations are performed with a view to their connective potential. Only those selections will be maintained by a well-functioning social system that are helpful in the system's accumulation of connective values. Deviant events and malignant components are, for connective productivity, indifferent at best, hindrances at worst. This is functionalism, but with a curiously posthuman twist. Human beings, including their own, biologically grounded mechanisms of autopoiesis, lie outside society. (Luhmann 1995, 265) The autopoiesis of the social cannot be confused with biographical circumstances and facts of human life, because society is a fundamentally synthetic assemblage of functional units. As a whole, society as conceptualized by Luhmann, is essentially inorganic. Structure is always already given in the pervasiveness of autopoiesis. Humans have no monopoly on self-organization. It is only when they are united that structure and self-organization determine a horizon of heterogeneous possibility. (Luhmann 1995, 220) Without such an interlocking relation, society would proceed to fall apart. That being said, interrelations among the „black boxed" functional systems must be mediated in a manner that keeps their respective operative closures intact, while allowing for a measure of openness adequate to the pickup of new information. Communication, in this context, is nothing more than the mutual stimulation of systems. Emotions, are even more self-referential, being defined by Luhmann as „internal adaptations to internal problem situations" on the part of psychic systems. (Luhmann 1995, 274)

In addition to the emotional/irritative element, Luhmann also differentiates a section of the self-organizing functional system that fulfills what may be called the „immune" function. As opposed to other social components, the immune system represents a categorical rejection, for „it operates without communication with the environment." (Luhmann 1995, 403) While in Hayek, it is the role of government to implement the self-defense of the system from outside, in particular by ensuring the enforcement of rules, in Luhmann's case immunity is endogenous to the system. (Hayek 1998a, 47) It may be argued that the latter's conception gives far more leeway for authentic self-regulation. After all, a spontaneous market order dependent on external government regulation does not appear to be so spontaneous as Hayek would make it seem. As Petsoulas points out, „the need for state action indicates, however, that a society cannot rely on spontaneous forces to convince everyone that it is in their interest to preserve the market order." (Petsoulas 2013, 60) In Luhmann's case, there is no need for convincing social agents, because, from the system's perspective, that which is outside the system is indifferent. Deviant events only become interesting when they occur within the autopoietic unit. The negation that is an immune response is not given in response to an external environment; according to Luhmann, the immune component of an autopoietic social system functions in reaction to perturbations within „the circuit of communication itself." (Luhmann 1995, 403) Immunity is necessitated by the greater complexity of social communication. As recent hackings, viruses and data thefts show, relatively marginal deviant events can cascade into shocking scandals that threaten to disrupt connectivity. The function of the immune system is the protection of communicative circuits, as well as the guaranteeing of their continued proliferation.

In conclusion, I would reflect upon this admittedly brief comparison between two thinkers who are, in several respects, far distant from one another. In this article, I sought to show the theoretical importance of self-organization in Hayek and Luhmann's work, while also teasing out the posthumanist implications of this concept. What is common in Hayek and Luhmann is their adamant refusal to countenance voluntarist, anthropocentric political theories. Both of them reject goal-oriented philosophies of society that place undue emphasis on human motivations and subjective values, in favor of a social theory that decenters human intentionality. With Hayek,

we see society reimagined as the „cosmos of the market", a decentralized automated machinery driven by anonymous consumer desires that is independent of any individual or even group of individuals. With Luhmann, we see an even more radical deanthropomorphization of society. In his model, society is decomposed into various functional systems, all of which function according to their own codes, and program themselves in accordance with their own functions. As I see things, a possible future synthesis of these two important 20th century thinkers could be of relevance to debates relating to the status of the human and the social in contemporary posthuman social theory.

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Notes

[i] I use the term „social pareidolia" to broadly refer to any social theory that sees the deliberate intentions of certain social agents behind all social phenomena. A classical example of „social pareidolia" would be a conspiracy theory that seeks to explain the various patterns observed in society by referring to a hidden group of elite individuals purportedly responsible for all patterns in that society. It Hayek's contention that such explanations cannot account for social order. The patterns of society, including the laws that regulate social life, cannot be the products of rational design.

[ii] The „Great Society" is a term Hayek borrows from Adam Smith, and uses as shorthand to refer to a free market society.

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