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**T**he COVID-19 (coronavirus) crisis has pitched the world into a period of fear, turmoil, and uncertainty. But questions are already being asked about what sort of “new world order” will emerge from the disruption, upheaval, and sacrifice. From phone tracking to governance by decree, even in supposed “democracies” we are witnessing the emergence of increasingly authoritarian regimes with much less scrutiny and accountability than before, with less respect for minorities and human rights than ever, and even less concern for science, expertise, and the rule of law. Will the means to justify the ends (of eradicating the virus) further empower those already in power, and entrench the privilege of those already privileged? Or, will there be an irrevocable shift in the dominant social, economic, political, and financial systems away from rentier economies (1) to more equitable and sustainable ones (2), and mark a transition to a world that also recognizes that anthropogenic climate change is another existential threat that needs to be urgently addressed?

In the hope of such a transition, this article is based on the observation that we are approaching the anniversary of the publication of three foundational books. Each of these books described and analyzed a way of conducting

# Apologies for the Inconvenience

*(But Please Use It Wisely)*



human affairs, based on deep social knowledge and a resourcefulness rooted in a sensitive awareness to the local environment and the need for its sustainability. Building on the foundational insights of these three books, I argue here that some collective behavior that supports sustainability entails some individual inconvenience: many small acts of environmental kindness require some thought, effort, or consideration (e.g., sorting the recycling, walking instead of driving to improve air quality, using refillable bottles to reduce plastic pollution, etc.). However, people across the world today are enduring

iting the fundamental message of these three publications and working through their implications for sustainability in the Digital Society.

### Three Anniversaries

The anniversaries celebrating the publication of the three foundational books are as follows.

Firstly, 2022 marks the centenary of the publication of Branišlaw Malinowski's *Argonauts of the Western Pacific* (3), a pioneering work in anthropology and ethnography. Secondly, 2021 marks the 30th anniversary of the publication of *Ancient Futures* by Helena Norberg-Hodge (4), a trenchant critique of the

impact of industrialization and globalization on a relatively isolated culture. Thirdly, 2020 marks another 30th anniversary, the publication of Elinor Ostrom's *Governing the Commons* (5), the original analysis of sustainable common-pool resource management based on self-governing

institutions. The fundamental contribution of this latter work to political economics was one of the reasons that Ostrom was awarded the Nobel Memorial Prize in Economic Sciences in 2009.

Each of these pioneering works was founded in the detail of extensive and careful fieldwork.

### Fieldwork

Malinowski undertook fieldwork in the Trobriand Islands, an archipelago on the eastern coast of New Guinea in the western Pacific Ocean. As part of this work, he observed the Kula ring; this was a system of exchange between islanders based on trading non-use, but nevertheless socially valuable, artefacts, like necklaces and armbands. An islander would get in a canoe, paddle at some risk to a neighboring island,

and present the artefact to another. This would serve three purposes. First, giving the artefact bestowed prestige on the giver, while possessing the artefact bestowed prestige on the recipient, and enhanced the social status of both. Second, possession was temporary, and would oblige the recipient to get in another canoe, paddle at some risk to a neighboring island, and present the artefact to yet another islander (it was considered particularly "poor form" to retain a gift for long; those who did quickly acquired a bad reputation). Third, the ceremonies that accompanied the exchange served to strengthen partnerships and relationships not just between islanders but also island communities, and established mutual assurances of a friendly reception, reciprocal assistance, and joint protection.

Norberg-Hodge's fieldwork was conducted in Ladakh, a mountainous region of Kashmir in India between the Himalayas to the south and Tibet to the north. Her book covers a continuous period of about 15 years but is divided into three parts. The first part is an anthropological study of a society and a culture that not just survived, but even thrived, in an inhospitable environment. It is a sympathetic analysis of human ingenuity (for example in the deployment of limited local resources for food, fuel, construction, etc.), human adaptability (for example, living at high altitude and with extreme weather), and human values (for example in attitudes to life, death, time, and what constituted "wealth"). However, once the financial and technological barriers to travel and transport were reduced, the region became more accessible to trade and tourism, and consequently more economically viable for the extraction of its natural resources, particularly water. As a result, the second part

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significant inconvenience caused by lockdowns, even voluntarily confinements, because the perception of the threat is of sufficient magnitude and immediacy. Therefore, the challenge is not just to get more people to recognize that climate change poses just such a threat, but that tolerating a small amount of inconvenience (relatively speaking) is actually a contribution to the much greater good of defusing that threat.

This special issue explores the potential role of Artificial Intelligence (AI) and other digital technologies in helping to deal with small-scale inconvenience in pursuit of planetary-scale collective action. Here I provide some context for the opportunities and challenges of leveraging digital technologies to help manage the inconveniences of tackling the climate crisis, by revis-

is a sorrowful critique detailing the impact of “Western” culture, values, attitudes, and behavior on the one hand, and economic development on the other. The third part tries to reconcile the two competing forces of tradition and progress: how to get the best out of both of them, i.e., leveraging the advantages of progress (e.g., in health and education) and tradition (e.g., in re-use and sustainability).

Ostrom’s fieldwork, in contrast to that of Malinowski and Norberg-Hodge, was much more widely distributed, both temporally and geographically. Her primary concern was common-pool resource (CPR) management, and its sustainability at scale. A theoretical analysis using game theory made predictions that were reproduced in laboratory experiments, i.e., that without some form of coercion, a “large” group of people would act in such a way as to deplete (exhaust) a shared resource in the short term, even if that was in no-one’s interest in the long term. However, this was *not* the outcome that was inevitably observed empirically, based on observations of common-pool resources as diverse as forests, fisheries, and irrigation, in countries as diverse as Spain, Japan, and America, across centuries. Ostrom observed that it was the mutual agreement of self-governing institutions that specified constraints on behavior that were voluntarily observed and enforced; however, it was not just the institution per se that made the difference: an institution had to exhibit eight distinctive features for successful sustainability of a resource, which did not occur if one or more were missing. Ostrom then went one step further, and recommended that whenever faced with a CPR problem, instead of hoping to *evolve* an institution with the necessary features, it was preferable to *design* (or *supply*)

an institution with those features already present.

### Knowledge Regression

Apart from their obvious humanity, what these books have in common is the documentation of deep social knowledge. In the case of the Trobriand islanders, it was how a gift economy, based on the giving of gifts, the identifying rituals accompanying that giving, and the memories and semantics associated with the gift, could bind together disparate groups separated sometimes by hundreds of miles of hazardous ocean. In the case of the Ladakh, it was finely-tuned attentiveness to the local environment and inventiveness in applying the produce of that environment that enabled them to survive in harsh conditions. In the case of CPR management, it was how communities could confound the seemingly inexorable logic of an operational-choice public goods game with meta-level political games of collective and constitutional choice. Without anything like the mathematical ability or insight of Nash, these communities were still able to escape the apparent inevitability of a Nash equilibrium.

It might have been thought that with 100 years of development, the invention of the Internet, and the partial realization of the potential of Artificial Intelligence, that new applications would harness this deep social knowledge for the benefit of humankind. Rather, the opposite seems to have happened: it appears that a kind of knowledge regression has occurred instead.

From a 21st century perspective, it is somewhat unfortunate that much of Malinowski’s language made reference to the culture that

he was studying as “savage” or “primitive,” under the assumption that “Western civilization” was patently more advanced. For sure, the gift economy of the Kula ring was based on a different kind of transaction than a purely monetary exchange, and created a different kind of wealth than financial wealth: it brought social, psychological, and spiritual wealth instead. But are economic attitudes so much more advanced that enshrine maximizing shareholder returns (rather than a contribution to the public interest or common good) as a legal duty of companies, that promote the pursuit of personal property as the single worthwhile objective of human endeavor, and that ingrain the idea that social status and job-worthiness are not just associated



**Political denigration of non-financial forms of wealth have been accelerated by new technologies.**

with, but defined by level of personal income?

Indeed, the political and socio-economic denigration of non-financial forms of wealth have been accentuated by new technologies giving rise to Internet-based business models underpinning the “sharing economy” and the “platform economy.” The Olympics (summer and winter) happened only to one city every four years (an unaccountable invasive ultra-national force displaces people, despoils an environment and enriches itself through real estate deals, favorable tax arrangements

and economic cleansing (6)); now any trans-national “big tech” company can stick its corporate proboscis into the local economy of a city or a town and drain the lifeblood from it (what has been called neo-colonialism (7)). While some pushback is being observed, much social, generational, and environmental damage has already occurred.

This damage can be specifically identified in the obsession with markets in the energy sector, and the reduction of individual consumers to atomized revenue streams. For example, one U.K. energy company has set up a contract whereby their “customers” can control when they use energy. Because of the nature of the market, the physics of electric

storage mechanism) in order to take most advantage of extreme conditions. Secondly, the customers have to be time rich: they must have time to pay attention to heavily itemized bills, track a regularly changing price, and react when conditions might be financially favorable. And third, customers have to already be knowledge rich, they need to have access to education and social networks to order to find out about, use, and benefit from this contractual arrangement. However, while it is possible to admire some of the ingenuity that has gone into creating this market edifice (or artifice), at a time when an estimated 15% of U.K. households are suffering from fuel poverty,<sup>1</sup> one can reasonably ask exactly what problem is this solution actually trying to solve? Where, one might also ask, is the social and environmental justice; where is the community binding and the inter-generational binding?

The divergence of some sharing economy applications from the original intentions and how they could have ideally operated, to how they have operated in practice, has forced individuals and communities into “survival mode.” People in survival mode feel excluded, may be reluctant to share what little they do have, and may not see the potential benefits of investing in cooperation, so it is correspondingly much harder to encourage, incentivize, or motivate these people to act in the collective interest. While the

big tech companies behind sharing economy applications have reduced people to survival mode, those behind social media applications have increasingly aggravated (or allowed the aggravation of) this situation. They have been responsible for systems that are, in some respects, actually extremely creative — especially at creating *anger*.

### Manufacturing Anger: The Outrage Industry

Besides the deep social knowledge of these supposedly “primitive” societies, another feature that they appeared to have in common was a particular restraint on emotional attitudes, in particular anger. For example, in Ladakh, the term *schon chan* (“one who angers easily”) was a particular insult. The effect of Ostrom’s institutional design principles — quick, cheap, and easy access to dispute resolution — was presumably to moderate emotive overreaction and to prevent escalation of conflicts through retaliatory retribution. In fact, this control over anger and temper can be observed in many societies, especially those in the harshest conditions, where the survival of all is dependent on the collective. For example, Briggs (8) describes how losing one’s temper was seen by the Eskimo tribe with whom she lived as an act of selfishness and a loss of reason (*ihuma*), and a cause for an individual to be ostracized, because an inability to maintain self-expression within acceptable boundaries could not be trusted not to threaten the collective.<sup>2</sup>

<sup>2</sup>Less rigorously, from an anthropological perspective, AA Gill (a Scotsman) describes the English as “naturally, congenitally, collectively and singularly, livid much of the time... Perhaps aware that they’re living on top of a keg of fulminating fury, the English have, throughout their history, come up with hundreds of ingenious and bizarre ways to diffuse anger or transform it into something benign. Good manners and queues, roundabouts and garden sheds, and almost every game ever invented from tennis to bridge...” (9).



## Anger will not bind communities together to engage in collective action to address climate change.

cal generation and distribution, and the vagaries of stochastic generation from renewable sources, during storms, for example, the company will actually pay people to use energy. Extreme weather events are then used as an opportunity for some to charge their electric vehicles and make money, even while storm-associated flooding is causing considerable disruption and hardship for others.

Beyond one person’s financial gain from another’s misfortune, this model is predicated on several assumptions. First, the customers have to already be asset rich: for example, they must either have deployed solar cells or other renewable energy generator, or own an electric vehicle (or some other

cal generation and distribution, and the vagaries of stochastic generation from renewable sources, during storms, for example, the company will actually pay people to use energy. Extreme weather events are then used as an opportunity for some to charge their electric vehicles and make money, even while storm-associated flooding is causing considerable disruption and hardship for others.

<sup>1</sup>UK fuel poverty statistics are no longer available as a whole from the Department of Business, Energy, and Industrial Strategy (BEIS). The reasoning is that fuel poverty is a devolved issue and each nation has its own definition.” Energy Action Scotland ([https://www.eas.org.uk/en/fuel-poverty-across-the-uk\\_50535/](https://www.eas.org.uk/en/fuel-poverty-across-the-uk_50535/)). Methodologically: fair enough. But still: kind of convenient for those who do not want to draw attention to such statistics.

However, one of the perhaps counterintuitive outcomes of increased connectivity through the development of Information and Communication Technology has been to increase anger and cause polarization and fragmentation, rather than bring people together. This could have been predicted, given the prevalence of flame wars in the early days of Usenet. Usenet was a Unix-based computer-network communications system, accessed from a Unix command-line client such as `rn` (“read news”). This enabled a user to access newsgroups and post their own opinions, which can be seen as a forerunner to Internet forums and chatrooms, and social media platforms enabled by the World Wide Web.

One of the features of Usenet newsgroups could be these flame wars, in which two users would verbally assault each other (the “flames”), and perhaps other users would take sides and pile in afterwards. Curiously, there was an inbuilt self-control mechanism, called netiquette (net etiquette): the limits of self-expression in these hostile exchanges were somehow, and at least to some extent, bounded, and there was mutual understanding of, and respect for, these boundaries.<sup>3</sup> These 1990 flame wars seem positively courteous from a 2020 perspective, where trolling, cyberbullying, provocative selfie-ing, twitter-storms, revenge porn, scientific disinformation, and various other forms of anti-social behavior appear to be rampant, uninhibited, and unchecked. Furthermore, there seems to be no interest in regulating it: “there’s gold in them thar twitter storms.” There is also evidence that anger is being stoked by infiltration

<sup>3</sup>There was also a newsgroup, `alt.flame`, where users could go just to read flames, or flame each other. It might not have been everyone’s definition of fun, but it was a useful sink for those so inclined.

of social networks and covert funding of activists on both sides of a socially divisive issue (10).

At a time when climate change is effectively creating an existential threat to all of humanity, such that it could be said that the prevailing environmental conditions are as dangerous and inhospitable as those confronting the Trobriand islanders, the Ladakh, and the Eskimos, the outrage industry and the willful manufacturing of anger is only magnifying the threat. Anger is not going to bind people and communities together in order to engage in the collective action necessary to confront the threat.

### Inconvenience

It might be suggested that social media platforms could constructively counter the creation of anger by trying to create its opposite. But according to Plutchik’s wheel of emotions (11), the opposite of anger is fear. However, fear is unlikely to help bind communities either: it is as bad that communities should fear diversity, or consider diversity to be a threat (i.e., on the belief that communal life is a zero sum game, and that the reduction of one person’s inequality necessarily implies another person’s loss of prestige or privilege).

It could be better argued that there is no opposite of an emotion, only its absence. Therefore, in addition to the codification of deep social knowledge (12), platforms for enhancing social coordination could take two further steps in using Artificial Intelligence (AI) in their approach to creating social good and mitigating climate change. The first is to dampen and diffuse anger (as opposed to manufacturing outrage, or data harvesting, machine learning, and targeted advertising).

The second is that people have to accept a little *inconvenience*.

It might seem parochial, almost to the point of absurdity, to be arguing that people should accept a little in convenience in their lives, at a time when the Covid-19 crisis has caused the entire planet to deal with inconvenience on a personal, national, and global scale that is, by many accounts, “unprecedented.” Clearly, though, faced with a palpable, and immediate, existential threat, it turns out that some of us, at least, for a while, at least, can tolerate a lot of inconvenience. Dealing with the less immediate, but no less remorseless, existential threat of climate change requires a proportional acceptance of inconvenience. So, in whatever way the Covid-19 crisis works out, three conclusions must be drawn: first, the existential



**A slight inconvenience is a small price to pay for preservation of our shared planet.**

threat of climate crisis will not have gone away; if anything, its contours have been thrown into even starker relief; second, we cannot persist with political leadership that in its relentless pursuit of power finds that is easy and popular to be anti-truth, anti-science, anti-evidence, anti-knowledge, and anti-expertise; and third, we cannot simply go back to the social, political, and economic systems that existed before and carry on regardless. All this means accepting some inconvenience, with respect to what we want to hear, and to what we want to do.

It is not surprising that Participant Media’s documentary about climate

change was entitled “An *Inconvenient Truth*.” The truth about climate change pushes people out of their comfort zones, whereby they have to actively engage with their infrastructure and with other users. It recognizes that an alternative to the invisible hand of the market, for example the visible hand of the commons or the cooperative (cf., (13)), requires the investment of some effort.<sup>4</sup> It forces administrators to pay attention to detail, to educate themselves and their electorate, and to make, explain, and justify hard choices (as opposed to satisfying “a perverse desire – to remain ignorant” (15)). Above all, perhaps, it obliges technologists to consider the social and environmental impact of their products. Following (16), instead of feeding technology users’ “inner chimp” with the quest for likes, kudos, and attention, another approach would be to lower transaction costs so that people will engage with an activity that would be socially beneficial. For this, a different type of mind management is required, in order for people to tolerate interrupts and pay attention with their frontal lobe – the bit of the brain that requires the exercise of cognitive skills.

But then, why not use Artificial Intelligence (AI) to support this: arguably this is what, for example, a SmartMeter should be for. It should not be a device for utility companies to determine patterns of consumer usage for price-setting, but a partner in helping people make their

<sup>4</sup>As Alexandra Schwartz wrote of her experience of a food co-operative in New York: it was “claustrophobically crowded, illogically organized, and almost absurdly inconvenient” (14).

contribution to ameliorating climate change. The SmartMeter should be the one to say “good job,” or, when generating an interrupt – “apologies for the inconvenience (but please use it wisely)...”

In Robbins’ recent article (17), he suggests that *convenience* has almost been elevated to a moral value, alongside rights and justice. But, especially for those who are already comfortable, a modicum of *inconvenience*, with a reasonable explanation of why, might make a far more substantive contribution to building communities to address climate change than taking advantage of a marginal change in the unit cost of electricity. Furthermore, those of us well-off in the “developed” world, could perhaps stop looking at alternative cultures and thinking of them as backward, and follow Norbert-Hodge’s prescription: recognize that there are some values, craft, skills, and practices – some *knowledge* – that we have perhaps lost sight of in our relentless pursuit of profit, comfort, and convenience. Part of that knowledge is knowing that some inconvenience is the price we should pay to reconnect ourselves to our shared humanity, and to preserve our shared planet.

*Rain in the daytime! Christ and Wei, how strange! And how inconvenient! But there was something pleasing about it too. Something natural (18).*

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