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The end of agency and the last man

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Aim: In order to address the question whether a more sustainable society requires a change of purpose or a change of system, we must first resolve the issue of human agency. Is humanity free to choose its own destiny, or is humanity's future determined by contingency of conditions and choices of the past?

Design / Research methods: On the basis of cumulated knowledge and carefully cited literature, we defend the thesis that human agency is at best a minor factor in the determination of the future even in the short term.

Conclusions / findings: We conclude that significant decrease of resources depletion and greenhouse gas production may sustain humanity in the middle to long term, but the proven lack of human agency allows only to predict the complete demise of humanity in the short term.

Originality / value of the article: We apply the method of dialogue to show historical points of focus with respect to the issue of human agency. This paper is of interest to those organizing projects of socio- and or geo-engineering, since it describes the likely limitations of agency in regards to social structure, and so implies that actions will always have unintended consequences, which will drive more actions.

Keywords: socio-engineering, geo-engineering, agency, climate change, systemic change, energy
JEL: O10, O21, O33, O35, P18, P28, P41, Q40, Q50.

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1. Introduction

De Tocqueville (see Zaleski 2008), Durkheim (2017, original text 1893), Weber (see Baehr 2001), Marx, and many others contributed to a blurry but cohesive description of what constitutes "social structure." Social structure is a functional consequence of the social system. Humans participate in acts perpetuated daily; the acts have specific ritual locations, like banks, churches, courts, universities and so on, each with its own area, specialty or authority but generally part of a parent system. Max Weber talked about "steel hard cases" while others saw social structure as both enabling and impeding (see e.g., Campbell 2009). Levi Strauss looked for functional clues in the relationship between social objects, looking for symmetry, with the implication that there are laws behind the structures we see (cellular automata; e.g., Conway's "Game of Life" which every move is determined by the very simple program, but before long produces unpredictable structures; see Goffman 1980). We take the approach that the global system arose with the advent of culture, and describe it as a system which has arisen based on the simple propensities of humankind. Culture is not spicy food, wooden shoes and colorful hats: that is *custom*. Culture is the interface between humans and the environment. Culture adapts to the environment; humans adapt to culture.

The "individual in society" is a recursive discussion of what Anthony Giddens (1984) termed "structuration," which is one way of framing the idea[1] that humans doing what they do creates the social world which enables and constrains humans (see for example Weber as discussed in Baehr 2001). Gidden's description of "structuration" seeks a systemic view, what some call a "holistic view," where the entire system is considered; as a result, structuration, seeks to consider the entire relationship between humans and the system, more specifically, social structure, which is the functional manifestation of the system. Our discussion makes the assumption that humans are subsystems, and their continuation is a product of the system. In this paper, we refer to "agency" as the choices the individual has in the

[1] Giddens was struggling to synthesize the different macro and micro approaches, hoping to find an escape from the discussion of which was dominant, the system or human will. In our discussion, there is no need for that effort.

context of the social system, which is a common discussion in the social sciences. Agency is the power to give *intended shape*, not just *changed shape*.

The shaping of the relationship between the individual and the social structure has been intensely discussed by sociology. This discussion will regard primarily that process, not of "structuration." The idea of "free will" is not identical to agency in some discussions, but here, since virtually all of a human's life is contexed in the social world around them, such that a singular "human" actually populates their inner world (inhabiting it with people, spirits, and gods), all human activity is social and therefore, "agency." It is a keystone of the Post Enlightenment era, and a part of the dogma of secular humanism that humans have will, or agency, and that they can discover how to manipulate the world through cognitive thought and scientific method (see e.g., Pinker 2018). Evidence of agency in history is as obvious and all pervasive to that perspective as the hand of God was in Europe until a few centuries ago. It can make an objective discussion difficult.

In discussing human actions objectively, it is helpful to consider the natural constraints of human choice. For humans to continue as a species, they have innate propensities. It is not necessary that all humans exhibit all propensities in obvious ways, it is only necessary that a sufficient percentage of the population does, and that nearly all functional people exhibit some aspects of the propensities. Humans exhibit these propensities: to live, to have consanguineous and fictive kin live, and to that end, to have status, which is authority and legitimacy to access group surplus. In support of that, humans seek affiliation, they tend to travel or wander as most foragers do, and to set up relationships in scattered places, which are networks. These propensities lead to behaviors which are necessary for, and a feature of, the system.

In a kind of "mental experiment" we can deconstruct agency in a human. First, we strip away all the features about the human that they cannot change, or if they attempt to change them, will require considerable effort which will exceed the benefit, can't be sustained and so will extinguish. These include date and location of birth; sexual characteristics at birth; parents; and the custom into which they are

born[2]. In general, most humans function in a tightly inhabited social sphere. This implies that they have many roles in different social situations, and that those roles carry responsibilities which entitle the person legitimate authority to engage in actions in the social world. The process by which a new human learns to navigate the spoken and mostly unspoken rules of society is "socialization." As noted, being social is a propensity for humans, a literal necessity for survival.

The rules of each role are often expressed in manifest and occult ways, meaning that each role has rules which are obvious and often expressed, but that in non-obvious ways, the role provides unacknowledged benefits. An easy example might be that we are all members on the team but the boss still gets his own bathroom and drives a company car. Those roles, individually in context and in aggregate in the lived world, constrain the choices of the individual. To violate them is to lose status, i.e. to have access to the collective surplus damaged. So, from the perspective of micro levels of analysis like dramaturgy (Goffman 1980) and Symbolic Interaction Theory (Stryker 2008), breaking the rules of the role means guilt, which is the fear of discovery, and shame, which is the pain of discovery.

This system of access to the surplus of society, through ritual interaction with other humans creates social structures, and most importantly, it creates hierarchy, it creates an elite. Indeed, the propensities of humans mean they always employ "differential association," meaning altruism, which is benefit sacrificed to a fictive or actual relative, or to others from which one might gain social status or favors from an imagined deity. Differential association also implies discrimination, in small ways where a person or class of persons is simply marginalized and not included and large ways including genocide. All of these things regard the distribution of system resources among people. In short, it is access to resources, specifically surplus. and future surplus (debt), and to other humans (networks), which explain most of human behavior, and whittle away at the territory one might imagine for "agency" to be expressed in. Closer examination might reveal that most "free will" is actually a variation on a theme expressed often within very narrow criteria ("I dyed my hair bright red as a symbol of my individuality and free will").

[2] In this discussion, "culture" is the interface between humans and the environment; culture is "the system". The variations in which culture appears locally is "custom".

The discussion regarding human agency and the contrast of action over social context as primary is usually described, as, for example, cultural niche theory versus cognitive niche theories of the growth of culture (Morgan 2016). In the early part of the last century, the discussion was framed "existentialist vs structuralist" (Brown 1978). Sometimes the discussion is referred to as "dual inheritance," acknowledging a synthesis and leaving only the percentages and purview of each to be negotiated. However, there is very little real evidence that human agency does more than power each individual through the networks of the system. Human agency is limited to the enacting of those propensities listed above, and it is created by the context of the system and the social structures which arise from the flow of human energy. It really doesn't matter what humans do, just that they do something; the system will, functioning within the rules of its state, form itself. We propose that the global system is describable according to the very simple rules that govern all dynamic systems.

2. A dialogue on human agency

A great tradition in communicating academic ideas is the dialogue (e.g., Morrell 2004), whose application goes back to Plato but was also used by Paul Feyerabend (1979) and has more recently been propagated as an instructive method (Skordoulis, Dawson 2007). Imagine the below conversation to have been recorded in a hotel lobby right after an international conference on Sustainable Development in the COVID-19 era. Joined together are two PhD students (Sophie and Lee), a professor of Philosophy, and a lecturer in Environmental Science joined together while waiting for airport transportation. We pick up on this exchange after they shared the usual courtesies.

Sophie I'm considering to write a paper on the issue as to whether a more sustainable society requires a change of purpose or a change of system. Would anyone of you be interested in participating?

Professor Sophie, this would be a very significant paper, and perhaps we should at least work towards it even if it is never published. Oh, I have to take this phone call…

Lecturer Sure… but maybe first define the concepts "sustainable society," "purpose," and "system." Otherwise, the discussion quickly becomes tautological, as we can view society as a system and its purpose to be sustainable.

Sophie Uhm… okay… First of all, a society is just a large collection of people living together in a given territory, like a region or a land. I suppose the Sumerians are the first known society by this definition. I mean by system, the politico-economical system, for example, communism, capitalism, fascism, neoliberalism, and so on. I consider a society to be sustainable if it lives in equilibrium with the environment. The purpose… seems more difficult to define, but it could mean materialism as opposed to, ehm… more spiritual inspired ways of living…

Lecturer Happiness? Pleasure? Well-being? The greater good? Surely you have heard of Jeremy Bentham's *utilitarianism* (Collard 2006)?

Sophie I don't know… these things become really ugly as soon as they are claimed by some philosopher… Like Emmanuel Kant's categorical imperatives. They work in one dimensional worlds where all people have equal resources and equal opportunities, but people never have. The loss of 100 euro means a lot to a streetsweeper but it means nothing to a millionaire, and therefore stealing 100 euro from a streetsweeper is not the same thing as stealing 100 euro from a millionaire. The same problem applies to the maxim to always choose the action that produces the greatest amount of happiness to greatest number of people, which probably means that we have to maintain the present materialistic system that leads to resources depletion and for sure is not sustainable...

Lecturer It seems you already have part of the answer: it's the purpose that needs change first and for all.

Lee Only if you assume that materialism cannot be sustainable.

Sophie What do you mean?

Lee Let's take a step back, and consider the merit of materialism. If you look at the rate that iPhones, McDonalds, cars and jeans have gained popularity all over the world regardless of the adapting societies being communistic, capitalistic, theocratic, or whatever. If there is a maxim about happiness, it must phrased as "the good life is the 'goods' life." Theodor Adorno (2002, original text 1947 with Horkheimer) may be skeptical about the "cultural industry," but the fact is that its fruits are popular irrespective of human culture. If there's any shared value among nations, it's the universal desire for material. This will not go away just because it's inconvenient from the standpoint of the environment.

Sophie But materialism doesn't make people happy… Many studies (Pandelaere 2016; Hudders, Pandelaere 2012; Swinyard et al. 2000) have shown that!

Lee What makes you think that people want to be happy? People like Bentham, Mill and Kant can claim that people pursue happiness, but where's the proof? And also, as we're discussing definitions here, how do you define and measure happiness?

Lecturer You're just being skeptical…

Lee I want to expose the hidden assumptions that go in a debate like this. Suppose for a minute, that you accept my skepsis of the idea that people pursue "happiness" and replace the term by "survival." So we would assume that the purpose of a society and the system it adopts is survival of the people. What historical evidence can be given in support of this idea?

Lecturer Why, the very reason that we are discussing this topic is because all of us agree that the present system is not sustainable and that something needs to be changed if mankind is to survive.

Lee Exactly! You're proving my point. Mankind doesn't select a system with the purpose of survival. And it doesn't select a system with the purpose of happiness. It selects a system that brings them maximal material. Survival and happiness are, if anything, unintended side effects.

Sophie When I listen to you I wonder if society selects a system at all.

Professor Wow that escalated quickly! Have you hit rock bottom already?

Lecturer So far, we found that the unalterable purpose of society is materialism, and that all societies will adapt a system that maximizes material gain. If we apply this to Sophie's original paper proposal on whether a more sustainable society requires a change of purpose or a change of system, we conclude that neither the system nor the purpose can be changed and that the paper is dead in the water already.

Professor Fine! Excellent! That leaves only one issue open for discussion, which is, can a society change its system or purpose? Or, in academic terms, does a society possess agency?

Lee Let's take that one down fast. Society doesn't have a will or a centralized intelligence that can make it act. It just does what it does. If it survives, than that's what it did, and if it perishes, it's just another historical outcome. So I say, society has no agency.

Sophie You're focussing on a thingism. Yes, society as a collection of individuals has no will of itself. But its members do, and their concerted agency can be referred to as the agency of a society.

Lee Uh-oh. Here comes the nature-nurture debate (Rutter 2002). Not again, please…

Professor Agreed, because it won't help to position ourselves with respect to free will and agency. If you believe that everything is determined by nature, so that a criminal is criminal by descent and a millionaire is a millionaire by descent, it implies that there is no free will which means there is no human agency. If on the other hand, the human fate is determined by nurture, then agency of the parents, caretakers and other actors play a role in shaping an individual. Paradoxically, neither nature nor nurture allow for such a thing as free will, or agency, of the individual! In the words of d'Holbach (see Van Strien 2014), "everything that happens is connected through a chain of causation." And if there is no agency of the individual, there cannot be such a thing as agency of a society.

Lecturer We also assume that nature excludes human nature, both individually and collectively as in "culture." I for one, agree with Bruno Latour (2017)

that such a divide between humanity and nature is wrong and counterproductive. It is a single system. We might as well call it Gaia.

Sophie We're not going to find much support for the idea that humans serve the same purpose, if any, as all other forms of life on this Planet. But I don't see, Lee, how I am supposed to have brought up the nature-nurture debate. Please explain.

Lee Maybe I made a bit of a leap. The shortcut in my brain ran from individual agency as influenced by culture, which is nurture, to the culture itself which is much the product of its environment, which is nature. This nature-nurture debate is intellectually lame as the professor just showed.

Lecturer And so we had better define agency. I'm sorry that I always insist on clear definitions, but if we don't we can only digress. So the first question is, are we okay to equate human agency with free will? And that when we speak of free will, it must involve choice? And that things that involve choice must speak of different options?

Sophie It would be a torture if you had free will but no choice among options. For sure. But there's much to be said that free will doesn't exist. The laws of nature don't allow for indeterminism.

Professor The theories of physics certainly don't allow for indeterminism outside aleatory uncertainty (Der Kiureghian, Ditlevsen 2009). Naïve realism believes that these theories are true and while slamming a fist on the table forcefully dismisses any possibility of free will, but then retains a dead silence when it comes to explain and predict human behavior. So I propose we brush naïve realism aside and not confuse theory with reality (Kampen 2020). After so many scientific revolutions scientists should know better. A good theory is able to predict observable outcomes, but the truth is only in what is observed and not in the theory. To be sure, I don't rule out the theoretical possibility that with sufficient amounts of data, the behavior of any individual can be predicted. But so long as we neither have these data nor the means to process them, the claim that free

will cannot exist because everything is determined is of the same class as the claim that God created the universe. Poetic, convincing, and useless.

Lee Hear hear.

Sophie I understand that the laws of nature don't allow for indeterminism, and that therefore, there's no such thing as free will or agency. But I find myself unable to act on that belief.

Lecturer *Laughing out loud.*

Professor Sophie, if I would slap you in the face right here and now, or if I would drag you upstairs and force myself upon you, would you accept my not having a free will as an excuse?

Sophie Certainly not!

Professor Of course you wouldn't. This is why Derk Pereboom (2014), Alfred Mele (2017) and others make a connection between the free will debate and moral responsibility. Most people in everyday life, including hardcore naïve realists like Sabine Hossenfelder still support human notions of punishment and reward, and of moral responsibility for the actions of a person. The punishment for a crime, so they say, is not because the criminal performed it out of free will but because the criminal is the embodiment or physical location of a problem. B.F. Skinner's behaviorism may be of use here. Skinner (1974) explicitly states that a person's behavior is controlled by his genetic and environmental histories, and that the purpose of the behavior of any organism is to exercise control over their environment. The response of an organism to being controlled is countercontrol, and, he continues, countercontrol is the only reason why one person treats another person well.

Sophie I can see why he never became popular.

Lee Skinner is not popular in circles interested in word-knitting because he always insisted on observational evidence to support scientific theories. If your interest is in constructing and supporting ideologies like neoliberalism, communism or critical race theory, to name just a few, observational evidence can only stand in your way.

Lecturer Skinners ideas are revived by Patricia Churchland (2006), when she says that the question of free will gets us into linguistic problems and instead we should focus on self-control. She carries on to explain that all mammals have degrees of self-control and that drugs like nicotine, alcohol and cocaine have very specific ways in how they affect self-control.

Lee How is this line of thought going to get as near to an answer to the original question: can a society change its system or purpose? If all here agree with Skinner and the likes, we can only arrive at the conclusion that since there is no human agency, there can be no agency of society and therefore, the only thing we can do is sit back and watch how the history of mankind will unfold.

Professor And you don't like that answer?

Lee Not really, no.

Professor Join the club. And it's a big club you joined, with almost all impressive names of history, from Alexander the Great all the way to Robespierre, Lenin and Bush. The action that was under their control was the use of other human beings as instruments for looting, killing and destruction. Now ask yourself the question, what did these so-called great men really achieve? Did mankind survive because, or despite of their actions?

Lecturer You're referring to John Gray (2007) and his treatment of millennialism, the Western-bred belief that humanity can be changed and that this change can be accomplished by violence. He shows that these big movements never acquire the desired results and attributes that failure to the fact their ideas of reality and human nature are wrong. Speaking of Robespierre, Alain Finkielkraut (1987) explains the fatal error of the French revolutionaries. They wanted to establish a society based on reason while forgetting that reason is the product of society. The result was the contra-revolution and the reign of Napoleon. A cybernetician would claim that the purpose of a system is what it does (Beer 2002). Most people would on contemplation of historical outcomes conclude

that what the system did was certainly not what was intended! If we misunderstand agency, then likely we misunderstand history as well.

Professor Karl Popper can also be cited, when he wrote that Karl Marx and he agree that Utopian plans will never be realized in the way they were conceived, because hardly any social action ever produces precisely the result expected (Popper 1945).

Sophie Could it be that humans are bad at predicting countercontrol?

Lee People are bad in prediction. But they are very good in explaining and giving names. They call it unintended effects.

Sophie So socio-engineering projects are problematic. What about geo-engineering?

Lecturer Yes. Let's discuss projects such as the Stratospheric Controlled Perturbation Experiment (Golja et al. 2021). Do you think that scientists, with their proven inability to predict the outcome of interventions, can predict what happens if we block sunrays from reaching the Earth's surface?

Lee SCoPEx is small potato. We need to think of the consequences of large scale projects. Like Mao, when he eradicated sparrows on farmland because he thought they were stealing the harvest: only to learn that the birds kept the land free from insects after introducing famine in his country (Shapiro 2001). Or like the Soviet engineers relocating water flows for agricultural projects in Central Asia that turned the Aral Sea into a desert (Micklin 2007). Can the geoengineers realistically work out the probability of a Black Swan where the consequences of banning sunlight during a joint event of low Sun activity and high volcanic activity are computed? What about the consequences of depleting algae in the oceans from sunlight?

Sophie Is working out counterfactuals even part of our academic education?

Professor I see only one possible solution for mankind, which is to do less. Less holidays, less consumption, less trade, less population, less flying, …

Man Sorry, but may I interrupt?

Professor By all means, good man. What do you wish to contribute?

Man Uh… nothing really. I'm your taxi driver. Y'all can go to the airport now for your flights home. Follow me please.

End of the conversation.

3. Systemic collapse and the last man

Humans are the apex species whose massive cerebral cortex make them a creature of reason. Once they overcame ignorance and superstition they have mastered the world. Using science, that is, logic and the power of critical thought, they overcame any obstacle: see their roads, their dams, their Large Hadron Collider, the tons of space trash orbiting the Earth. The leaders of mankind are heroes, bending fate to their will and leading humankind forward. The greatest of men make history. Eight billion exemplars of the human species prove their triumph over the mindless and unpredictable forces of nature; science has brought them out of the cave. Every head is bent to the smartphone, unifying a humankind embracing this story of human heroism that was handed down from the Enlightenment through secular humanism, and is encoded in modern social structures: law, medicine, politics, government, the structure of our entertainment, deviance, and sin. We see the power of the Enlightenment also in our personal lives: "make your own luck," "be all you can be." The power of agency, of the ability to purposefully manipulate society and the natural world, mesmerizes us, completely permeates our vision.

The stark and obvious reality is that each human has only very few degrees of freedom. People want to live, have consanguineous and fictive kin alive, and to this end employ culture to access a share of the material social surplus. No human can survive without a complex net of culture. Even the simplest human groups in the last 70,000 years (or before; see Diez-Martín et al. 2016) had a tool kit of culture which included not only dozens or hundreds of different tools, but also a rich and replenishing oral storehouse of cultural knowledge, which helped them find social cohesiveness, regulate resources like mates and food and raw materials, and approach ecological challenges with a rationale, and a plan, or "agency" to give it a subjective name (Bar-Yosef 2002).

Culture shapes us both physically and cognitively. From the pebble to the smart phone, culture improves our likelihood of survival, and so those in our network. The energy organized by humans surviving drives the self-organizing system, recreating itself anew with each human action. Every "action we take" to preserve ourselves preserves the system and at the same time, every act within the system has inevitable, unintended and unforeseeable consequences. This is not a popular insight and scholars like Stephen Jay Gould (1994) have struggled hard to get this point across:

> *Homo Sapiens* did not appear on earth, just a geologic second ago, because evolutionary theory predicts such an outcome based on themes of progress and increasing neural complexity. Humans arose, rather, as a fortuitous and contingent outcome of thousands of linked events, any one of which could have occurred differently and sent history on a different pathway that would not have led to consciousness.

Just like nature cannot design evolution to arrive at consciousness, humans cannot replace or modify culture with a product of human cognition. Because the system is ultimate context, it constitutes the micro and macro lived in world, our efforts are necessarily driven and subsumed, and as a result, we can never change the system as we wish. Culture truly is unpredictable and mindless from our perspective: it might as well be the mind of God. What science does know is that culture has grown exponentially, probably even faster than human population. The system kicked into overdrive with the end of the glacial maximum. Just as fire was necessary to sustain life for a small hunter-gatherer society, the computer, the fire of electricity, is necessary to sustain our billions. Culture is a near equilibrium dissipative system, which means it dances on a flow of energy from humans acting in their few degrees of freedom[3] (Pennestri et al. 2005); if they fail, they die. It converts the natural world into humans, and it continues because it does so. However, if people die, culture dies, because its energy decreases and its efficiency declines as networks disappear (Tiezzi et al. 2008).

[3] By "degrees of freedom" we use its common meaning as the number of independent choices, or variables, available. In the complex human life we can see that each choice precludes others, and if choices are made too far outside normal human parameters, extinction might follow.

The sun is the ultimate master of the system. It powers the weather and grows the crops and for the last 12,000 years humans and the system have bloomed under it. The system has always had to conform itself to the weather. Now, the weather is about to get nasty. Humans have filled the seas with carbon and plastic, salted the land and fouled fresh water, pulled fossil sunshine from the ground and used it to drive carbon in the air. The need for abandoning use of fossil fuels is pressing but there is no alternative (Kampen 2017). Non-fossil fuel sources produce far less usable energy than fossil fuels (York 2012). It is very complicated to switch to a variety of non-fossil fuel sources, particularly when they all require fossil fuels to produce (Gross 2020). Going to alternative energy does not end the problem of too many people using too many resources (Arutyunov, Lisichkin 2017). And even if humans could replace fossil fuels for energy, they still need them for lightweight materials and road surfaces, the lack of which will further increase the energy burden. Add, or subtract perhaps, the energy requirements of increasing climate change, food shortages, and resulting political and social unrest that are both cause and symptom of the system losing complexity (see e.g., Jun, Sethi 2021). There is no possible systemic response to the loss of so much energy. Our numbers are too many for the available culture to sustain. We might as well pray.

Afterword

One of the authors of this essay had the privilege of taking a seat just behind the professor and the lecturer on the return flight to Brussels. We do not want to deny the reader the essence of the conversation he could not help to overhear below.

Lecturer So, would you say that all hope for a sustainable society is lost?

Professor Why do you think so? Haven't you noticed that our dear students were fully stuck in the paradigm of historical determinism?

Lecturer Well… surely there are no good scientific arguments against that perspective. Main critique of historical determinism emphasizes the essential inexplicability and unpredictability of historical events (Nagel 1960). But failing to identify the cause of a cause is not a reason to

disqualify the identified cause as a cause. Moreover, determinism doesn't mean predictability. In quantum physics, epistemological and aleatory uncertainty are in many cases irreducible but that is no reason to dismiss of determinism. And even when certain accounts of history depend on perspective, the position that *everything* depends on one's perspective cannot be maintained. I mean, you and I can have radically different views on why people can fly, but we both go down with this plane when it crashes.

Professor You misunderstand me. Recall that Robert Jones Shafer (1969), who is after all still an authority in historic method, recognizes three possible approaches for viewing history, which we can call progressive, cyclical, and regressive. We have only scratched the surface of the regressive method advocated by Plato and the Bible, namely that society, or should I say "culture," is ever deteriorating. We can pick up the pieces, you and I, and write an essay on how culture is progressing to an ever better situation. Is there not a significant decrease of the number of people who have to live on a dollar a day? Is our state of technology not marvelous? Have we not defeated the corona virus by inventing a vaccine in less than a year? Are we not able to fly a drone on Mars?

Lecturer Yes we can. At the very least an optimistic view will have a higher probability of actually getting published…

Professor You can be sure. Also, we must deviate from an approach rooted in Organicism which necessarily assumes a final stage like "the end of man" or similar. By far, the most popular root metaphor (see Pepper 1942) is Mechanicism, which defines the most important category as "Location." Seeing is believing, or as Pepper said, "whatever can be located is real, and it is real by virtue of its location." Even time can be understood in terms of the location of the hands of a clock, grains of sand in an hourglass, or position of illuminated LEDs. The problem of agency is invisible in this metaphor because causality is cemented in its definition.

Lecturer Woohoo, Pepper's world hypotheses. Now there's a work that we certainly cannot cite. Imagine, not even Lakoff and Johnson (1980) who "discovered" the metaphors we live by in the early 1980s cited any predecessors like Stephen Pepper or Richard Brown (1977). Such a shame, but if a single book contains a complete survey of metaphysics you're just making too many scholars jobless… Nonetheless, I agree that Mechanism has never ceased to be popular. I recently came across an interesting application in engineering where it is called the STA (Space, Time and Attitude) analytic model (Kaal 2017). It invokes the root metaphor of Mechanicism by assuming that space, time and attitude are the foundation of intentionality.

Professor The applications are endless. Look at this copy of the Wired Magazine, when it says "Who knows why people do what they do? The point is that they do it and we can track and measure it with unprecedented fidelity" (Anderson 2008). The article explains how Big Data are going to make the social sciences obsolete. In our business, if you want to get research funding you have to design projects that in the end have a clear list of instructions to follow up in order to achieve goals. We call them policy advice. Now, who are we to claim that politicians have no agency? Listen, let's file for a project where we study the possible impact of Big Data and machine learning on the sustainability and resilience of society…

Perhaps much to the regret of our readers, but the author ceased to follow up on the conversation as it unfolded from this moment.

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