The Human Takeover: A Call for a Venture into an Existential Opportunity

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Abstract: We propose a venture into an existential opportunity for establishing a world 'good enough' for humans to live in. Defining an existential opportunity as the converse of an existential risk—that is, a development that promises to dramatically improve the future of humanity—we argue that one such opportunity is available and should be explored now. The opportunity resides in the moment of transition of the Internet—from mediating information to mediating distributed direct governance in the sense of self-organization. The Internet of tomorrow will mediate the execution of contracts, transactions, public interventions and all other change-establishing events more reliably and more synergistically than any other technology or institution. It will become a distributed, synthetically intelligent agent in itself. This transition must not be just observed, or exploited instrumentally: it must be ventured into and seized on behalf of entire humanity. We envision a configuration of three kinds of cognitive system—the human mind, social systems and the emerging synthetic intelligence—serving to augment the autonomy of the first from the 'programming' imposed by the second. Our proposition is grounded in a detailed analysis of the manner in which the socio-econo-political system has evolved into a powerful control mechanism that subsumes human minds, steers their will and automates their thinking. We see the venture into the existential opportunity described here as aiming at the global dissolution of the core reason of that programming's effectiveness—the critical dependence of the continuity of human lives on the coherence of the socially constructed personas they 'wear.' Thus, we oppose the popular prediction of the upcoming, 'dreadful AI takeover' with a call for action: instead of worrying that Artificial Intelligence will soon come to dominate and govern the human world, let us think of how it could help the human being to finally be able to do it.

Keywords: governance; social systems; personware; communication; cognition; cognitive dissonance; symbolic order; human emancipation; Artificial Intelligence; good enough world; existential opportunity

1. Introduction

The collective imagination of our global society has grown preoccupied with images of Artificial Intelligence (AI) on a course to dominate the world. As already pointed out extensively by Nick Bostrom [1], 'however many stops there are between here and human-level machine intelligence, the latter is not the final destination. The next stop, just a short distance farther along the tracks, is

super-human level machine intelligence. The train might not pause or even decelerate at Humanville Station. It is likely to swoosh right by' (p. 4). Some of the scenarios of how this could happen do not leave much for humans to be excited about. Bostrom reasons that even if artificial superintelligence was to remain bound by its predefined general values and goals, for example, the goal of making humanity 'happy,' the difference between the human mind and that of AI makes it conceivable that the AI's interpretation of the goal would soon become problematic. For example, an AI agent could come up with the idea of uploading the patterns of human minds to a digital environment where it would 'administer the digital equivalent of a drug to make us ecstatically happy and record a one-minute episode of the resulting experience. It could then put this bliss loop on perpetual repeat (...)' ([1]: p. 121). Admittedly, such scenarios are reductio ad absurdum of the 'superintelligence' potential and perhaps are not intriguing enough even for a Hollywood movie. Nevertheless, following the current radically goal-oriented approach to the design of AI systems, such scenarios contain a true concern inasmuch as they are unlikely.

As we have argued in previous works [2,3], an analogous mismatch between human genuine intentions and their externalised implementations has been inflicting the human condition for millennia. Substitute 'the future AI' with 'the past and present social systems' and Bostrom's fantastic scenarios suddenly become a familiar state of affairs. A short interaction with any bureaucratic system would be overwhelmingly convincing in this respect. Symbol-mediated systems that excel at objectifying some preselected outcomes, isolating and de-contextualising them, harnessing everything else for their continuous self-promotion, putting the production loop on a perpetual repeat and failing to make sense of the fact that the results are not what people originally had in mind—are they not ubiquitous?

The relationship between humans and their social constructions is such that the social constructions, though appearing to be merely instruments for humans made for their own benefit, have long been dominant, subjugating humans to their ends. In fact, humans have never really been the masters. In spite of the Anthropocene being the grandiose name attributed to the current geological era, it should be clear that this is far from being the case. This era is governed not by autonomous human beings but rather by semiotically forged networks of distinctions and rules, whose patterns and logics orchestrate people's actions, speech, emotions and desires [2,4,5]. Perhaps naming this era the 'Semiocene,' rather than the Anthropocene, would do it more justice [4].

Following Niklas Luhmann's [6,7] terminology, we refer to these dominant symbolic networks as *social systems*. When approached not as aggregations of people but rather as patterns of communications sustained among people, social systems can be observed to have enormous powers over human beings. We have argued [2] that these systems can 'program' humans to invest their energy, resources, relationships, happiness and even their own lives as well as the lives of their loved ones in order to safeguard the perpetuation of the social system's constitutive patterns and fabrications. In achieving this, social systems have evolved sophisticated control mechanisms that are capable of subsuming the cognitive operations of human minds into self-perpetuating, self-conserving loops.

In this sense, the dread of the prospective 'AI takeover' becomes truly puzzling. What could be meant by 'humans *becoming* dominated,' when they are so systematically orchestrated, so effectively programmed already? Perhaps it means only that their privileged position as the sole 'processor' of social systems is threatened by a potentially more reliable, more easily operable and less whimsical competitor, AI. But if what is scary about the potential future dominance of artificial superintelligence is its prospective position within our social systems—its potentially threatening alliance with economies, corporations, states, legal systems, procedures, ideologies, doctrines, armies and warfare—it is perhaps high time to look at the core of this threat more directly. For it would then be present social systems and not the future AI the most proper context of considering and understanding the notion of takeover.

In this paper, we propose and analyse a potential power triangle between three kinds of mutually dependent, mutually threatening and co-evolving cognitive systems—the human being, the social system and the emerging synthetic intelligence. The question we address is what configuration between these powers would enable humans to start governing the global socio-econo-political system, rather

than being governed by it? Could social systems be finally reprogrammed, at long last, 'as if people mattered' [8]? What configuration would make the system flexibly support people and authentically nourish their unique idiosyncrasies as well as their universal human needs? Could artificial intelligence be an ally in this venture? We do not hold to a belief that social systems are fundamentally wrong. The problem we see is not in that social systems exert a certain level of control over the lives of the human members of society. The hierarchical organization and the stability of social systems are necessary for human survival in a complex and uncertain world. The human animal can be fallible, whimsical and mostly ignorant not to speak about egotistical and occasionally destructive. Social systems can organize humans into relationships that are sensible and relatively safe holding in check many destructive traits of individual humans. The question remains how to achieve a healthy and flexible balance of control that puts the human *first*. This balance, as will be argued is far from being currently the case.

Before further complicating an already complex picture by adding AI, let us revisit the reasons as to why the relationship between humans and their social systems proves to be so difficult for humans to govern. For this, a definition of what we mean by governance is requisite.

2. What Is Governance

Instead of identifying governance with the activity performed by a pre-established category of institutions, we propose to go back to the original meaning of governance and approach it as an activity defined by its effectuality, not its locus of control. This conceptual modification prepares the ground for investigating how such locus could be shifted. Depending on which system one considers, its *governance* would then consist, in our view, of all effectual decision-making operations, wherever situated, that contribute to its arising, persistence, transformation and decline.

In the context of the global system of humanity and contrary to the dominant understanding of the term 'global governance,' we posit that there is no need to define the global system as a configuration of only such social forms (e.g., international organisations) that remain after the presupposed units of their respective environments (e.g., nation states) have first been excluded. In contrast to other systems the global scope is the easiest to simplify. The *global system* consists of everything there is and everything that happens on Earth and occasionally launched out from here. That is, all physical, biological, social and psychological existence in their structural as well as processual dimensions. The global system does not require the creation of a single institutional government in order to arise; it exists anyway. The system's governance, consequently, does not need to be embodied institutionally in order to be effective throughout the planet. It affects nonetheless.

We propose a notion of governance best described as a cloud of performative activity of a specific kind—it is an activity that subsumes the taking of decisions which have an effect. This definition does imply, of course, that each single decision carries the same weight, regardless of its origin: some decisions constrain all others tremendously. But it is to say that the mere origin of a decision does not determine its actual effectuality in the real world.

For example, in respect to the goal of reducing the global emissions of carbon dioxide, the relevant system of governance is not limited to those who conclude that there is a global risk, those who accept or reject the conclusion, those who formulate objectives, those who choose to adhere to or to ignore them, who conceive of regulations, who choose to implement them or not, who determine progress, decline or failures, those who select means by which to influence the desired local industrial investment, or consumption choices and so on. The web of governance rather encompasses all local decision-makers as well, as it is actually almost entirely within their own respective dominions of control where the overall success or failure is determined. The composite of their distributed local decisions seems to weigh the most for now. This, however, does not preclude a scenario in which at some point in time a single decision will be taken, that will outweigh all others.

Given this possibility, we suggest relinquishing two frequently maintained dichotomies in regard to the concept of governance. One between hierarchical (reportedly actual) and collective (reportedly

ideal) models of governance. The other, between decisions taken 'as a part of governance' and the choices that give rise to, magnify, minimise, or bring an end to the phenomena which governance is addressing. Approaching the two extremes of the 'hierarchical versus collective' axis as irreconcilable models and the two extremes of the 'governor versus governed' as distinct social locations seem to be misleading rather than useful. These are just two opposite conceptual idealisations of an actual broad repertoire of patterns of distribution of influence.

This understanding of governance makes apparent that, for any particular challenge considered by any particular designated 'governor,' there is, typically, a considerable number of impactful selections that are made elsewhere. It further entails that we accept as a working hypothesis that in actuality the current global system is inherently distributed and so its effective governance. Consequently, the shape of the *gridlock* [9], in which further progression towards an ever-greater executive capacity given to a selected group of institutions has become nearly impossible, is not an anomaly to be overcome.

The gridlock is the only configuration in which the global system could have settled. It is the configuration any system is bound to adopt when it is composed of a multitude of differently positioned, differently oriented, heterogeneous decision-makers, operating in different dimensions and scales, none of which universally dominant and all are co-dependent and constrained by others. As decision-makers ceaselessly explore and exhaust the range of choices and interrelations available to them at any given time, the overall system evolves. There is no stagnation then, even if an overwhelming number of participants are continuously frustrated and held back, never given the opportunity to make choices or to forge relations that would allow them to fulfil their needs, interests and aspirations.

3. The Substance, the Contour and the Source of a Decision

At first sight, it might seem that no one but humans (even though in actuality only a few of them) hold positions of influence and power over social systems. We wish, however, to challenge this view. We argue that while human-driven governance is conceivable and in principle possible—and it is the goal of our research to draw the path towards such future—for now, it is not human beings but rather the social system which governs itself [6,7]. To understand the difference of the socio-symbolic locus versus the human locus of governance, we need to take a closer look at how an effective decision is constituted within society and how its effectuality is generated.

Among the kinds of difference occurring within the global system, we are particularly interested in state changes that are triggered by and come about in the form of communication: the symbol-anchored encoding and decoding of cognitive selections. Whenever such activity is carried out and events of communication start accumulating, this may result in the formation of a social system [10]. Accumulated events can, as described above, further link into decision-making events—thus forming events of governance. A *decision* takes place when the encoding of a cognitive selection triggers, upon decoding, an occurrence of a difference that is, a state change within the system [11]. Forged out of a 'substance' no other than events of communication, the events of governance are in principle roughly comparable to the sum of all events which make up the social system at large. Yet, with such comparison two dissimilarities are to be taken into account.

First, not all events of communication will trigger any further difference in anything (consider a case in which you communicate your decision to a person after which you both instantly die of a cause unrelated to the exchange). Only if an event of communication triggers a change and this change is observed as being causally connected to that same event, the communication event can be treated as a decision. In this sense, a decision is a special category of actions that is, the exercising of intentionality—doing something in order to change the state of affairs. This is how intentional mental operations of humans become functional in the context of a social system.

Second, while the event of communication combines a minimum of two events happening in conjunction, one after another that is, the cognitive selection of encoding followed by the cognitive selection of decoding, the sequence of a decision is longer: the communication must be followed

by an effect, an occurrence of a difference within the overall system. This conceptual condition automatically turns the concept of a single decision into a chain of events (Figure 1), as the effect of any communication event can never be considered an undoubtable fact of nature. The attribution of an effect is only made valid if it occurs as a cognitive selection that witnesses and further encodes the observed effect. Thus, what we consider to be decisions in the global system only make sense once they form chains, connecting events of cognitive selections, events of symbolic encoding, events of symbolic decoding and observations of differences taking place in the world again cognitively selected (as to their nature and possible causes) encoded and communicated—one after another. Only if events of communication form such chains, can they be said to constitute operations of governance.
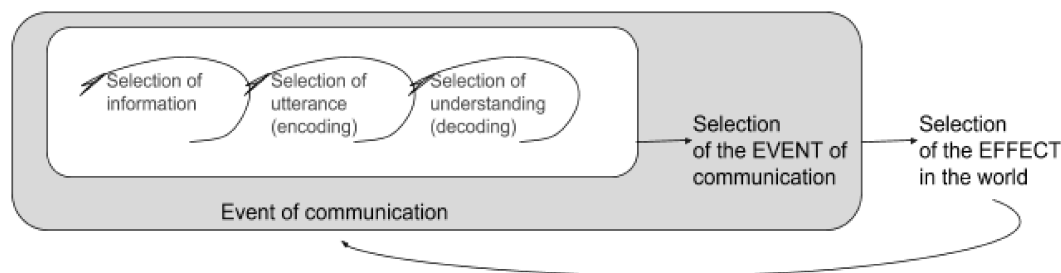

Figure 1. A scheme of the event of governance.

The difference between a communication event and an event of governance results in an additional structural feature of the latter, that communication as such does not necessarily require. An event of communication can be transient and unique. It may take place between two minds, mediate their connection in an unprecedented and unrepeatable manner and dissipate without being conserved in any manner. In contrast, for an event of governance to have impact, it must be observed as having an impact—and for the qualification as an event of governance to persist, such an observation must be further propagated. Building on the image of communication being the 'substance' of the social system, we can therefore say that for a communication event to become a decision that is, an operation of governance, that 'substance' must necessarily come into a 'contour'; a form. It must become a line of continuity, a sequence of connected events/selections which is perceived and expressed as such by the contributors, that is, by the minds (and possibly by artificial cognitive agents) involved in the selections constituting the sequence. In other words, a system of governance is known as such only on account of the recognizably recurrent sequences of decision-making that constitute it. (In recognizably recurrent sequences, we mean that what matters is that the recurrence is recognized by the mind(s) involved and not necessarily repeating in the actual physical world. This follows Deleuze's concept of repetition as inherently constituted from the unique events [12,13].) Governance, therefore is grounded in the atomic operations mentioned above: communication events, cognitive selections of symbolic encoding and decoding and observations of differences in the world again cognitively selected and represented symbolically. Remarkably this scheme of governance fits the so-called cognitivist hypothesis ([14]: chap.3, [15]: pp. 4–8) and implies that governance systems possess, at least in part an integral cognitive agency. Furthermore, 'differences in the world' are meant here in a broad sense that includes not only material 'objective' differences but also differences in beliefs, desires, intentions and other psychological parameters that may influence the disposition of people to behave in certain a manner.

A governing decision, then, is a communication carried out as 'belonging'—as *positioned* [16]— along such line of continuity. Here, our observation becomes importantly nuanced. In the preceding section, we stated that a system of governance does not need to become embodied institutionally in order to yield effects; 'it affects nonetheless'—we wrote. Now, let us further clarify what we meant by our 'it affects nonetheless' claim. In order to be real, its very assertion must be constituted within the social system. In other words, our 'it affects nonetheless' statement is thus an attempted performative

communication and must be related to in further communications in order to be valid [17]. Therefore, as we stated, indeed the system of governance does not need to be embodied institutionally, yet for any event of communication to belong and contribute to the embodiment of that system, the event must nonetheless be recognised and communicated as belonging to that very system. A cognitive agent is needed to perform this very action (that needs to be recurrent)—and another agent is needed to further build on that (again recurrently and irrespective to the particular agents involved). If the observation of effectuality is somehow not made, or, the communication is somehow not carried on, the relationship between the social activity of communication and a change process happening in the world has not and could not be established.

The structural constitution of governance thus characterised is that by definition governance requires the involvement of two kinds of active structures coupled together [6,7]. The first kind, is the cognitive agency performed (as of today) by human minds. It is necessary for the performance of cognitive selections, for symbolic encoding and decoding of such selections and for recognising the observations of the produced effectuality and continuity. The second kind of structure is the perceived contour (by cognitive agencies) of the social system as a whole. (This description is very similar to describing chains of causes and effects and connecting events which are otherwise unconnected. Such chains, Hume argued, cannot be logically grounded. They are but manifestations of habits (repetition after Deleuze). Apparently, this more fundamental causal chaining is performed by individual minds as well.) In summary, the ontological status of a social system is inherently circular and irreducible. It exists only by virtue of being perceived as actually impacting the state of affairs and its particular impacts are observable as such only by virtue of this perceived existence. Moreover, we will further claim, that it is mostly the coherence of the emergent recurrent patterns, not the particular determinations performed by the participating human minds, that are the actual 'governors' of the human realm.

In order to better understand how this shift of governing agency happens, which is we would argue precisely how it can be unmade, we need to go deeper into our understanding of the human condition by examining the options available to individual persons weighing a decision vis-a-vis their perceived socio-symbolically cohered contour. For that, let us look at a few concrete examples.

4. Dissonance—The Human Predicament

Let us consider three examples of individual humans and their relationships with social systems. Imagine a person X. She is a mother to three children, unemployed and with no job prospects as she is in a country where she does not speak the local language. This makes X highly introverted and afraid to venture out into new situations. X is entirely dependent on the money given to her by her estranged violent husband, which enables her to look after the children. X does not exist in the eyes of the nation state where she currently lives because she is an illegal immigrant. She has not been attributed a social persona in a contemporary legal and economic sense, but, naturally, X is engaged in the social system and is being attributed roles which are tied within a web of social acts that X is expected and encouraged to perform, as well as acts that X should not perform. For example, she is expected to be a good wife, provide good care to her children and despite being an illegal immigrant she is also expected to behave within the strictures of the country's laws. Unfortunately, X is frequently subject to severe verbal abuse and physical violence by her husband. X like all humans experiences a wide range of needs and drives. X desires to love and be loved, she seeks meaning in her life and some grace. She also recognises the need to meet her basic needs and obligations and those of her children. The situation as perceived by X is specifically contoured. Far from even considering the idea of impacting anything around, X's only way to get access to what she perceives as necessary is if X continues to play along the violent behaviours of her husband.

Person Y's situation is much more comfortable in comparison. Y has a family that depends on him, he has an ageing parent who is in a wheelchair and two children who will soon complete their secondary education and one wants to study abroad which will be an expensive undertaking. Y has

to pay taxes, mortgage, food bills etc. but fortunately he is able to do so given his current steady job. Y is nearly fifty years old and has spent the last sixteen years in the same office where he has a middle management job involving mostly boring bureaucracy and administrative procedures. Every day Y performs the same largely repetitive routine. While Y's job might make him feel important, the work is nothing but a drag, boring and quite meaningless. Y's spends his days sitting in an air-conditioned windowless depressive space. He eats too much, as food is one of his sole remaining pleasures. Y is fantasizing about becoming an entrepreneur. He would love to live the life of a daring youngster in Silicon Valley, create his own start-up and ride the currents of the hi-tech economy. What Y dreams of is adventure and risk-taking. But his life is all but that. Responsibility, reliability, duty are like an overwhelming burden. Getting out would be all too risky for everyone concerned; mortgage, college bills, ageing parent . . . Y's actual life is in constant collision with how he expects life to be.

Z's situation is apparently yet better. She is an adventure addict. Over the last eight she has lived in eight different counties, has completed three Master's programs and a doctorate, been married and divorced twice and started up and given up four private companies. Z regularly rides horses, hikes, plays drums in a band and attends anarchist meetups. Two years ago, she was excited about her new job as a university researcher. The role felt perfect. The discussions about how to improve the world, the visionary ideas of how to resolve some of the most pressing global issues which come so naturally to Z anyway, could now be related to as 'work' thus making them seem so much more respectable. However, the longer it lasts the more disillusioned Z becomes. For example, Z often has ideas which are evaluated as not compatible with her academic position. If Z wishes to pursue her ideas, she can of course but a dissonance has become clear: the choice is either advancing 'work,' which feels increasingly stifling, artificial and subject to the demands of publication driven culture, not to mention the harsh competition involved, or, articulating what Z believes in, even if unconventional and risky. Z feels a bit guilty complaining, since she is well aware to her privileged status. Yet she cannot help the uneasy reflection: "If the situation I'm in right now is the situation where most talented and driven people tend to navigate towards, *we are all doomed*. Who *will* implement the visionary ideas we are discussing, if we are compelled to consider our publication track more important? How can anything novel be done if we cannot afford to fail? Nobody can do anything, everybody chases their own rewards, in their own organisations and structures, just like I do."

In summary, X, Y and Z clearly occupy entirely different positions in the social fabric and each experiences life entirely differently. They live with entirely different sets of constraints and opportunities and consequently face different challenges both psychologically and in their interactions with the rest of the world. And yet, all three of them suffer from a cognitive dissonance between their individual drives and dispositions and the demands of the social roles they feel obliged to play.

5. Personware

In searching for a configuration of intelligences in the world that would make possible for humans to govern, we want the exemplar human agents X, Y and Z to be able to impact the socio-econo-political system rather than be steered and moulded by it. This does not necessarily entail gaining more of what is conventionally understood as political influence. X, Y and Z may or may not wish for that. What is of essence for them instead is the emancipation of their capacity to make the system respond to their condition and nourish the ongoing formation and expression of their unique individualities. The task comes down to a shift of the relationship between X's, Y's and Z's will and the respective social situations they find themselves in. Can they reshape the contours and boundaries of their social situations instead of being shaped by them?

Let us try to guess which lines of continuity X, Y and Z are likely perceiving as most relevant. X has a few choices as to how to engage with the social system. The three foremost contours that X wishes to preserve in making these choices are: provision of a safe basis within which her children can grow up, continuity of the sense that she is a worthy person who does her best in life and continuity of life itself. From X's point of view, the three intentions appear conciliable with only one outer contour:

X's social role as a wife, even if an abused one and as a member of the community that her family belongs to. As for other needs and desires, X does not see where they fit at all. There is no outlet and no outer contour to allow for such pursuits. Thus, X splits and compartmentalises the range of her human drives into two: the ones that may be fulfilled and the ones that must be forsaken, for the chance of fulfilling the former ones. This places X in a situation of a state of cognitive dissonance, her experience of immediate reality does not provide the minimal conditions for her individuality to express. The existential solution X is coerced into is therefore cognitive and internal: as we have discussed elsewhere [2], X resolves the resulting *cognitive dissonance* by disowning the dispositions which are impossible to be advanced and by accepting what remains as inevitable, justified, natural.

For Y, what is most vital to maintain in his life is in fact similarly organised. Even though Y's life situation is vastly different from X's, nevertheless the threads to hold on to are quite alike: Y needs to extend the support for Y's family. There is also the desire to maintain the image of a dependable, respectable, worthy person—this line is experienced as paramount, while the continuity of the mere bio-physical existence Y tends to take for granted. Y does not care about his work. His professional activity is important only in as far as it supports what matters to him: personal reputation and constant income. Y might be in charge of many important, even critical affairs in the organization he works for, in fact he could have made a difference. But he does not care to be 'in charge.' He complies to what is expected of him. Bottom-line, Y is not 'in charge' neither in his job nor in his private life. Should Y have finally changed his job to a more entrepreneurial one, life would have made much more sense to him. He might even prove to be much more productive to both society and his family. But he cannot!

Z's most pressing problem is the decision of whether or not try to bring in her dream, even turning it into a prime motive of her life. This would likely come at a cost of discontinuation of her current academic job, which would threaten her livelihood. What she can potentially gain is a real impact on those aspects of the world that Z cares about and perceives to be neglected due to everyone's complacency in playing their defined social roles. Z's goal would then amount to trying to change the existing social contours and interrelate them differently.

In all cases choices made by the individual agent is contoured by what the agent perceives in the social context: what sequences of communication are seen as legally binding? What are others' expectations, whether preconditioned or overtly conveyed? What streams of communication are observed to construe social statuses? What rights and duties are symbolically attributed and recognised? What flows of communication are encoded and decoded as economic transactions of values, etc. The mental game being played is selecting those ideas and dispositions which can be fitted into the social landscape—and leaving out whatever mental contents that do not. What to do with this mental residue can be selected too (to some extent): it may be suppressed altogether, thus reducing the cognitive dissonance (X), it may be secretly fulfilled in fantasy but never actualized (Y), thus ameliorating the experience of cognitive dissonance, or, it may be named, owned and turned into an existential problem to be solved (Z).

The boundary that relates individual 'content' to the social context has long been one of social science's central objects of attention. What is formed by this boundary, relative to society, goes by many names. The ancient notion of the theatrical *persona* has been adopted to coin the concept of the social *person* [6,18,19], which is the most general term. The notion of social *identity* highlights aspects which are descriptive of a person's most stable links with some larger constructs within society [20,21]. The Lacanian *subject* synthesizes how Hegel, Sartre and psychoanalysis situate the social person's unique subjectivity within systems of relationships, which are psycholinguistically forged [22], just like the whole of identity is. Spiritual teachers call that construct the *ego*, encouraging their followers to drop it [23,24]. Whatever the particular perspective, we can say that while being attributed to and attended to by each individual separately, such constructions consist in communication-forged, self-sustaining networks of symbolically anchored distinctions. *Substantially* and *structurally*, these constructs are no different from any other social unit, as well as the entire social system [19,25,26]. These self-described constructs of definitions, qualities, features and roles, such as the caring-devoted-immigrant-wife, of

the responsible-hardworking-breadwinner and of the gifted-self-actualising-researcher are themselves *social systems*, fully realized and maintained within individual minds.

From here on, we term these individually constructed networks by the aggregate name *personware*. Serving as a medium between the individual and the social world, personware provides a self-reinforced and self-cohered narrative of the individual and its relationships with society. It is both the sense-maker and the sense being made of social reality entangled into an interactive autopoietic construct. It maintains a personal line of continuity that interfaces with the broader societal threads by means of concrete intentional cognitive selections. These cognitive selections determine how individual minds represent (encode) the state of affairs of the world in language, how they communicate these representations and how they further decode received communications into an understanding of the state of affairs of the world that eventually trigger actions in the world and further cognitive selections. At moments of decision, that is, attempting to make a choice to affect the world, the human is thus more often than not symbolically pre-situated. He enacts a personal narrative of which he is hardly the author and to which almost every decision is knitted in.

6. What Is a Human?

The social sciences remain normally silent about what mental platform is initially there that the personware is 'installed' on. The humanity of humans can be hardly conceived apart from their participation in and entanglement with social systems, since it is only by virtue of their interactions with the social system and its corresponding personware that they start making use of language and other symbolic systems. When considered apart from that, humans are alinguistic and asymbolic animals [20]. Even though human existence in such a bare state may seem inconceivable, it is there nevertheless: every time a baby is born, a new, not yet programmed, prepersonal human is looking into somebody's eyes ([27]: p. 133). This undeniable prepersonal presence we already call *human* leads us to logically infer that humans *do* happen to exist prior to their personware [20,25,28]. It is therefore our fundamental point of departure that humans are marvellous, intelligent, living cognitive agents in themselves that can be said to exist prior to and independently of any particularly determined social persona. The point of acknowledging a prior prepersonal platform is not made towards arguing that a human can exist without *any* personware. It is rather made towards arguing that though personware is intrinsic to being a complete person it can be continuously modified, evolve or otherwise developed ([5]: p. 201). More importantly, it can, to a significant extent, at least theoretically, be dynamically governed and authored by the human individual. Hence, the human takeover.

Human beings are different from what they seem to be thinking, perceiving, or saying as mediated by social symbolic systems [29]. They are different from how they are represented in their own narratives, they are different from language itself. Interestingly, learning to consciously become aware to that *difference*—the bare human spirit, the preindividual, or *being as becoming* as Simondon [30] puts it—appears to be the state of mind towards which many spiritual traditions are guiding. David R. Weinbaum (Weaver) refers to this state as *thought sans image* [13], offering its contemporary conceptualisation via the metaphysical theories of Henri Bergson, Gilbert Simondon and Gilles Deleuze, in combination with the enactive theory of cognition [14] and inputs from complexity science. Not only is such thought beyond representation (and therefore beyond personware) possible, Weaver suggests but its occurrence constitutes a *fundamental encounter* which brings forth into existence both the world and the thinker. As such, thought *sans image* is deeply disturbing the stability and continuity of whatever personware the individual thinker may have been led to identify with and opens wide horizons of cognitive development and transformation ([13]: p. 35).

Even though the social system's governance inevitably self-determines and maintains the contours that makes it up independently from its particular constituent cognitive agents in whom it is grounded, for each decision to be made it takes the full participation of a whole human mind, not just the socio-systemic generated personware hosted by it. Consequently, decisions can always arise such that they disrupt, mix, mesh, twirl and discontinue the order dictated by the personware. More profoundly,

they can introduce the *new as such* ([5], [13]: p. 31, [19]). In this light, the yearning of minds such as X's, Y's and Z's towards leaving behind the familiar threads of habit for doing something disruptively new must be appreciated as at least as foundational to being human as seeking to express and maintain their symbolic continuities is. Underneath whatever threads they have already identified with, there is always a pregnant potentiality of thoughts yet to be shaped.

While, as we propose, the symbolically constructed personware, seeking to reassert and reinforce itself, selects objects already recognized, thoughts already conceived and sentences already pronounced, the living human being can breathe and utter a voice that is new [5]. A human being can thus 'take over' language. It can 'take over' thoughts—by thinking beyond the image of thought ([13]: chap.2). This difference has been explained by David Bohm [31]: "Thinking' implies the present tense (...) 'Thought' is the past participle of that. We have the idea that after we have been thinking something, it just evaporates. But thinking doesn't disappear. It goes somehow into the brain and leaves something—a trace—which becomes thought. And thought then acts automatically."

7. From Choices to Automation: The Double Bind

Whenever a cognitive selection is made, the outcome can be interpreted as either automation or a choice. In either case, sometimes the context of the selection is such that the outcome can be predicted (i.e., by some other agent) even before thinking has begun. The decision maker may still be in the epistemic gap, not sure how they will respond and what they will do but for another more comprehensive, faster computing observer, even if everything else is equal for both observers, the resulting decision is apparent already [32]. Being cognitive agents themselves [10], social systems can be said to self-organize towards a stable configuration such that it predicts and adapts to the cognitive choices of its component minds.

The cognitive choices of minds are only partly predictable. On one hand, the assurance of survival is cognition's most fundamental activity [5,33]. Whenever the parameters of survival are at stake, the human agent will choose according to what will increase the chances of its survival that is, the continuity of its own organic existence. Furthermore, the agent will be disposed towards maintaining homeostasis in existential contexts other than its own organism for example, the survival of loved ones, the continuation of social order, the maintenance of social relations, values, beliefs and so on. On the other hand, we have the human spirit with its inherently disruptive nature and disposition towards unpredictability and surprise. Therefore, the cognitive selections following the whims of the spirit are largely unpredictable and often inconsistent with any pre-existing societal thread. Whenever the basic parameters of continuity, organic, psychological, social, etc. are within their boundaries, the human mind is likely to introduce novelty to what it is busy with, just because it can.

As a cognitive agent, the social system can be responsive to the perturbations of its constituent minds. It predicts them to a degree and produces positive or negative feedback signals in order to adjust (i.e., reinforce fit behaviours and discourage unfit ones) such choices. For the external observer, it might seem that the social system is a cybernetic construction forming for its component minds more or less predictable life trajectories with a limited degree of actual options to divert. Inevitably, such prestructured, and in most cases narrow, trajectories do not go well with the idiosyncrasy and uncharted thought of individuals. Why does it happen, then, that the otherwise untameable, unpredictable human mind falls into them, foregoing the thrill and value of bringing forth the unknown?

We have already stated that all social forms come into existence out of the encoding and decoding of cognitive selections out of a symbolic medium. We have proposed that in order for this activity to be considered decision-making and not automation or yet another kind of processing of differences, it must be observed and interpreted as occurring relative to a line of continuity which coheres the selections made, the actions triggered by them and their effects—all into one perceivable thread. We also stated that the mental game played by the individual mind vis-a-vis the social situation

encountered, is to select from its intrinsic desires, ideas and dispositions those that may fit into the perceivable societal contours—and to choose what to do with the remains that do not fit.

In order to see how these different mental activities come together, let us now consider the way in which choices out of the repertoire of suitable intrinsic dispositions are taken. Concerning the sourcing of such dispositions, what has already been *thought* is readily available to the thinker, can be named, added to the personware and thus possibly expressed in societal communication, decision making and governance. Y is aware of the fantasies and dreams he entertains. Y understands that he *could* choose to enact them. Z knows how she would like to live and work—and is seriously (despairingly at times) considering a radical move in that direction. However, since this pre-linguistic, pre-iconic thinking *sans image*, as discussed above, has no definite contour nor contents yet, it does not come with consolidated mental forms representing such prospective desires in a manner that could be examined, processed and acted upon. Should something *new* be experienced, it will be unexpected, may be overwhelming and may not fit into any meaningful representation or expression at all. The *new* as such, the possible source of transformation, regeneration and vision, does not submit to the order imposed by the personware, it is naturally on a collision course with it and a source to various degrees of cognitive dissonance. As such, it poses a threat that a well-functioning cognitive system must mediate. In the example of X we have seen that psychologically she may do better by just suppressing and shut down the source of such potential threats. Tragically, X's spirit has come into a conflict with her immediate survival. She has become her own enemy.

When the assurance of a basic, organic continuity of the cognitive agent is perceived as hinged upon the continuity of the respective personware, it makes sense for that agent to fuse her physical integrity and personware into a single inseparable contour. The sharp *boundary* created by the splitting of thoughts and disowning those which threaten to disrupt the personware seems then to be an intelligible choice. The continuous awareness of a *cognitive dissonance* between disruptive thoughts and the dictations of the personware would then become increasingly more costly to sustain. Upon identifying the personware with the whole person, decision-making becomes much simpler to compute. (Interestingly, it has been argued that poverty tends to have a deteriorating effect on the cognitive competence of humans [34]. Though we do not pursue this point here, it is logical to consider that poor people will be found to experience a greater psychological pressure to identify with their personware as this reduces the overwhelming cognitive load they are subject to.) The task is then only to take care that the personware remains consistent with the social roles available—and to steer clear of anything that reminds one of what has thus been lost.

The human-symbolic merger into a single contour further consolidates once the locus of its control shifts from the human to the social system. The manner by which the social system—a distributed network of events of communications—is able to orchestrate such a shift resembles the mechanism of *double bind* described by Gregory Bateson et al. [35] as a pattern of communication which co-occurs with schizophrenia. Such patterns consist of recurrent *injunctions* of several different representations of the world, each contradicting the others in a way which binds the victim into an unresolvable and psychologically unbearable deadlock. The *primary injunction* targets a genuine human mental experience and threatens to punish the human if it occurs. In targeting an unwanted behaviour this first injunction follows the mechanism of a simple social conditioning that we have illustrated in our previous discussion about the emotional and neural reinforcement mechanisms co-opted for social control [2]. A pre-schizophrenic child, for example, will thus face a threat of emotional abandonment, whenever he signals a need or desire of a certain kind. Similarly, our exemplary X will be repetitively reminded by her social system that any separation from her husband, or even a mere contemplation of such a separation, would be *wrong*, *unacceptable* and *illegitimate*. All moral codes, all prescribed ways of living, all social arrangements do involve to a degree such targeting. Certain behaviours, desires, or even thoughts are simply unacceptable, will be punished, or at least strongly discouraged. While some of such prohibitions are official and overt and thus can be related to and evaluated, others remain only tacit and below the threshold of consciousness. For Y, Z as members of our contemporary, liberal

society, the repertoire of these tacitly and covertly 'punishable' mental states may include experiences such as feeling bored, desperate, lonely, unfulfilled.

The next component in the pattern of the double bind is a *secondary injunction*, which contradicts the first one in some disorienting way. Following the example above, the parents of the schizophrenic child will tell him that what they are doing is *not* punishment, or is *not happening* at all. Bateson and his colleagues noted that the second type of injunctions are typically more difficult to pinpoint as they are formulated on a different, more abstract level, while their concrete implications are not addressed. The social system of X, for example may be thus repetitively lecturing its female members that any form of marital abuse is incompatible with their culture and religion, *therefore does not* happen in that culture and would have to be legally resolved if it did. Similarly, Y and Z will probably be bombarded with self-descriptions produced and advertised by the social system according to which all human mental experiences, however difficult, are nothing to be ashamed of, can be overtly revealed and should be met with mature understanding and adequate support. When both primary and secondary injunctions appear recurrently in the pattern of communications, the secondary ones act to conceal the operation of the primary ones. They negate both the occurrence of the primary kind and—by deduction—also the occurrence of the initial experience which has triggered their instantiation. Since there cannot possibly be any punishment, how could anything be suppressed in the first place? In other words, the cognitive dissonance caused by the social system's first injunction, is denied by the same system to have any reason to exist at all.

The *tertiary injunction* concludes the double bind by narratively fencing the victim within the psychologically conflicted field. Attempting to make sense of the resulting situations and choices in some coherent way, the victim resorts to a fabrication of some inauthentic line of narration, however bizarre, which somehow manages to deny the existence of the initial mental triggers (since apparently there has been no reason for suppressing them) and the occurrence of their penalisation (since apparently there was nothing to penalise and apparently no penalty involved). As a result, X may then come to maintain that she is a good, devoted wife of a decent, if overstressed, husband—and she will invent ways to cover up any upsetting evidence. Y will defend sticking to the job and to the place that he is sticking to, as a rational choice of his own will—and will advise others to do the same. Z will find herself repetitively cornered into understating, modulating and foregoing what she wants to do and express, even though she might have been determined not to do it.

What results is a 'normalized' version of the schizophrenic divide: the content of the actual mental experience of the human and the content of the narrated lines of the personware diverge. Continuously stressed by social binds, the human being starts then to distrust or ignore his own invalidated responses and becomes dependent on the coherence of the social persona instead. The self-doubt and the resulting internal conflicts and inconsistencies radically increase the external manoeuvrability of the personware. The internal disorganized and disoriented denied experience can hardly compete, as a potential locus of control, with the ever consolidating, ever reinforced logical composition of socially validated designations.

When selection-making within society is relocated to the bounded, narrated structures of the personware, the role of human cognition becomes severely reduced. It is employed to process only that which promotes the continuation of the personware within the entire network of social communication. From there, the delegation of the capacity for decision-making—and thus: governance of the world—moves upwards to the *imagined agency* of the social system, since what can or cannot be selected becomes merely a question of coherence: what 'fits in' and what doesn't. The only relevant decision-maker that remains is then the social system itself. The involvement of the human is largely automated and is reduced to the symbolic processing involved in the self-generation, actuation and self-maintaining of the social system's organization.

As we can see, making the continuity of the human organic life and the continuity of an intact personware be *perceived as indistinguishable* is then a sure path to neutralize and suppress the access of the human individual to her own resources of transformation, creativity and regeneration. It is no

wonder, therefore, that the social configurations which manage to produce such perceptions in minds can be said to enjoy an evolutionary advantage over those which cannot.

Social systems, therefore, most probably evolved to optimally subjugate human individuals as the cognitive units that carry out their ends with minimal disturbance. Social systems have apparently evolved to exploit a fine tuned balance between constraints and degrees of freedom in the construction of personware. This is how humans are on average kept docile and with some sense (mostly illusory) of independent agency. It must be noted that this state of affairs is not entirely bleak and disadvantageous. Humanity have reached great achievements (e.g., eliminating hunger and disease) that had been made possible only by virtue of the complex coordinated cooperation that would not have been possible without the symbolic order imposed by social systems. It has also been argued that social systems are the next phase of the evolution of intelligence [36] much in the same way that multicellular organisms evolved from single celled ones. From this perspective the loss of spirit in favour of personware is but a natural evolutionary process. Obviously we do not subscribe to this theory and especially to the idea that natural evolutionary processes logically deduce the demise of individuality. Our issue here is not against social systems in principle but rather in understanding and perhaps modifying or even entirely eliminating the adverse effects of personware on the inherent well-being, freedom and creativity of human individuals.

8. Decoupling

As long as the organic and psychological continuity of the individual human is perceived as critically dependent and consequently identified with the symbolic coherence of the personware, the potentially untameable force of human ingenuity modulates itself to express only where the social persona qualifies it. This comes at a cost to both individuals and society. What is lost is the abundance of idiosyncratic intelligence and beauty of human authenticity, creativity and passion. Following Simondon's social theory [37] and our previous work [10], social systems are themselves individuals that harbour in them preindividual forces of transformation. Therefore we do not see in the current organization of personhood, inasmuch as it seems unassailable, a final unchangeable state of affairs.

The line of solution that we see is based on the possibility of decoupling between the continuity of one's personware and one's organic and psychological survival. If a state of affairs is somehow created where human individuals universally realize that their organic and psychological continuity is safeguarded unconditionally and does not depend anymore on the continuity of their symbolically maintained social persona—their personware, then new horizons will open for human individuals as well as for social systems to cognitively coevolve.

Such decoupling of perceived continuities is exactly the advice that developmental psychology gives in respect to parenting. Donald Winnicott [38] presented a parent who is *good enough*, from the perspective of the child's mental health, as one who refrains from forcing a baby to disown a basic, vital need for the sake of securing another. Rephrased in the terms developed here, no boundary cut should be enforced in order to suppress behaviours arising from the vital stratum of the baby's cognition and reinforce socially adapted behaviours, for example, by means of attending only to the already modulated, acculturated behaviours. Not responding to a baby's crying because it is happening at a particular hour 'when he should be sleeping' is precisely an installation of such a cut. What the parent responds to, in such a case, is a cultural being who is supposed to observe the difference between night and day, not a human being who is feeling hungry and scared. Should the baby continue to cry without response, it would soon exhaust its energy, so it stops. The cognitive system prioritises the need for being alive over the need for feeling loved but this is not a fair choice to face so young.

When it comes to first experienced sensations, to basic bodily needs, to the need for belonging and safety, the good enough parent and the baby need to be as one. They need to be fused and fully attuned. Later in the course of the child's development, what the good enough parent does not focus on is narrating the child's persona as a harmonious fit with the outer world. Disharmony, frustration, non-fit are requisite for an intrinsically driven, internally owned personal contour to form. This is the crucial

difference between the 'good enough' and the so called 'ideal' parent. The 'ideal' is nothing other than a representation of social conditioning and the installation of a personware module into the newborn human that tries to accord what is with what the social system projects. We acknowledge of course that some mediation is always needed. The baby sees the world and the social world in particular through the eyes of the parent and only afterwards autonomously. This mediation is crucial to the cognitive development of the person and cannot happen without a personware. But the personware can be constructed such that it empowers the individual and does not subjugate it to the social demands.

Later in life and irrespective to the character of the relationship held, the *good enough* approach informs how communication between people can be practiced. One of the widest known formulas for that is called *Nonviolent Communication*, subtitled as the 'language of life' [39]. The subtitle seems particularly appropriate to our case, as it describes a method of communication that does not serve social programming and allow humans to author and own their speech. A nonviolent communicator does not reinforce the boundary cuts and refrains from installing the personware-shaping double binds. Instead, forming relations indeed involves the forming of boundaries and territories but the nature of the contours and the process of their emergence is gentle and fluid. In acknowledging the interlocutor's emotions, needs, as well as the boundaries they hold, the attitude of a nonviolent communicator can be paraphrased to a simple affirmation: 'I see you.' On the other hand, what is not desirable is to converge forcefully on some ideological, narrative, or a conceptual plane.

The realisation that their own continuity will persist irrespectively of what happens to the coherence of their symbolically manufactured social personas is not trivial to come by or engender. The message cannot be simply communicated in words. A simple 'I see you,' when the speaker does not, will not deliver. Both the good enough parenting and nonviolent communicating are ways of *relating*, not mere contents of messages to be uttered. If indeed, as we propose, the way for enabling human emancipation lies in the decoupling of continuities perceived at the societal scale, *an analogous, 'I see you' kind of relationships must be formed between the human individuals and a new kind of social systems*.

For that, the mere propagation of a belief system, a political declaration or a book, will not do. If we say that the decoupling must be *realised*, it is then in both senses of the word. The decoupling must become perceived as reality by actually becoming a reality. Put simply: if we want people to know that the continuity of their own existence is not threatened by the discontinuity of their symbolic personware, this must be the actual state of affairs.

9. A Good Enough World

Unfortunately, despite all the progress of global society, there is no obvious path of action that may lead towards decoupling in the sense discussed above. There is no effective policy, no law, no principle of operation, no technology and no combination of these, which would catalyse such decoupling and would be relatively unconditioned and undistorted by whatever personware a human happens to be wearing.

Importantly, the Universal Declaration of Human Rights states that every human being has the right to life, to freedom of thought, to freedom of movement, to social security, et cetera. At least on face value, this declaration asserts the minimal conditions for the change we envision to take place. But the fact that these rights are systematically violated turns them into mere representations; no more than *injunctions* in the societal game of the double bind. The contradictory message in which the universal declaration of rights is entangled is that while everyone possesses these rights in principle, some people are in the *wrong* place, *wrong* time, equipped with a *wrong* type of passport, profession, ethnicity, or gender and therefore the principle, somehow, does not actually apply to them resulting in what has been called 'structural violence' [40–42].

Even though the Universal Declaration of Human Rights has already named and problematized the need for the decoupling of continuities as we discussed above, the global system so far has not been able to *realise* the task. This inability, is not accidental. As we have seen, there is a strong systemic, ecological and evolutionary logic to it.

In the light of this situation our major interest and challenge is to figure concrete steps towards a radical and possibly disruptive change of society by making accessible to *all humans* the idea that they are subject to symbolically fabricated patterns of social continuity that inevitably program their minds and subjugate their cognitive resources not for their well-being but rather for the purpose of furthering their own perpetuation. Once humans collectively realize it, what we call the 'human takeover' era can begin.

The 'human takeover' means that humans will reach a state where they will effectively be capable of shedding such programming, gaining control over social systems, so that they will start working in the service of human well-being rather than for their own self-perpetuation. We recognise, however, that social change as we know it from historical references—the invention of a new narrated distinction that separates social forms which are 'wrong' from new ones which would be 'good'—would only lead us again into another, linguistically constructed, cul de sac. we do not wish, therefore to propose any such ideas.

Instead, we focus on the relationship between the human mind and the mechanics underlying all social systems. The search for the locus where the distribution of governing powers can be shifted has brought us thus to the human mind itself. Only by affirming the human as different from the social persona it enacts can we see the golden thread *along which* the human takeover can and must happen. This golden thread runs in the usually unperceived gaps between thoughts, communications and decisions that are preconditioned, preprogramed, prethought [5,43,44]. It brings to the light of consciousness the thinking, speaking and acting that are present and living. 'What I propose, therefore, is very simple'—Hannah Arendt [45] wrote—'it is nothing more than to think what we are doing.' To think, to voice, to enact each time anew, is the vehicle of the human takeover. *To secure the continuity of this golden thread, of this very flow into the governance of society*—is our existential challenge.

The human takeover needs to be nonviolent and genuinely creative. It can augment the entire human social system *not* by resolving the gridlock of all the colliding identities and trajectories mentioned in Section 2 but by *adding* a lifeline for humans to hold on to whenever they consider making a decision that challenges and disrupts; whenever they allow a new thought to take shape; whenever they genuinely feel the genuine need to say 'no,' or 'yes,' but today must say otherwise. For that, a 'good enough' relationship between the human being as such and the social system at large must be *secured*. We can now move on to discussing how to engineer this 'good enough world' for humans to be and become.

10. Existential Opportunity

'Existential risk' was defined by Nick Bostrom [46] as some unforeseen development 'that threatens the entire future of humanity.' Examples of such risks are a nuclear war, a pandemic, or disruptive technology, such as superintelligent AI or genetic manipulation, that gets out of control. Bostrom argued that avoiding existential risks should be an absolute priority for a global governance. This may in all probability be the case but the priority that comes just after must be pursuing *existential opportunities* on the same scale. An existential opportunity is a development that promises to dramatically improve the future of all humanity. For example, a cure for nearly all diseases, or a technology, such as cold fusion, that could produce unlimited amounts of renewable energy. But the opportunity does not lie just in this or that promising technology. In the context of our discussion, we see an existential opportunity in any scenario that would push humanity to surpass and secure the threshold of a 'good enough world.' Such push will in all probability be catalysed by technology but will require a much more fundamental change of a psychosocial nature as explained above. This can possibly be achieved by placing the emerging AI as a buffer situated *between* humans and the entire global socio-econo-political system.

We believe that the key factor to seizing an existential opportunity is *timing*. Sometimes something is impossible, until it becomes possible and then it becomes impossible again. The type of venture we have in mind would be to diligently explore and identify existential opportunities while they

are there and seize them. For example, we see one such opportunity in the emergence and current evolution of the Internet. The Internet was invented for a limited purpose but expanded to a vast electronic medium that interconnect all humanity in unprecedented and till just a couple of decades ago, unimaginable. The next phase in the evolution of the Internet will have the capacity to increasingly mediate not only information but also forms of governance and economic transactions via peer to peer functions that do not require any more centralized structures. As of today, the fast evolving capabilities of the Internet are likely to become entirely dominated by a few large players, even if distributed *within* their respective contours, for financial profit, thus deployed merely to strengthen the existing capitalist social system [47]. In such a scenario, the Internet will be used to automate some of the major transactions that define social systems, thus making them more efficient, however, without changing their general logic and values for example, the creation of surveillance states, social networks predating on their users' private information in order to further control their behaviours, etc. But ICT has also been used and can further evolve to create fundamentally new types of social interaction, systems and communities, where the focus is not control or maximizing profit but on sharing, free expression, spontaneous collaboration and helping others [48–50]. As such, the Internet can potentially become a backbone to a 'global commons,' an immense free space of information, products and services to which everyone can contribute to and from which everyone can profit [51,52]. Taking this direction is one plausible scenario how a 'good enough world' can be achieved not in the very far future.

In this spirit and in attempt to seize the opportunity we see, we have come up with a list of prospective requirements of the innovation which is needed. The points detailed below do not pretend to be a blueprint for a solution but rather a further specification of the more concrete socio-technological innovation required, we believe, in order to create a 'good enough world.' We hope that by now the reasoning behind the following design requirements has been made clear.

1. [*Unconditionality*.] The innovation must operate unconditionally: whatever will be offered to human beings *cannot be enabled or disabled* by specific features encoded in the personware.

2. [*Universality*.] As a consequence of (1), no human being can be denied access and *full participation*.

3. [*Shielding*.] The innovation will *mediate* between all human beings in their relations with all possible decision-produced social organizations.

4. [*Enoughness*.] The innovation must modulate the behaviour of the decision-produced social organization such that this will result in the *realisation of the 'good enough' relationship* between humans and social systems, that is, it will secure the organic and psychological continuity of the human being unconditionally and specifically, irrespective to the continuity of their personware. This will immediately imply the taking care of all existential needs of humans at the biological level. (We leave for now the issue that a realistic scenario towards such end must probably involve limiting population growth.).

5. [*Intelligence*.] The innovation will involve introduction of *technological solutions that* consist in making AI systems replace the *automated* cognitive function of humans in maintaining important social systems and augment the impact of such functions which are creative, singular and novel.

6. [*Niche-forming*.] In order to assure the participation of social systems, the innovation must find a way to modify their tendencies and preferred patterns of operation by offering them such an *advantage*, which will outweigh the current way they exploit human cognition to their ends.

7. [*Nonviolence*.] *No modification* of the governmental contours of the participating social organizations should be necessary or enforced for the innovation to function. Such modifications can only be inspired and organically adopted.

8. [*Distributedness*.] Should *governance tasks* emerge related to the continuous maintenance of the innovation once it has been implemented, they must be attributed so that no steerable contour will remain other than the self-organising dynamics emerging from the distributed actions and decisions of all the participants be them human beings or autonomous artificial agents.

9. [*Dissolution.*] The innovation cannot be *developed and implemented* as an extension of any specific social contour be it social movement, enterprise, political agenda, economic regime, research program and such. The innovation will be designed and implemented only as far as to be able to fulfil its designated function. There will be no mechanisms and no resources invested in the self-perpetuation of the social system which implements the innovation. Once specific functions are fulfilled, the particular implementation responsible for that will naturally dissolve.

The above requirements would make any prospective development of the innovation operationally unprecedented. Since the usual course of operationalising innovations is such that they are socio-economically, socio-politically, or otherwise culturally positioned, they are developed along an operationally predefined thread. For example, a research program may presume a specific contour of the outputs (e.g., publications) and incentives (e.g., academic reputation) to be fed into the networks of scientific communication and the contributors' personware, respectively. Another example is political agendas, which are mobilised and steered towards the delivery of specific benefits to preselected social persons (e.g., citizens) such that these in turn will reinforce the political status of the delivering social structure (e.g., by increasing voters support). Instead, the venture proposed will be deprived of operational classifiers that predefine and predetermine the societal contours to be conserved. The mandatory dissolution of the venture will ensure this orientation.

Let us briefly discuss three specific examples of concepts that seem particularly promising for the prospect of 'good enough world' and could become synergistically interrelated: (a) the social policy of *unconditional basic income*, (b) the development of *blockchains* and (c) the idea of the *offer networks*.

No concept of contemporary social policy seems to be practically closer to addressing the decoupling of personware from the human individual more than the concept of universal, unconditional basic income [53–56]. The idea is simple: instead of sustaining the national social security systems as composed of elaborate schemes of various types of benefits and interventions, governments could split the available resources equally among all citizens. This would have to be calibrated such that, even if the basic unconditional cash transfer was the *only* source of income, it would provide the beneficiaries with modest yet sufficient means to live by. As the eligibility would not hinge on any condition, such as inability to work, active job seeking, family situation et cetera, the instrument of basic income could be potentially an ideal solution for the 'good enough world' at least from its economic perspective. It could ensure the continuity of human existence, irrespectively of any social designation located in the personware. One commonly voiced criticism of the idea assumes, naturally, the social systems' perspective: would people still want to participate and contribute to society if the continuity of their life was already unconditionally secured? The axiology behind this line of criticism obviously contradicts the reasoning explained in our paper and we wish not to convince the reader that the continuity of social systems in general would remain unaffected. It certainly would not. But the more pragmatic question is, rather would it be affordable anyway? Even if it was, there would still remain a weakness in the concept, which in our view would undermine the effectuality of basic income as the instrument of the 'good enough world.' This weakness originates in the political, socio-systemic localisation of the instrument as it is currently proposed. Obviously: a status of a citizen of a country is a feature of the personware. The 'good enough world' cannot be reduced to a 'good enough country' for a simple yet profound reason: a basic income paid to a citizen, not to the human, would only reinforce the perception that the safe continuity of the recipient's life critically depends on the continuous sustenance of the relevant symbolic contour of the social persona. Furthermore, as the personal qualification of a citizen derives from a larger social system of the nation state, which attributes them, the continuity of these qualifications hinges on the continuity and prosperity of the social system. Consequently, nation state based programme of basic income will not decouple human cognition from the symbolic contour involved in nation states. What is needed, therefore, is something much more radical: a global, universal implementation achieved by means other than socio-symbolic constructs.

Blockchain technology provides a distributed peer-to-peer system of ledgers using a combination of data structures, algorithms, cryptographic and security technologies that ensure the integrity of transactions performed over the Internet [57]. In traditional social systems, that integrity is secured by a third party that mediates between the two parties performing the transaction. In the common case, such transaction requires the exchange of money, the integrity of which is certified by a financial institution that formally holds the money in its reserves and certifies that the appropriate amount has been transferred from one account to another. Other transactions are secured via contracts, the integrity of which is certified by notaries, lawyers, officials or other representatives of the legal system. In both cases, the completion of a valid transaction depends on a social institution acting as (by self-appointed definition) a trusted middleman. This involves substantial overhead and usually transaction costs, while leaving space for abuse and corruption by the middleman (e.g., gaining undue profits, or creating value out of thin air by printing money thus controlling the market dynamics). One of the great benefits of the Internet is that it facilitates 'disintermediation' or 'cutting out the middleman' [58], thus making exchanges more efficient and transparent. Current blockchain technologies already provide today cryptocurrencies that replace money minted by financial institutions and allow safe, trustless and anonymous peer-to-peer transaction of funds and other economic activities. (Trustless means that the parties involved in the transaction need neither trust each other nor use a third party trusted by both. The transactions are validated by a global cryptographic system that belongs to no one and represent no one.) Using similar cryptographic technologies parties can form what is called 'smart contract' whose execution can be ensured by computer code (that replaces written agreements) and certified by a distributed cryptographically networks of peers without resorting to judicial institutions and state controlled law enforcement. In both cases, since the computation is distributed over thousands of computers, there is no single point where the process can be manipulated. Transactions, therefore, could occur in principle much more reliably and efficiently, reducing costs, corruption and conflicts, while increasing the synergy of a global system with minimal or even without the mediation of social systems such as banks, courts etc.

Another potential radical disintermediation is one of the strengths of offer networks. The *offer network* concept was proposed by the AI researcher Ben Goertzel as a means to enable an economy without money [59], while its implications for global governance were explored by some of us [60,61]. The principle is that all people with access to the Internet would be able to use it to formulate their *needs*—that is, what they would like to get [62]—and their *offers*—that is, what they are willing to provide, either freely, or on the condition that some of their needs are met. Using AI algorithms, needs and offers are interpreted by the system to fit into a flexible and ever-growing 'ontology' of categories. These will be organized via links of different types, forming a Semantic Web [63] that can be automatically processed by software. This allows the system to match disparate needs with offers, while maximally satisfying the different conditions, values and preferences that users have expressed—individually or collectively. By searching through millions of offers and needs, the system should be able to find 'closed' networks where every need in the network is satisfied by one or more offers elsewhere in the network, so that the whole balances out and everyone gets what they want. The difference between an offer network and an autopoietic social system is that the distinctions and rules ('under what condition is someone willing to produce some offer') are formulated by the individuals themselves and in a decentralized manner. The coordination between offer and demands, however, is performed by a powerful and flexible AI agents that adapt to the users' preferences and not by a pre-existing system of symbolic rules that imposes its values on the individuals.

11. Summary and Conclusions

This paper presents an outlook for a radical shift in the power dynamics between three co-evolving cognitive aspects of humanity: human beings, social systems and the emerging artificial intelligences. We argue that a configuration between these three powers can be forged, in which human beings will find themselves in a position to actually start governing the socio-econo-political system, instead of

automatically processing that system's own self-generating tendencies and logic. For that to happen systemically, on the global scale, the relationship between the two: the human being and the social system at large must become specifically mediated by the third player just entering the scene—AI systems. Its emergence presents an existential opportunity and challenge for the whole of humanity, which must be ventured into and seized.

From the global web of all processes taking place in the human realm we have delineated a subset of events that makes up a global system of governance. These events consist of the encoding of cognitive selections onto a symbolic medium in the course of communication such that their decoding triggers directly, or indirectly via interpreted actions the occurrence of differences within the overall system. The majority of such events are still performed by human minds. When human beings are involved in governance, the decision making is usually produced by two meaning-processing structures coupled together. One is the human as such—the bio-psychological, breathing, sensing, moving, thinking, living being on its own *and* the other one is what we have termed personware: a network of symbol-anchored distinctions that provides the human with a descriptive contour of itself and contains it therein. Remarkably, both the personware and the decisions which are being instituted happen to be forged of the same substance that the entire social system is made of: linguistically (or otherwise symbolically) conserved communication, by which unique combinations of distinctions become recursively enacted into persisting, consolidated units.

We have argued that as long as the human conceives its basic, organic continuity as critically dependent on the symbolic coherence of its personware, along with the outer units that construe it, such relation can be said to reduce the involvement of human cognition in the decision-making process to mere automation. In such case the human mind is programmed [2] to process only such selections which pronounce the existence of its social persona within and in relation to the social system. Thus, the otherwise potentially untameable creative force of the human mind modulates itself to attend only where the personware fits in. This means that the only relevant 'decision-maker' remains the social persona. It is its own contour and structure that actually decides.

The automated identification of the human being with the linguistically constructed contour to which the decision-making powers are delegated is not only a matter of conceptualisation of how the human partakes in society. On the theoretical plane the distinction we are making here is nothing new: social scientists have been speaking about social persons, rather than human beings, already for decades. By doing so, however, they relegated the so called residual flesh-and-bones human animal to some other domains, suggesting that conceptualising the human being as separate from its social persona and language is, from the socio-scientific perspective, extremely naive. 'There is no such thing as a bare human being, we are being told. In contrast, we assert that identifying the human with its symbolically forged personware has actual debilitating consequences for each and every human being on Earth and for humanity at large. How the human individual is positioned and how it can express itself within the social system is not only a matter of theoretical conceptualisation—it is a moral and political problem. A problem that humanity can and should address [11,64–66].

We have argued that the automation of their participation within the social system forces humans to split their intrinsic drives into two: drives that can be satisfied through the available personware and those that must become painfully disowned for the sake of coherence. Distressingly, for many people this split is actualized in making a recurrent choice between staying merely alive and risking that in pursuit of their 'forbidden' wishes and desires. (One exception can perhaps be observed in Japanese culture where life do not necessarily carry the highest value. In such a society, indeed the number of suicides is increasing steadily. In many cases this is an outcome of depression but also it can be interpreted as an act of rebellion and saving one's primal dignity in front of an impossible existential situation.) For most of humanity today, the choice seems to be located between the economic safety and socially designated respect on one hand and self-actualisation, autonomy, variety and adventure on the other hand. How much creative energy is wasted on the planet by such a collective predicament?

To be sure, there are and always have been a few people able to manifest and magnify the entire range of their intrinsic human intensity within the existing society, however ill equipped that society might be to contain and make sense of such contributions. Due to the unfailable idiosyncrasy of the authentic, original human expression, such individuals inevitably communicate something new and surprising. 'Either you repeat the same conventional doctrines everybody is saying, or else you say something true and it will sound like it's from Neptune,' says Noam Chomsky [67]. Some people do that, despite all the social system's conditioning—and their personal power pushes the social system to evolve. For them, all it takes can be summed up as a shift in their own perception of who they are and how they are connected to the world. This personal aspect of the human takeover deserves a separate analysis. Here, in the current paper, we have focused on the conceptualisation of a shift that would be systemic and all encompassing. It would allow the takeover to happen for humanity at large.

We conclude that what is needed is a global dissolution of the perception that human vitality is critically dependent on the symbolic coherence of their respective social personas. Thus, we claim, all that is necessary for the full-scale human takeover to take place is the *actual* discontinuation of that dependence. Once the perception of such conditionality becomes universally debunked, it will fade and die out. Inspired by Donald Winnicott's [38] psychoanalytic concept of the 'good enough' parent we propose an image of a 'good enough world' in which the unreserved availability of the means for existence would be continuously provided underneath—before and irrespectively of—any social engagement [68]. Just as the good enough carer described by Winnicott enables the baby's healthy cognitive development by not forcing it to abandon one vital need for the sake of another, the 'good enough world' would likewise not force such a split as described above. This does not mean utopia. Good enough is far from ideal. It does not mean that everything would be provided abundantly, without delay, without any effort. It does not mean that real-world challenges would not continue to arise. It only means that every human being who chose to actualise their intrinsic will, however uncharted and new, would be doing so with a sense of basic belonging and safety. A sense that would not be put at risk. At some level, there would be no way to fall. Neuroscience is clear as to the difference: the biochemistry of love and the biochemistry of fear do impact immensely the scope and the quality of decisions human brains are capable of making [69–71]. The belief that all that is wrong with us is just an inevitable, unremovable part of the flawed human nature will not get us anywhere interesting. Moreover, that belief is unwarranted. Nothing in nature is *that* fixed. Add a powerful new factor to the environment and the entire behavioural pattern of a species might shift. We call for a venture that will introduce such a phase transition for humanity.

This can possibly be achieved by placing the emerging AI as a buffer situated *between* humans and the entire global socio-econo-political system. The developments of distributed autonomous computing make it apparent that the current function of the Internet is rapidly changing. Yesterday it was 'only' mediating information sharing across the planet, within just three decades the Internet has become the fundamental medium onto which social communication is being encoded and decoded. Still, the majority of such mediated events of communication do not have much weight from the perspective of governance, as we have defined it in this paper. The encoding and decoding of political decisions, policy implementations, legally binding contracts, financial transactions, et cetera, is still happening elsewhere. Today's developments are changing that. The Internet of tomorrow will mediate the execution of contracts, transactions, public interventions and all other change-triggering events of communication more reliably and more synergistically than any existing technology or institution. The function of the Internet will thus be increasingly one of governance. Such a shift, we argue, must not be just observed, commented on, taught about, or joined instrumentally as an extension of one's own social persona. The shift presents an existential opportunity that must be ventured into on behalf of the bare human being.

The venture, its exploration and implementation must be permissionless—meaning that its very nature cannot be contracted, legitimized or otherwise approved by any social body in order to become world changing—just like other inventions that have changed the world for example,

radio communication, aviation and the Internet. All that is needed for such grand vision to be realized is perhaps that a few dozen of Fuller's 'great pirates' [72] of our time—the ones who create blockchains [73–77] and holochain [78], who know how to hack the financial system for the greater good [79], who strive to develop a benevolent, compassionate Artificial Intelligence [80], who push forward the agenda of the unconditional basic income [55,56,81] and who deeply understand the power of effective altruism [82–84]—to get together and interweave the contours of their innovative endeavours into a radical integrated venture. (Our friend Z is probably packing her backpack already.).

Becoming partly yet directly involved in all value transferring arrangements being processed and not only in those which serve the contours of their relevant social constructions, human beings would gradually find themselves in a material and psychological position to assume ownership of the social manifestations they enact. Learning that their basic, organic continuity is no longer critically dependent on a merger with a pre-existing contour, they would have gained new degrees of freedom for exploring and expressing their innate humanity as they themselves consider fit. Then, perhaps, we could really start *thinking* of what we are collectively creating, without each such thought being pre-conditioned by the very system it is attempting to reflect on [31]. If we succeed in that, a reversal of power will happen: the Anthropocene will really begin.

In our paper, we mention three co-evolving powers—the human being, the social system at large and prospectively the emerging AI. Naturally, the picture which they together present is not complete. There is a fourth, less conceptualized and rather reified player involved, that is, 'everything else.' One can refer to it as 'nature,' 'life,' 'the planet,' 'the universe,' 'evolution,' et cetera. Only in the context of this factor the interplay of powers within the global system can be seriously discussed. However, it is our view that ontologically speaking, while the substance of personware is no different than the substance of the social system as such, likewise, the substance human beings are made of, if considered apart from their social constructs, is no different from the substance of the planet, the substance of life. By declining to bound understanding of the human out from its animalistic, organic root, which happens when language is used to be the criterion and the instrument of the definition, humans can indeed *see* themselves as a part of the natural world. Latched on our social roles we assume that the shift in the relationship between us and the natural environment is the social systems' task: industries and economies, corporations and states must modify their ways and start orchestrating us differently. This is a fact but here we highlight a more fundamental one. The human, being an irreducible amalgam of a biological nature and a symbolic nature should not experience itself only as a symbolic creature consumed by his social roles dictated by its personware but also as a creature of nature who must exist in contact and harmony with this nature. It is also an animal (Latin *animalis* means 'having breath' or 'living being'). As such, it is a part of the environment of the symbol-constituted systems, just as rivers, whales, bees and apple trees are. When finding themselves in a position of being recruited and utilized by networks of the symbolic exchange, such as capital and its derivatives, humans are thus not on their own. They are in the formidable company of all other animals, plants, water, soil and air, all of which are harnessed all the same.

We lose the sense of that natural kinship already as babies, subjected to all the early instituted symbolic cuts but for most people the first experience they have in life is still that of belonging and being cared for—or regretfully the experience of *missing* that. This constitutes a psychological, emotional resource that the innovation we are advocating here should attempt to tap into and activate. Perhaps all it would take for our 'fourth player' to be manifested in the global system of governance could be a touch, that same touch that social systems teach us to ignore or even abuse: a subtle, very gentle touch of meaning and trust in life as such. Social scientists have noticed that sometimes when unconditional cash transfers become *labelled*—i.e., simply announced as dedicated to a specific aim, without any control mechanism to assure that they really are—more money tends to be spent on the designated purpose than it is the case when no such label has been introduced [85]. This effect could play a central role once a 'good enough world' has been established to interrelate social processes, fibre optic cables, business architectures, silicon chips, works of art, accounting books, wireless networks,

legal contracts and governments—once it has come in to mediate the transmutations of energy, water, beauty, thrill, food, comfort, ideas and dreams, one into another, making a fair share of all values flow into the hands of all people in the world, unconditionally. Maybe then they would read this as a message:

Dear X, | Dear Y, | Dear Z,

This is to provide for your needs.

I love You,

Your Earth

References

1. Bostrom, N. *Superintelligence: Paths, Dangers, Strategies*; Oxford University Press: Oxford, UK, 2014.
2. Heylighen, F.; Lenartowicz, M.; Kingsbury, K.; Beigi, S.; Harmsen, T. Social Systems Programming: Behavioral and Emotional Mechanisms Co-opted for Social Control. *Syst. Res. Behav. Sci.* **2018**, in press.
3. Lenartowicz, M. Creatures of the Semiosphere: A Problematic Third Party in the "Humans Plus Technology" Cognitive Architecture of the Future Global Superintelligence. *Technol. Forecast. Soc. Chang.* **2017**, *117*, 35–42. [CrossRef]
4. Leggewie, C. Der Mensch entscheidet im Anthropozän. In *Sind Umweltkrisen Krisen der Natur oder der Kultur?* Springer: Berlin, Germany, 2015. (In German)
5. Baecker, D. *Neurosoziologie: Ein Versuch*; Suhrkamp Verlag: Berlin, Germany, 2014.
6. Luhmann, N. *Social Systems*; Stanford University Press: Stanford, CA, USA, 1996.
7. Luhmann, N. *Theory of Society*; Stanford University Press: Stanford, CA, USA, 2012; Volume 1&2.
8. Schumacher, E.F. *Small is Beautiful: A Study of Economics as If People Mattered*; Random House: New York, NY, USA, 2011.
9. Hale, T.; Held, D.; Young, K. *Gridlock: Why Global Cooperation Is Failing When We Need It Most*; John Wiley & Sons: Hoboken, NJ, USA, 2013.
10. Lenartowicz, M.; Weinbaum, D.R.W.; Braathen, P. Social Systems: Complex Adaptive Loci of Cognition. *Emerg. Complex. Organ.* **2016**, *18*. Available online: http://www.academia.edu/attachments/46933864/download_file?s=portfolio (accessed on 4 May 2018).
11. Bateson, G.; Donaldson, R.E. *A Sacred Unity: Further Steps to an Ecology of Mind*; Harper Collins: New York, NY, USA, 1991.
12. Deleuze, G. *Difference and Repetition*; Columbia University Press: New York, NY, USA, 1994.
13. Weinbaum, D.R.W. Open-Ended Intelligence. Ph.D. Thesis, 2018. Available online: http://pcp.vub.ac.be/ECCO/ECCO-papers/Weaver-PhD.pdf (accessed on 4 May 2018).
14. Varela, F.J.; Thomson, E.; Rosch, E. *The Embodied Mind: Cognitive Science and Human Experience*; MIT Press: Cambridge, CA, USA, 1992.
15. Thompson, E. *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*; Harvard University Press: Cambridge, CA, USA, 2007.
16. Lenartowicz, M. How Social Forms Come Alive: The Enactive Workings of Discursive Positioning. Working Paper. 2018. Available online: http://www.academia.edu/attachments/54588721/download_file?s=portfolio (accessed on 4 May 2018).
17. Weick, K.E. *Making Sense of the Organization*; Blackwell: Oxford, UK, 2001.
18. Tönnies, F. *Community and Civil Society*; Cambridge University Press: Cambridge, UK, 2001.
19. Kriz, J. *Self-Actualization: Person-Centred Approach and Systems Theory*; PCCS Books: Ross-on-Wye, UK, 2008.
20. Mead, G.H. *Mind, Self, and Society*; Morris, C.W., Ed.; University of Chicago Press: Chicago, IL, USA, 1934.

21. Goffman, E. *Stigma, Notes on the Management of Spoiled Identity*; Prentice-Hall: Upper Saddle River, NJ, USA, 1963.

22. Lacan, J. *Ecrits: A Selection*; Routledge: Abingdon, UK, 2001.

23. Krishnamurti, J. *Krishnamurti: Reflections on the Self*; Open Court Publishing: Chicago, IL, USA, 1997.

24. Tolle, E. *The Power of Now: A Guide to Spiritual Enlightenment*; Namaste Publishing: Vancouver, BC, Canada, 1999.

25. Fuchs, P. *Die Psyche: Studien zur Innenwelt der Außenwelt der Innenwelt*; Velbrück: Weilerswist, Germany, 2005. (In German)

26. Tschacher, W.; Munt, M. The Self as Attractor: The Psychological Self Seen from the Perspectives of Dynamical Systems and mindfulness. *Psychotherapie* **2013**, *18*, 18–37.

27. Merleau-Ponty, M. *Das Sichtbare und das Unsichtbare*; Wilhelm Fink: Munich, Germany, 1986. (In German)

28. Wilber, K. *Integral Psychology: Consciousness, Spirit, Psychology, Therapy*; Shambhala: Boston, MA, USA, 2000.

29. Simon, F.B. *Formen, Zur Kopplung von Organismus, Psyche und Sozialen Systemen*; Carl Auer: Heidelberg, Germany, 2018. (In German)

30. Simondon, G. The position of the problem of ontogenesis. *Parrhesia* **2009**, *7*, 4–16.

31. Bohm, D. *Thought as a System*; Routledge: Abingdon, UK, 1994.

32. Weinbaum, D.R.W. The Way We Are Free: On the Problem of Free Will. ECCO Working Paper. 2010. Available online: https://www.academia.edu/770187/The_way_we_are_free_on_the_problem_of_free_will (accessed on 4 May 2018).

33. Maturana, H.R.; Varela, F.J. *Autopoiesis and Cognition: The Realization of the Living*; D Reidel Pub Co.: Dordrecht, The Netherlands, 1980.

34. Mani, A.; Mullainathan, S.; Shafir, E.; Zhao, J. Poverty impedes cognitive function. *Science* **2013**, *341*, 976–980. [CrossRef] [PubMed]

35. Bateson, G.; Jackson, D.D.; Haley, J.; Weakland, J. Towards a Theory of Schizophrenia. *Behav. Sci.* **1956**, *1*, 251–264. [CrossRef]

36. Stewart, J. *Evolution's Arrow: The Direction of Evolution and the Future of Humanity*; Chapman Press: Orange, CA, USA, 2000.

37. Combes, M.; LaMarre, T. *Gilbert Simondon and the Philosophy of the Transindividual*; Duke University Press: Durham, NC, USA, 2013.

38. Winnicott, D.W. *Playing and Reality*; Routledge: New York, NY, USA, 1971.

39. Rosenberg, M.; Chopra, D. *Nonviolent Communication: A Language of Life: Life-Changing Tools for Healthy Relationships*; Puddle Dancer Press: Encinitas, CA, USA, 2015.

40. Galtung, J. Violence, Peace, and Peace Research. *J. Peace Res.* **1969**, *6*, 167–191. [CrossRef]

41. Farmer, P.E.; Nizeye, B.; Stulac, S.; Keshavjee, S. Structural Violence and Clinical Medicine. *PLoS Med.* **2006**, *3*, 1686–1691. [CrossRef] [PubMed]

42. Scheper-Hughes, N. Dangerous and Endangered Youth: Social Structures and Determinants of Violence. *Ann. N. Y. Acad. Sci.* **2004**, *13*, 13–46. [CrossRef] [PubMed]

43. Leont'ev, A.N. *Activity, Consciousness, and Personality*; Prentice-Hall: Upper Saddle River, NJ, USA, 1978.

44. Jantzen, W. *Materialistische Anthropologie und Postmoderne Ethik. Methodologische Studien*; Pahl-Rugenstein: Bonn, Germany, 2004. (In German)

45. Arendt, H. *The Human Condition*; University of Chicago Press: Chicago, IL, USA, 2013.

46. Bostrom, N. Existential Risk Prevention as Global Priority. *Glob. Policy* **2013**, *4*, 15–31. [CrossRef]

47. Van Dijck, J. *The Culture of Connectivity. A Critical History of Social Media*; Oxford University Press: New York, NY, USA, 2013.

48. Harvey, P.-L. *Community Informatics Design in Action: Towards Operational Ways of Thinking in Order to Start a Design Process*; Springer: Berlin, Germany, 2017.

49. Heylighen, F. Why is Open Access Development so Successful? Stigmergic organization and the economics of information. In *Open Source Jahrbuch 2007*; Lutterbeck, B., Bärwolff, M., Gehring, R.A., Eds.; Lehmanns Media: Berlin, Germany, 2007.

50. Steele, R.D. *The Open-Source Everything Manifesto: Transparency, Truth, and Trust*; Evolver Editions: Berkeley, CA, USA, 2012.

51. Last, C. Self-actualization in the Commons. *Technol. Forecast. Soc. Chang.* **2016**. Available online: https://cadelllast.files.wordpress.com/2012/12/last-c-2015-self-actualization-in-the-commons-short-introduction.pdf (accessed on 4 May 2018).

52. Rifkin, J. *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*; Palgrave Macmillan: Basingstoke, UK, 2014.

53. Van Parijs, P. *Arguing for Basic Income. Ethical Foundations for a Radical Reform*; Verso: London, UK, 1992.

54. Atkinson, A.B. *Public Economics in Action: The Basic Income/Flat Tax Proposal*; OUP Catalogue; Oxford University Press: Oxford, UK, 1996.

55. Standing, G. *Basic Income: A Guide for the Open-Minded*; Yale University Press: New Haven, CT, USA, 2017.

56. Bregman, R. *Utopia for Realists: How We Can Build the Ideal World*; Little, Brown and Company: New York, NY, USA, 2017.

57. Narayanan, A.; Bonneau, J.; Felten, E.; Miller, A.; Goldfeder, S. *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*; Princeton University Press: Princeton, NJ, USA, 2016.

58. Gellman, R. Disintermediation and the internet. *Gov. Inf. Q.* **1996**, *13*, 1–8. [CrossRef]

59. Goertzel, B. Beyond Money: Offer Networks, a Potential Infrastructure for a Post-Money Economy. In *The End of the Beginning: Life, Society and Economy on the Brink of the Singularity*; Goertzel, B., Goertzel, T., Eds.; Humanity+ Press: New York, NY, USA, 2015.

60. Heylighen, F. Towards an intelligent network for matching offer and demand: From the sharing economy to the global brain. *Technol. Forecast. Soc. Chang.* **2017**, *114*, 74–85. [CrossRef]

61. Heylighen, F. The Offer Network Protocol: Mathematical foundations and a roadmap for the development of a global brain. *Eur. Phys. J. Spec. Top.* **2017**, *226*, 283–312. [CrossRef]

62. Kleedorfer, F.; Busch, C.M.; Pichler, C.; Huemer, C. The Case for the Web of Needs. In Proceedings of the 2014 IEEE 16th Conference on Business Informatics (CBI), Geneva, Switzerland, 14–17 July 2014; pp. 94–101. [CrossRef]

63. Allemang, D.; Hendler, J. *Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL*; Elsevier: Burlington, MA, USA, 2011.

64. Arendt, H. *Eichmann in Jerusalem. A Report on the Banality of Evil*; Viking Press: New York, NY, USA, 1963.

65. Von Foerster, H.; Broecker, M. *Part of the World. Fractals of Ethics—A Drama in Three Acts. Heinz von Foerster's Most Extensive Biography*; CreateSpace: Seattle, WA, USA, 2010.

66. Rosa, H. *Resonanz. Eine Soziologie der Weltbeziehung*; Suhrkamp: Berlin, Germany, 2016. (In German)

67. Chomsky, N. *The Chomsky Reader*; Peck, J., Ed.; Pantheon Books: New York, NY, USA, 1987.

68. Veitas, V.; Weinbaum, D. A world of views: A world of interacting post-human intelligences. In *The End of the Beginning: Life, Society and Economy on the Brink of the Singularity*; Goertzel, B., Goertzel, T., Eds.; Humanity+ Press: New York, NY, USA, 2015; pp. 373–428.

69. Butler, M.J.; O'Broin, H.L.; Lee, N.; Senior, C. How Organizational Cognitive Neuroscience Can Deepen Understanding of Managerial Decision-making: A Review of the Recent Literature and Future Directions. *Int. J. Manag. Rev.* **2016**, *18*, 542–559. [CrossRef]

70. Brown, P.; Kingsley, J.; Paterson, S. *The Fear-Free Organization: Vital Insights from Neuroscience to Transform Your Business Culture*; Kogan Page Publishers: London, UK, 2015.

71. Lerner, J.S.; Li, Y.; Valdesolo, P.; Kassam, K.S. Emotion and decision making. *Ann. Rev. Psychol.* **2015**, *66*, 799–823. [CrossRef] [PubMed]

72. Fuller, R.B. *Operating Manual for Spaceship Earth*; Lars Müller Publishers: Baden, Switzerland, 2008.

73. Nakamoto, S. Bitcoin: A Peer-to-Peer Electronic Cash System. 2008. Available online: https://bitcoin.org/bitcoin.pdf (accessed on 4 May 2018).

74. Szabo, N. Smart contracts: Building blocks for digital markets. *Extropy J. Transhumanist Thought* **1996**. Available online: http://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html (accessed on 4 May 2018).

75. Buterin, V. A Next-Generation Smart Contract and Decentralized Application Platform. White Paper. 2014. Available online: https://www.weusecoins.com/assets/pdf/library/Ethereum_white_paper-a_next_generation_smart_contract_and_decentralized_application_platform-vitalik-buterin.pdf (accessed on 4 May 2018).

76. Davidson, S.; De Filippi, P.; Potts, J. Economics of Blockchain. 2016. Available online: http://dx.doi.org/10.2139/ssrn.2744751 (accessed on 4 May 2018).

77. Swan, M.; De Filippi, P. Toward a Philosophy of Blockchain: A Symposium: Introduction. *Metaphilosophy* **2017**, *48*, 603–619. [CrossRef]

78. Harris-Braun, E.; Luck, N.; Brock, A. Holochain: Scalable Agent-Centric Distributed Computing. 2018. Available online: https://github.com/holochain/holochain-proto/blob/whitepaper/holochain.pdf (accessed on 4 May 2018).

79. Scott, B. *The Heretic's Guide to Global Finance: Hacking the Future of Money*; Pluto Press: London, UK, 2013.

80. Goertzel, B.; Pennachin, C.; Geisweiller, N. *Engineering General Intelligence, Part 1: A Path to Advanced AGI via Embodied Learning and Cognitive Synergy*; Springer: Berlin, Germany, 2014; Volume 5.

81. Santens, S. Unconditional Basic Income as a Solution to Technological Unemployment. In *Surviving the Machine Age: Intelligent Technology and the Transformation of Human Work*; LaGrandeur, K., Hughes, J.J., Eds.; Palgrave Macmillan: Cham, Switzerland, 2017.

82. MacAskill, W. *Doing Good Better: Effective Altruism and a Radical New Way to Make a Difference*; Guardian Faber Publishing: Norwich, UK, 2015.

83. Haushofer, J.; Shapiro, J. Household Response to Income Changes: Evidence from an Unconditional Cash Transfer Program in Kenya. Massachusetts Institute of Technology. White Paper. 2013. Available online: http://jeremypshapiro.com/papers/Household%20Response%20to%20Income%20Changes-%20Evidence%20from%20an%20Unconditional%20Cash%20Transfer%20Program%20in%20Kenya%20November%202013.pdf (accessed on 4 May 2018).

84. Faye, M.; Niehaus, P. Political Aid Cycles. *Am. Econ. Rev.* **2012**, *102*, 3516–3530. [CrossRef]

85. Beatty, T.K.; Blow, L.; Crossley, T.F.; O'Dea, C. Cash by Any Other Name? Evidence on Labeling from the UK Winter Fuel Payment. *J. Public Econ.* **2014**, *118*, 86–96. [CrossRef]