

**Some abuses of “science”, logic, and authority
illustrated from responses to the COVID-19 threat
and especially in the Dynamic Systems Models being used by policy consultants.**

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Version date 9 August 2020

Over the past few months, I have been greatly troubled by:

- I. The over-simplistic models – ie the lack of complexity within – many of the models which have been put forward to predict the spread of COVID-19 and assess the probable effects of a number of possible interventions. Many of these defects have arisen from deficiencies in scientific *method* ... ie from failure to undertake sufficient real-world explorations to understand what is going on before generating models. But, more basically, they arise from an image of science in which a single cause is related to a single outcome without reference to such things as recursive feedback loops within the causal chain and interaction with extraneous inputs. That is to say, they arise from the acceptance of non-systemic (ie reductionist) science.
- II. The failure to include *within the models* generated to inform policy the assessment of the multiple and diverse *outcomes* which might arise from proposed variations in inputs to the models. For example, so far as I know, there have been no attempts to include *within the models* assessment of the effects of UK Lockdown on deaths (and other outcomes) arising from failure to treat other diseases within the UK or the effects on starvation, destitution, and death in such places as Bangladesh – never mind wider effects like facilitating the introduction of a police state¹. Nor have they included such things as the recursive effects of using the outcomes predicted from “worst case” scenarios to create a climate of fear and panic which has recursively provoked a demand for ever more intrusive intervention. I have Googled for such studies without success². The focus remains on the spread of COVID-19 as a single outcome. Even so, the discussions often proceed without adequate discussion of the relationship between alternative measures of outcomes themselves and little examination of assumed links in the chain such as whether the disease is transmitted via the atmosphere or via such things as hand contact with surfaces, or whether face masks help those who wear them to avoid catching the disease or transmitting it to others. All of this is very strange among a network of people which views itself as a community of systems scientists – because a central tenant of non-reductionist systemic science is that it is necessary to situate the study of single-variable, single-outcome, studies in the wider context within which those relationships are studied³.
- III. Failure to examine the quality of the basic data and measures utilised.
- IV. Failure to examine the validity of assumptions about causality.
- V. Failure to consider context. Such contexts might include the non-feasibility of pursuing isolation, safe distancing, and quarantine policies in the slum districts of Mumbai and the knock-on implications on the impossibility of pursuing that policy

¹ I am deeply indebted to an internet friend, who nevertheless wishes to remain anonymous, for his contribution to an on-going discussion of some of the issues discussed here.

for the probable effects of pursuing such policies in surrounding regions. Perhaps more importantly, the failure to include within the models the effects of interactions with the pervasive fascism (the belief that one is entitled to impose on others that which one believes to be good and right regardless of the wishes of those concerned and the wider impact on society) which has grown up in many societies.

VI. Inadequate discussion of the dangers of introducing a police state especially as a result of silencing organisations which have traditionally been concerned with defending civil liberties and free speech.

VII. Perhaps most importantly, failure to acknowledge, let alone study the nature of, and role played by, the flow of emergent, self-perpetuating, self-elaborating, and self-extending simplistic mental viruses, or memes (networks of beliefs), concerning how to fix a particular problem (such as how to fix COVID-19 or the problems of the educational system by introducing “high-stakes testing”) across national boundaries and their interaction with each other.

It seems to me likely that the memes [simplistic, catchy, single-factor, non-systemic, mental viruses], that are spreading across the globe like wildfire are, collectively, much more deadly than COVID-19. (Such memes include the meme [mental virus] that it is vital to promote “economic development” regardless of the long-term ecological consequences of so doing, and the meme that people should be protected from all “adverse experiences” [AKA “Wokeism” or “Safeism”] in such a way as to deprive many people of enjoyable and developmental experiences).

It seems to me not coincidental that both the biological COVID-19 virus and the meme relating to how to fix it should have emerged in a regime which is notorious for imposing draconian policies in pursuit of single-value outcomes regardless of their collateral damage (consider the “cultural revolution” and the millions of deaths which ensued and the current quest for “economic development” regardless of the ecological consequences).

Whatever about that, it has been terrifying to see the way in which governments around the world have been able to both recruit local “scientists” who produce evidence to support these externally-generated memes and policies and stifle open discussion in the scientific community.

Equally terrifying has been the way in which the pervasive fear of infection (triggered by the diffusion of worst-case scenario “scientific” predictions) has built on the realistic culture of fear of de-platforming and “cancelling” that has been visited upon would-be dissidents and heretics. (In which context it is important to note that this fear stems from the attacks that have been made on anyone who advances views contrary to the current Safeism [it is the duty of the state to shield everyone from verbal abuse and other adverse experiences] meme that has come to dominate some sections of the social media and wider society⁴.)

One may note also the reduction of public debate to trading in sound-bites – such as accusing those who draw attention to longer term and more distant (Bangladesh) undesired and undesirable consequences of the lockdown policies of “not caring about people’s lives” when what is being actually being said is that it is important to care about lives beyond those dying from the virus in the UK. The narrowing of public debate to debate via single sentences posted in the “social” media has been one of the most dangerous outcomes of the arrival of the social media. And those effects have themselves been exacerbated by Lockdown policies which have virtually eliminated public meetings. This cyclical process has delivered even

more power to central agencies – governments and those who control the likes of Facebook and Youtube – to structure and control discussion⁵.

In point of fact it seems that those who are most vociferously promoting the Stay-at-home, Safe-Distancing and Quarantine meme (which has been around since the middle ages with little evidence of its effectiveness) are those who have been most affected by the Safeist (it is the government's job to arrange for me to be protected from all adverse experiences) pandemic and thus become "snowflakes" unable to tolerate, or recover from, threat. Such people have, arguably, become snowflakes precisely because they have been shielded from adverse experiences and, as a result, failed to develop the capacity to tolerate and overcome them. It would seem that these are the people who have been most affected by the "worst-case" scenarios promoted by selected government advisers with a view to inducing compliance with the overall policy. They have become predisposed, through a cyclical process, to calling for the *extension* of the Lockdown and Safe Distancing policies thereby enhancing the perceived threat. Moreover, like those who have promoted other extremist memes like the persecution of religious non-believers, witches, heretics, and those accused of incorrect political thoughtways (China), they have been predisposed to taking the punishment of transgressors into their own hands by pouring abuse on them through the social media, depriving them of the right to speak via that media, or by snitching on them to "authorities".

Because I will be relying on them extensively later, it is useful to mention that this elaboration of the observations I set down in a short note I posted on *eyeonsociety* on the 7th of April (and reproduced as Appendix 1) has been precipitated by four things:

1. A virtual seminar organised by the UK Chapter of the international Systems Dynamics Society⁶, and especially comments made by Erik Pruyt.
2. An OECD paper by Ramos & Hynes⁷ which was brought to my attention by Benjamin Taylor via his Systems Community of Inquiry/Model Report site.
3. Various posts on Youtube, a number of which are brought together in Appendix 4.
4. An extraordinary study by a Swiss Policy Group⁸ which was brought to my attention by a colleague and the main conclusions from which are reproduced in Appendix 3.

Having said that, I must immediately say that, although the items in (3) and (4) provide important *background* to this paper, this paper is *not* about the accuracy of either various predictions made or the effectiveness of current policy: *It is about the uses and abuses of "science"*.

Furthermore, I have to say, while Ramos & Hynes⁹ and Pruyt, in his extraordinary book¹⁰, highlight a range of important issues that should have been considered before formulating policy, they fail to say that assessment of such outcomes *should be built into any Systems Dynamics* models that are used *before* they are used as a basis for policy. More specifically, they fail to emphasise that the kind of single-variable, single-outcome, studies that we have been presented with offend against the most basic principles of systemic science¹¹. As I have argued before¹² and will argue more fully below, a *sine que non* for consideration as a sound basis on which to formulate policy... indeed as a good *scientific* study ... is the study's *comprehensiveness*. It must deal with *all* personal and social, desired and undesirable, intended and unintended, short and long term outcomes of the proposed policies in various contexts. What is good for an individual may be bad for other individuals and society. What is good in the short term may be bad in the long term¹³.

In the remainder of this paper I will amplify the observations made above.

1. The lack of complexity (systems thinking!) behind and within many of the Models which have been put forward to account for, or predict, single outcomes, and the effects of various interventions which might be introduced to mitigate those outcomes.

I have not examined these models in any detail myself, but from a variety of “You Tube” posts and other discussions it seems that the following errors are recurrent:

- Failure to include recursive feedback loops dealing with such things as the emerging immunity to the virus arising from undetected previous infection.
- Variance (in immunity) between individuals within the community. (Such immunity might arise from such things as having fallen prey to an earlier influenza epidemic or genetic variance in the body’s immune system.)
- Failure to subtract the effects of “natural self-isolation” (staying in bed when one feels ill) from estimates of effect of mandatory self-isolation.
- Neglect of context such as the differential age distributions in different areas of Italy, and the variance in policies to cater for the aged (In Italy and China most older people are cared for by relatives whereas in the UK many are in care homes). Other examples include Kim Warren’s fascinating account¹⁴ of the different conditions that exist in two adjacent districts of Mumbai. In the crowded slum district there is no possibility of social distancing, lockdown would mean that people would starve due to lack of income, and restriction of travel would mean that they could not travel to the adjacent wealthy district to find work. (In point of fact the two districts end up in much the same place – learning to live with the virus. It just takes the wealthy district longer to get there whilst, at the same time, inflicting other deprivations on its population.) And the differential interactive effects precipitated by the arrival of the monsoon are dramatically different. And, again, the effects of the absence of a national income support policy would be dramatically different.
- Failure to examine the differential effects of possible interventions on different sub populations such as single-parent families cooped up in high-rise developments¹⁵.

The importance of attending to such “coverage” and interaction issues has elsewhere been illustrated in the dramatic variation in the ability of various models to predict various measures of the depletion and recovery of fish stocks.

The difficulties involved in developing more comprehensive models can usefully be illustrated from the fact that, when key feedback loops are deleted from the diagrams of electronic circuits, engineers experienced in using the diagrams are usually unable to detect the deletions. It is extraordinarily difficult to detect what is *not* there – what has been overlooked – without experimentation. Yet it is not at all clear that there has been much experimentation and evaluation going on in relation to the models that have been put forward to predict the response of the COVID-19 to various possible public measures.

Note the implications of the above. One needs, not just a single model of the way the virus spreads and the effects of intervention, one needs a range of models suited to different contexts – or, put another way, those contexts need to be included within the models.

As illustrated both in Pruyt's presentation to the Systems Dynamics symposium and in a number of the references and videos listed below, the outcomes to be expected vary dramatically with slight variation in the way such things as infection and outcomes are *measured*.

In point of fact, as also illustrated in Pruyt's contribution, models are widely misused by persons who do not understand basic assumptions that lie behind and/or are built into the models. I do not have examples from this domain myself, but I have witnessed endless erudite discussion of the relative merits of one statistical package versus another between people who have not understood the implications of neglecting such elementary things as the size and composition of the samples to which they can legitimately be applied.

I found Pruyt's comments particularly heartening for another reason. I have repeatedly argued that most courses on "scientific methodology" miss what is, in my opinion, the most important contributor to meaningful studies i.e. the importance of undertaking sufficient exploratory work to understand the problem before one begins. Numerous studies have been conducted without including measures of crucially important variables. Thus social surveys – policy "consultations" – commonly consist solely of questions dreamed up by researchers sitting in their offices without including questions which allow respondents to say anything about the issues which most concern them. Hundreds of studies of the effects of using wind mills and marine turbines to harness the movements of the sea have been conducted without including measures of the most important outcomes to be considered ... such as the cumulative effect on ecological balance¹⁶. (From these studies I am convinced that the cumulative effect of the proliferation of such "green" sources of energy will be every bit as ecologically damaging as that arising from burning fossil fuels.)

Nor is this the last of Pruyt's brief comments that deserves to be highlighted. He spoke of the need to experiment with the models to see if they yield conclusions which do not stand up to examination ... and, if they fail, to change the models.

But what I take to be a fundamental critique of the models most commonly applied has been offered by Karl Friston¹⁷

He first notes that a basic assumption of the models which have most commonly been employed is that people can be viewed as falling into one of four states which form a linear sequence – susceptible (S), exposed (E), infected (I) or recovered (R).

Unfortunately, there are many levels of uncertainty behind the estimates of the number of people in each state. How susceptible a person is relates to how many people they come in contact with (determined by their location). How many people are said to be infected has a lot to do with whether infected people are symptomatic, and what percentage have been tested. Infectiousness itself is higher if asymptomatic people can spread the virus, as is the case with COVID-19. And finally, even immunity after infection is not a foregone conclusion.

He continues "The SEIR models (acronym for the four-states model mentioned above) start to fall apart when you think about the underlying causes of the data. (To throw light on the causal mechanisms) you need models that can allow for all possible states, and assess which ones matter for shaping the pandemic's trajectory over time."

As I understand it, he first tweaked those models to include more recursive feedback loops like those just mentioned and arrived at some rather different conclusions¹⁸.

But he then went on to propose Dynamic Causal Modelling (DCM) as an alternative.

I have not delved into this, but I have the impression that his critique relates to the criticisms which Von Bertalanffy¹⁹ made of sociocybernetics and that he offers a solution which perhaps relates to the writings of von Foerster²⁰ and Maturana²¹ on emergent systems.

What he seems to be saying is that, instead of trying to map networks of individual pathways, the way forward is to be found by considering interactions between networks – not the right word – of overlapping and interpenetrating self-organising systems.

Failure to examine the quality of the basic data and measures utilised.

Endless confusion has been created by such things as using hospital deaths as indices of all deaths (ignoring deaths in care homes or in the community) and unreliable procedures to assess whether people are, or have been, infected. This has been exacerbated by varying definitions of, for example, whether people are dying *of* or *with* COVID-19 (i.e. *from* COVID-19 or from some other underlying disease) and directives to do such things as diagnose the latter as the former. Graphs showing dramatic increases in numbers showing symptoms have not been accompanied by parallel graphs showing the base figure of number tested.

As in other areas of policy (such as education and other aspects of health) the numbers have, as Campbell warned us as part of his fundamental critique of the tendency to focus on single outcomes in the evaluation of policy²², often been deliberately manipulated²³ in order to produce a desired effect on funding or other aspects of policy.

The astounding number of state directives which have dramatically influenced the number of deaths attributed to COVID-19 in the UK has been revealed by Davis (2020), while the apparent effect of such manipulations across countries has been discussed by Pospichal (2020).

In the educational area, failure to examine the construct and predictive validity of both the tests used and the nature of the educational and developmental environments with which the outcomes have been said to be related has led to policies which have had devastating effects²⁴ and these have been exacerbated by, for example, the use of norm-referenced tests the scores are calculated in such a way that, however high the overall scores, 50% of the pupils must “fail”. In the health area such effects show up as variations in the definition of poverty over time and between cultures.

Failure to examine the validity of assumptions about causality.

At least early on in the process, it has been assumed without question that such things as quarantine, social distancing, and face masks “work”, and work in the same way across all sectors of the population.

This may lead to serious over or underestimation of the effects of various components of policy. Natural self-isolation when ill may lead to over-estimation of the effects of mandatory

isolation. “Distancing” may work in already well-protected areas but not in over-crowded slum areas. Masks may reduce transmission from one person to another in crowded areas but have virtually no effect in populations in which few people are infected.

Failure to include *within the models* assessments of the multiple and diverse *outcomes* which might arise from proposed variations in inputs to the models.

As noted in the concluding sentences of my introductory paragraph on this topic, failure to include assessment of the multiple outcomes of the processes and policies in question *within* the models being developed²⁵ is actually quite strange given that those concerned often promote themselves as “systems thinkers”.

Perhaps Vandana Shiva has done more than anyone else to highlight the disastrous consequences of failing to study and report multiple (and often disastrous) outcomes of an intervention that is believed to be beneficial by drawing attention to the multiple impacts on food chains and soil fertility applying fertilisers and pesticides to increase crop yields²⁶

In my introductory discussion I referred to the failure to include within studies of the spread of COVID-19 itself and the impact of interventions assessments of such things as the devastation visited on Bangladesh and the slums of Mumbai by UK retailers cancelling orders for clothes. But there are other outcomes that should have been included – such as the effects of various potentially desirable interventions on the anxiety and stress inflicted on the “fragile” generation (who have been shielded from many adverse experiences and thus failed to generate resistance.). And the loneliness and destruction of well-being inflicted on huge sectors of the population. And the suffering and deaths visited upon those unable to obtain treatment for ailments such as cancer.

In this section I would like to underline the importance of exploring some still more elusive outcomes.

One set of these has to do with progressing a drift toward a totalitarian state.

“Safe distancing” and lockdown policies have made it virtually impossible to communicate with one another except by electronic means. This has closed most of the traditional channels through which public opinion was formulated and refined and reached decision takers.

Fear of the spread of what is deemed to be heretical or misleading information has led to the deployment of algorithms to eliminate messages which do not support official policy from Youtube and Facebook.

All of this has combined with a horrifying use of the “social” media to de-platform and “cancel” people whose views do not accord with those of self-righteous, virtue-signalling, members of the public. It is only necessary for someone to say that he or she has been offended by some post for all the harpies from hell – aided and abetted by new laws they have succeeded in getting introduced – to descend upon the “offender”. In this context, the silence of organisations nominally concerned with civil liberties has been extraordinary. One cannot imagine any system better calculated to precipitate the arrival of a totalitarian state. Indeed, it is hard to continue to believe that such a state has not arrived.

Combined with mandatory state monitoring of one's health and movements through electronic contact tracing and CCTV deploying face recognition it is hard to imagine that we have not drifted into an extremely dangerous social situation.

And the feeling becomes stronger as pressures mount to eliminate hard currency and move toward electronic payments “to avoid the dangers of passing on the virus on the surface of coins”. Yet any such move provides the state with the means to monitor all transactions – including payments to disapproved recipients such as “prostitutes” and “subversive” organisations.

Effects on image of science and processes to be used to fund research.

Another set of effects of the policies that have been introduced has been the reinforcement of inappropriate images of both the scientific process itself and the recursive processes involved in the commissioning of research which supports those policies as against research which might have supported alternatives.

In the agricultural area, adoption of an inappropriate framework has led, first, to a dramatic reduction in the variety of species cultivated and their replacement by varieties that are not even capable of reproducing themselves – and thus to emergence of highly vulnerable and non-self-sustainable monocultures. Beyond that they have led to mono cultures of mind (preoccupations and ways of thinking) among scientists. And eventually to monocultures of mind between and within communities involved in agriculture as those concerned become preoccupied with commercial outcomes and forget traditional concerns (such as conservation of the soil) and ways of doing things²⁷.

One can see the same processes at work in relation to coronavirus. One can easily see how a focus on the biological virus has led to the commercialisation of the effort to find a vaccine. Less obvious is the way in which the initial stated objective of slowing down the spread of the virus (“to avoid overload of hospitals”) has been transformed into a preoccupation with *eliminating* the virus and creating a “pure” society. Regardless of how this came about, it has led to the marginalisation of attempts to come to terms with it. It has led to further constriction of thought-ways among scientists about the ways in which research should be funded and the benefits distributed. And to the dismissal of community-based ways of pursuing more sustainable lifestyles.

As Haseltine²⁸ in particular has emphasised, a vaccine won't erase this coronavirus. We have to learn to live with it perhaps in ways in which we have learned to live with such viruses as AIDS, Polio, and 'Flu ... or at least confine them to Yemen, South Africa, and South America.

I have elsewhere²⁹ discussed some of the effects of adopting the thought-ways of non-systemic, reductionist, science in educational research and social policy in some detail.

They lead to monocultures of mind, the destruction of diversity, to failure to foster the talents required to evolve a sustainable society³⁰, and deep intrusions into home and community life to enforce the commands of the state³¹.

It is worth highlighting the ways in which the policies being pursued in relation to Coronavirus are reciprocally enhancing that destruction.

The closing of schools has led to an even greater emphasis on cognitive “knowledge” as transmitted and assessed by computers and the virtual elimination of efforts to nurture wider aspects of competence. It has led to attempts to focus parents’ attention on these things in such a way as to further divert them from their unique and irreplaceable role in nurturing wider aspects of competence and confidence in their children³².

It has led to the strengthening of the self-perpetuating cycle of social hierarchy as many low status children do not have access to computers.

Even as we exit lockdown it is extraordinary to see how the policies being proposed for schools³³ have resulted in teachers having even more control over children’s play and access to books.

It is hard to imagine anything that could better illustrate the abuse of science, logic, and authority³⁴.

A terrifying impact on my implicit world view, trust in fellow citizens, and my very “personality” itself.

A, for me, terrifying, outcome of the policies which have been introduced in the name of halting the spread of COVID-19 which I have not seen mentioned anywhere else has been the destruction of my implicit world view³⁵ and sense of self.

They have seriously challenged my implicit lifelong assumption that, in the end, sense will prevail. **I am currently unable to recover a youtube interview in which someone like Young or Hitchins says something similar.**

In this context it has been terrifying to see how easy it has been for “authorities” to create a climate of fear and then harness that fear to lead people to march toward their own destruction. Not only have people actively participated in this process, they have regularly called for the extension and elaboration of the policies and taken it upon themselves to personally elaborate and enforce some of them.

(One has, of course, seen the same process at work in relation to the creation and perpetuation of wars in such places as Iraq and Vietnam ... the difference is that, in those cases, most of the destruction was inflicted on others.)

More specifically, it has been deeply distressing to see how easy it has been to use this fear to legitimise the destruction of civil liberties (eg the right to speak out against government policy or mount a demonstration) and the release of a disposition enforce compliance in the most punitive way possible. It has been alarming to see how few have examined the legitimacy of government claims let alone protested against those policies.

But these are lessons about the workings of the world.

More disturbing, and more difficult to discuss, have been the effects on my personal psychology. Not just my feeling of well-being ... but somehow something deeper.

My image of who I am and my sense of control of who I am has been deeply affected.

I have long resisted the notion that schools, governments, and other authorities have a right to tell me who I am and what I may or may not do. And I see such resistance as fundamental to stemming the abuse of authority to command such things as marching to war or insisting that we contribute to the destruction of the planet by switching to “green energy”³⁶.

I do not wish to be “shielded” from the virus in the way governments around the world have proposed not only because those measures impose such inordinate harm on others but also because of their “collateral” effects on *me as a person*.

I do not wish to be “shielded” from (unlikely) death from COVID-19 if it means that I cannot enjoy important things in my life. I did not wish to be “shielded” from the chances of getting HIV by having my favourite venues in Amsterdam closed down. Nor do I wish to be protected from the possibility of the recurrence of various unfortunate things that have happened to me in Amsterdam, New York, and Bangkok by having those areas closed down. I do not wish to be deprived of my right to choose to die by a method of my own choice by do-gooders sealing off access to drugs and bridges and banning the sale of helium hoods.

I experience restriction of these things as an abuse of my autonomy, of what makes me a person ... a human being as distinct from some other animal ... my very being.

This is not an insignificant outcome: It is a deeply destructive outcome of the policies.

When Scotland’s First Minister’s spokesperson said that Mrs. Sturgeon had always said that she was unwilling to relax restrictions if there was any risk I descended into a state of fury.

What *is* she talking about? It is not a risk but a certainty that continuing the anti-coronavirus policies that are being pursued all over the world will visit discomfort, death, and destruction onto millions of people in the UK and elsewhere.

These are effects, not of COVID-19, but effects of policies which those concerned have chosen to implement.

How *could* one allow one’s life to be determined by the pre-occupations and tunnel vision of such a person? Yet billions of people have not merely permitted it but embraced it and elaborated it. It is the process which led so many to follow Hitler and others who have led us to war.

This is not a trivial abuse I am complaining about. It amounts to serious destruction of my humanity, my very reason for existing. It is an incitement to rebellion, and the fact that there is no sign of such a rebellion provokes in me deep anxiety about the future of our society.

Conclusion to this section.

It may appear that I have lost the thread and digressed into a number of issues which may or may not be important in themselves.

But what I am saying is that systemic attempts to evaluate the outcomes of alternative policies must include evaluation of their effects on such “intangible” but vital outcomes.

It may seem absurd to ask that assessments of such “intangible” outcomes are built into the models that are used. But unless that is done, those who generate policy cannot legitimately claim that their actions are based on science. It is, of course, true that, even if we had measures of these outcomes, we would be in no position to quantify their interaction. But this should not be used as an excuse to omit them. A collection of systemograms would be better than nothing.

Inadequate assessment of the dangers of introducing a police state especially as a result of a strange silencing of organisations which have traditionally been concerned with defending civil liberties and free speech.

While alarm about such issues has occasionally surfaced in the press (eg Lord Sumption³⁷) and posts on Youtube (eg John Pilger³⁸) there seems to have been little discussion of such issues in the scientific community. Yet the notion of containing the spread of the virus via telephone tracing from reported contacts and monitoring of movements by drones have deeply troubling long term implications for intrusions into civil liberties and state surveillance.

Failure to acknowledge, let alone study, the role played by the flow of emergent, self-perpetuating, self-elaborating, and self-extending simplistic, but extremely damaging, mental viruses, or memes (networks of beliefs).

It seems that I have already written quite a lot on this topic ranging from a discussion of:

1. the disastrous implications of the Safeist “people must be protected against adverse harm” meme. (Among other things, this has contributed to, (i) deep intrusions into family and community life³⁹ in order to promote mandatory, limited and destructive, forms of “education” in place of the genuine need for radical reform of the educational system, (ii) the growth of Snowflake culture, and (iii) the growth of anti-“offence”, anti-“abuse”, and hate crime legislation which pours unconscionable abuse and life-destruction on those accused of trivial offences).

to

- 2 the reduction of the genuine need to radically reform the way we live first to simplistic campaigns to stem climate change or the use of plastic bottles, and then to such things as a crusade to replace fossil fuels by extremely expensive, and ecologically more destructive, “green energy”⁴⁰.

It remains to underline the need to formalise the study of the nature of these memes (mental viruses [single celled complex systems?]), how they are produced, and how they interact with each other to produce cumulative, damaging, social effects. Also, perhaps, how to create cultures which resist them.

Unfortunately, a glance at the Wikipedia suggests that the field has been captured by a network of studies which do not quite conform to this agenda.

Yet, while it is possible to generate a credible argument to the effect that the 2008 financial crisis was somehow manufactured by the deeply embedded international banking system⁴¹, I

can think of no remotely plausible hypothesis to explain why, or how, the response to the virus came to result in such a disastrous set of policies enacted worldwide⁴².

SUMMARY AND CONCLUSIONS

Especially given that the current crisis has not been caused by COVID-19 itself but by the international policies that have been justified in its name, it has been an abuse of science to focus “scientific” research predominantly on the spread of COVID-19 itself.

It has been an abuse of “science” to fail to study the multiple outcomes of the policies that have been introduced in the name of halting the spread of COVID-19.

And it is an abuse of science to neglect contextual variables which affect all these outcomes.

*These abuses highlight the widespread acceptance of the thought-way which leads the word **science** to be equated with **reductionist** science.*

In other words, they reflect the pervasive assumption that studies which fail to situate themselves in a systemic context can nevertheless legitimately claim to be “scientific”

It is therefore disturbing that most of those who have prided themselves on developing systemic models of the flow of the biological virus itself have ignored the systemic context.

Beyond that, it has been an abuse of authority to impose what have (correctly) been described as medieval⁴³ notions of how to stem the spread of the virus on the populations of the world.

These things reflect a predisposition toward what can only be described as extraordinary tunnel vision (lack of systems/systemic thinking) on the part of decision makers, scientists, and the general public.

In view of its consequences such authoritarian activity merits the strongest resistance.

Unfortunately, a huge number of obscene educational and environmental policies are supported by reference to equally flawed, non-systemic, reductionist, "science".

If research is to be used to guide policy that research must be *comprehensive*.

It must deal with *all* personal and social, intended and unintended, desired and undesirable, short and long term outcomes of proposed policies.

What is good for an individual may be bad for other individuals and society⁴⁴.

But what are the implications of this extraordinary abuse of authority for the decision-taking, governance, process itself?

Currently, we have what John Stuart Mill, Adam Smith, and, now, Dominic Cummings have described as government by committees of ignoramuses; government by people not only do not know, but *could not*⁴⁵ know, what they need to know to take wise decisions.

Rectifying that defect requires very different forms and images of governance.

Using the available research, I have elsewhere outlined one set of possible arrangements that could be implemented to create a society which would innovate and learn without central direction⁴⁶.

But it is worth noting in passing how the minimal feedback loops in the current system have been further undermined by the social distancing procedures embedded in the policies currently being promoted.

And so we have to ask ourselves what steps we might take to rectify this situation.

As I see it, we need to take steps to, among other things:

- Promote alternative images of science through our professional associations⁴⁷ and the teaching of science in schools.
- Promote alternative arrangements for the commissioning and funding of research⁴⁸.

Organisations which might have a particular role in doing such things include the Royal Statistical Society, the British Science Association (formerly the British Association for the Advancement of Science), The Society for Systems Thinking and Cybernetics in Organisations (SCiO), and Research Committee 51 (Sociocybernetics) of the International Sociological Association (RC51).

APPENDIX 1

The Abuse of Science, Logic, and Authority and the neglect of systemic thinking.

“Nice” example: Coronavirus Lockdown

Posted on *eyeesociety* 7 April 2020

Re my attempts to promote discussion of the abuses of “science” (ie application of non-systemic, reductionist, science), logic, and authority through a discussion of educational research and policy⁴⁹, it occurred to me that the reactions to the Coronavirus outbreak provide a wonderful example of these processes⁵⁰.

1. As might be expected given our preoccupation with non-systemic, reductionist, the “Science” deployed in government portrayal of what to do about the virus focuses on a single outcome of the current policy (individual disease and death from the virus) and neglects other outcomes (death and disease from isolation; destruction of the economy; arrival of a police state). This is a classic case of pursuing non-systemic science.
2. Policy makers have focussed on the work of a single scientist (Fergusson at Imperial College) who is somehow known to them despite the fact that the conclusions drawn from his previous modelling work along the same lines have been shown by events to be seriously flawed.
3. There is no evidence of an attempt to carry on a general debate with scientists having alternative perspectives (alternative dominant concerns and alternative models).
4. The authorities have imposed a draconian set of measures aimed at that single outcome along the lines advocated by the chosen “scientific” authority. These draconian solutions directly stifle discussion of alternative points of view and the personal enactment of individual choices of alternative behaviours believed to be in the long term public interest.
5. Some members of the police have seized the opportunity to metaphorically and physically beat people up (a) because some authority has “told” them to do so and (b) because enforcing the rules has apparent moral basis.
6. The public, triggered by the fear that they may be one of the losers, and an apparently ingrained desire to impose what they believe to be good and right on others without considering the wishes of those others or the long term effects of their actions, combined with a predisposition to favour draconian fascist single-factor policies nominally promoting the common good, has jumped on the bandwagon and started clamouring for *more* restrictions and conformity whilst, at the same time, taking a delight in reporting their neighbours to authority for minor infringements of what are taken to be the regulations.

APPENDIX 2

email sent to MPs and MSPs 6 June 2020.

1. In many countries the average age of people dying from Coronavirus is above the life expectancy in those countries. In other words, this virus poses little risk to most people, and those that die were on the verge of dying anyway.
2. The cross cultural data, especially that compiled by regions within countries, shows that it does not matter what one does (in terms of the components of the current destructive policies) one ends up in the same place. The policies just delay the outcome. We have to learn to live with the virus just as we have learned to live with most other viruses.
3. Despite having no effect (other than delaying the outcome) current policies have a huge

destructive effect on the lives and livelihoods of young people here and a massive effect by way of delivering starvation, death, and destitution worldwide.

4. These policies have had a dramatic effect on the governance process itself. They have narrowed the feedback from people to decision takers by dramatically narrowing the number of channels available. These have become limited to the mass media and overloaded email and social media accounts.

APPENDIX 3

**“Overview” (summary of findings) extracted from:
Swiss Policy Research (2020) *Facts about Covid-19*
<https://swprs.org/a-swiss-doctor-on-covid-19/>**

1. According to the latest immunological studies, the overall **lethality** of Covid-19 (IFR) is [about 0.1% to 0.3%](#) and thus in the range of a severe influenza (flu).
2. For people at high risk or high exposure (including health care workers), [early or prophylactic treatment](#) is essential to prevent progression of the disease.
3. In countries like the US, the UK, and also Sweden (without a lockdown), **overall mortality** since the beginning of the year [is in the range of](#) a strong influenza season; in countries like Germany and Switzerland, overall mortality so far is in the range of a mild influenza season.
4. In most places, the **risk of death** for the general population of school and working age is in the range of [a daily car ride to work](#). The risk was initially overestimated because many people with only mild or no symptoms were not taken into account.
5. Up to 80% of all test-positive persons [remain symptom-free](#). Even among 70-79 year olds, [about 60%](#) remain **symptom-free**. About 95% of all people develop at most [moderate symptoms](#).
6. Up to 60% of all persons [may already have](#) a certain cellular **background immunity** to the new coronavirus due to contact with previous coronaviruses (i.e. cold viruses). The initial assumption that there was no immunity against the new coronavirus was not correct.
7. The **median age** of the deceased in most countries (including Italy) is [over 80 years](#) (e.g. 86 years in Sweden) and [only about 4%](#) of the deceased had no serious preconditions. The age and risk profile of deaths thus essentially corresponds to [normal mortality](#).
8. In many countries, [up to two thirds](#) of all extra deaths occurred in **nursing homes**, which do not benefit from a general lockdown. Moreover, in many cases it is [not clear](#) whether these people really died from Covid-19 or from weeks of [extreme stress and isolation](#).
9. Up to 30% of all **additional deaths** may have been caused [not by Covid-19](#), but by the effects of the [lockdown, panic and fear](#). For example, the treatment of heart attacks and strokes [decreased](#) by up to 60% because many patients no longer dared to go to hospital.
10. Even in so-called **“Covid-19 deaths”** it is often [not clear](#) whether they died *from* or *with* coronavirus (i.e. from underlying diseases) or if they were counted as [“presumed cases”](#) and not tested at all. However, official figures usually [do not reflect](#) this distinction.
11. Many media reports of **young and healthy people** dying from Covid-19 turned out to be false: many of these young people either [did not die](#) from Covid-19, they had already been [seriously ill](#) (e.g. from undiagnosed leukaemia), or they were in fact [109 instead of 9](#) years old. The claimed increase in Kawasaki disease in children also turned out [to be exaggerated](#).
12. Most **Covid-19 symptoms** can also be caused by severe influenza (including pneumonia, [thrombosis](#) and the temporary loss of the [sense of smell](#)), but with severe Covid-19 these symptoms are indeed more frequent and more pronounced.
13. Strong increases in **regional mortality** can occur if there is a [collapse in the care of the elderly and sick](#) as a result of infection or panic, or if there are additional risk factors such as [severe air pollution](#). Questionable [regulations](#) for dealing with the deceased sometimes led to [additional bottlenecks](#) in funeral or cremation services.
14. In countries such as Italy and Spain, and to some extent the UK and the US, **hospital overloads** due to strong flu waves [are not unusual](#). Moreover, this year up to 15% of health care workers were [put into quarantine](#), even if they developed no symptoms.
15. The often shown exponential curves of **“corona cases”** are [misleading](#), as the number of tests also increased exponentially. In most countries, the ratio of positive tests to tests overall (i.e. the positivity rate) remained [constant at 5% to 20%](#) or increased only slightly. In many countries, the peak of the spread was already reached well [before the lockdown](#).

16. Countries *without lockdowns*, such as [Japan](#), [South Korea](#), [Belarus](#) and [Sweden](#), have [not experienced](#) a more negative course of events than many other countries. Sweden was even [praised](#) by the WHO and now benefits from [higher immunity](#) compared to lockdown countries. 75% of Swedish deaths [happened in](#) nursing facilities that weren't protected fast enough.
17. The fear of a shortage of **ventilators** was [unjustified](#). According to lung specialists, the invasive ventilation (intubation) of Covid-19 patients, which is partly done [out of fear](#) of spreading the virus, is in fact often [counterproductive](#) and damaging to the lungs.
18. Various studies [have shown that](#) the main **routes of transmission** of the virus are neither long-range aerosols (i.e. tiny particles *floating* in the air) [nor smear infections](#) (i.e. on surfaces), but *direct* contact and *droplets* produced when talking or coughing. However, in [some circumstances](#), indoor aerosol transmission appears to be possible.
19. There is still [little to no scientific evidence](#) for the effectiveness of **cloth face masks** in *healthy* and *asymptomatic* individuals. Experts warn that such masks may interfere with normal breathing and may become ["germ carriers"](#) if used repeatedly.
20. Many **clinics** in Europe and the US remained [strongly underutilized](#) or [almost empty](#) during lockdowns and in some cases had to [send staff home](#). Millions of surgeries and therapies were [cancelled](#), including many cancer screenings and organ transplants.
21. Several **media** were caught [trying to dramatize](#) the situation in hospitals, sometimes even with [manipulative images](#) and videos. In general, the [unprofessional reporting](#) of many media maximized fear and panic in the population.
22. The **virus test kits** used internationally are [prone to errors](#) and can produce false positive and false negative results. Moreover, the official virus test was [not clinically validated](#) due to time pressure and may sometimes react positive to other common coronaviruses.
23. Numerous [internationally renowned experts](#) in the fields of virology, immunology and epidemiology consider the **measures** taken to be [counterproductive](#) and recommend rapid [natural immunization](#) of the general population and protection of risk groups.
24. At no time was there [a medical reason](#) for the closure of **schools**, as the risk of disease and transmission in children is [extremely low](#). There is also [no medical reason](#) for small classes, masks or 'social distancing' rules in schools.
25. Several medical experts [described](#) express coronavirus **vaccines** as [unnecessary](#) or even [dangerous](#). Indeed, the vaccine against the [so-called swine flu](#) of 2009, for example, led to cases of [severe neurological damage](#) and lawsuits in the millions. In the testing of new coronavirus vaccines, too, serious [complications](#) and [failures](#) have already been reported.
26. A global respiratory disease pandemic can indeed extend over [several seasons](#), but many studies of a ["second wave"](#) are based on [very unrealistic assumptions](#), such as a constant risk of illness and death across all age groups.
27. In several places, nurses described an oftentimes [fatal medical mismanagement](#) of Covid patients due to questionable [financial incentives](#) and inappropriate medical protocols.
28. The number of people suffering from **unemployment**, [depression](#) and domestic violence as a result of the measures has reached [historic record levels](#). Several experts predict that the measures will claim [far more lives](#) than the virus itself. According to the UN [1.6 billion people](#) around the world are at immediate risk of losing their livelihood.
29. NSA whistleblower Edward Snowden warned that the "corona crisis" may be used for the [permanent expansion](#) of **global surveillance**. In several parts of the world, the population is being [monitored by drones](#) and facing serious police overreach during lockdowns.
30. A 2019 WHO study on measures against pandemic influenza found that from a medical perspective, ["contact tracing"](#) is ["not recommended in any circumstances"](#). Nevertheless, contact tracing apps have already [become](#) partially mandatory in [several countries](#). In some countries, such "contact tracing" is carried out directly [by the secret service](#).

APPENDIX 4

A list of Youtube videos whose content influenced my thinking.

FILMS

CONTAGION: 2011 Warner Bros. Film.

The Horseman on the Roof. (1995) Set in France in the Cholera epidemic of 1832.
Distributed by AFMD (France) Miramax (USA)

Before turning to individual videos, here is an extraordinary site giving links to numerous publications detailing some of the horrific “side effects” of the lockdown.
<https://evidencenotfear.com/tag/collateral-damage/?fbclid=IwAR1955811N08trLKN4ayjKcCZbqr5MLEPVG8o4geU6Qc6venN8dRRJytMsA>

Stanford Professor and Nobel Prize Winner Explains this Viral Lockdown - Fully! (ie official documentation of abuse of science, logic, and authority).<https://www.youtube.com/watch?v=DHOoqdkj4Zs>

Karl Friston discusses how his tweaking of the SEIR model to arrive at more sensible conclusions [Going Underground on RT.](https://www.youtube.com/watch?v=SFeccnIcdRg)
<https://www.youtube.com/watch?v=SFeccnIcdRg>

David Starkey: Covid-19 -- Britain's Disastrous Response Will Have Devastating Consequences. <https://www.youtube.com/watch?v=8S8Js-tEmlg>

Prof. Frank Furedi: The Culture of Fear in the 21st Century.
<https://www.youtube.com/watch?v=qsb2Kbxu6hM>

Lionel Shriver -- The Brendan O'Neill Show
<https://www.youtube.com/watch?v=a6YYI7nPv-0>

Wilfred Reilly: there is no evidence that lockdowns work (when you run regressions and question assumptions by Fergusson.) <https://www.youtube.com/watch?v=AP4v7wHpqbE>

Terrifying evidence of stifling of evidence, manipulation of figures, and violation of free speech in favour of authority <https://www.youtube.com/watch?v=sPrbGU0Wyh4>

Lord Sumption on use of fear to release mass demand for draconian policies
<https://www.express.co.uk/news/uk/1262338/Coronavirus-hysteria-Lord-Sumption-BBC-police-lockdown-UK-response>

John Pilger-What Governments Aren't Telling You About the Coronavirus Pandemic (COVID-19) Going Underground at RT 8 Apr 2020
<https://www.youtube.com/watch?v=jt58it26jCs>

John Pilger : Coronavirus spread in UK is a 'crime' as NHS had 4 years to prepare for pandemic <https://www.rt.com/uk/485304-uk-coronavirus-pandemic-pilger>

Trevor Kavanagh amazing talk on Talk Radio 31 March: 'Hysteria forced UK into lockdown' Wrong to focus on individual deaths rather than deaths etc from shutting down economy. Plus critique of Fergusson plus Diamond Princess. <https://www.youtube.com/watch?v=YYatWzxZDjI>

Description of his experience by guy who had COVID-19 https://www.youtube.com/watch?v=0a4AK_g9fHA

Coronavirus and dissent, with Peter Hitchens -- The Brendan O'Neill Show 3 April. Significance of absence of protest against authoritarian action. Just accept statements of authority. <https://www.youtube.com/watch?v=zmLQmzsqtB4>

Boris Johnson's Coronavirus Strategy Will End in Repression!-John Ashton CBE. Going Underground at RT 6 Apr 2020 <https://www.youtube.com/watch?v=LJbbrp1Xccw>

Amy Soubry on free speech: Hearts of Oak Free Speech Award 1 Mar 2020 <https://www.youtube.com/watch?v=1dUiOqxMLZM>

Tommy Robinson Hearts of Oak free speech award. 1 March 2020 <https://www.youtube.com/watch?v=IH5vARRCyDI>

Vernon Coleman: Why There Will Be A Second Wave (They Need One) <https://www.youtube.com/watch?v=PXEoTXOclQM>

Spiked: The woke cultural revolution <https://www.youtube.com/watch?v=KXzoludTVM0>

Toby Young: The Free Speech Fightback To Prevent Outrage Mobs Destroying Lives & Careers. <https://www.youtube.com/watch?v=yVmFFebZd0o&t=1148s>

[#TheTonyRobbinsPodcast](#) Unmasking The Science You Aren't Hearing On TV | COVID-19 Facts from the Frontline https://www.youtube.com/watch?v=YgP_Au5RZVw

LOST: Video discussing destruction of world view as a result of experience of "cancelling".

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Contains graphs showing daily deaths by region of UK and location (hospital, care home, etc.). They appear to show that Lockdown was not necessary in the first place and that the various measures, introduced at different dates, had no detectable effect.
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ENDNOTES

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- ¹ But here is an extraordinary site giving links to numerous publications detailing some of the horrific, but widely neglected, “side effects” of the lockdown.
<https://evidencenotfear.com/tag/collateral-damage/?fbclid=IwAR195581IN08trLKN4ayjKcCZbgr5MLEPVG8o4geU6Qc6venN8dRRJytMsA>
- ² This is not to say that there are not discussions of such outcomes. The point is that failure to include such outcomes *within the models* makes it impossible to compare the relative effects of alternative interventions on *all* the likely outcomes and thus arrive at a balanced judgment.
- ³ Raven (2016, 2017, 2018, 2019)
- ⁴ We may note in passing that the harm done by these attacks far exceeds the harms done by most of the statements that have been categorised as “offensive” or constituting (verbal) “abuse”.
- ⁵ Thread of articles compiled by a twitter account called ‘consent factory’ detailing some of the many authoritarian measures brought in or enforced around the world:
<https://threadreaderapp.com/thread/1238971734063226881.html?refreshed=1592343141>
- ⁶ A recording of this seminar is available at <https://www.youtube.com/watch?v=jywqMlbNuvY> and <https://www.youtube.com/watch?v=jywqMlbNuvY&feature=youtu.be>
- ⁷ OECD/Ramos & Hynes (2020)
- ⁸ Swiss Policy Research (2020) *Facts about Covid-19* <https://swprs.org/a-swiss-doctor-on-covid-19/> (The paper presents excellent documentation for 30 facts)
- ⁹ Ramos and Hynes (2020). Although this paper is extremely important from the point of view of illustrating the complexity of the issues, I have to say that it suffers from a major defect: it repeatedly discusses a range of disasters that have followed the COVID-19 incident *as if they were consequences of the virus itself*. In reality they are consequences of the policies which government after government has implemented. Thus they are consequences of the *mental* virus (meme) that has circulated on the back of the biological virus.
- ¹⁰ Pruyt (2013).
- ¹¹ I have developed this thesis more fully in Raven (2019)
- ¹² Raven (2017, 2018, 2019)
- ¹³ See endnote currently 43 for a discussion of the costs and other implications of this contention.
- ¹⁴ In the Systems Dynamics webinar available at <https://www.youtube.com/watch?v=jywqMlbNuvY>
- ¹⁵ See Roberts (2020) for a discussion of the effects of the lockdown policies on such families.
- ¹⁶ Royal Statistical Society Edinburgh group. Quantifying ecological impacts of offshore renewables - a statistical perspective. Seminar held on 1st October 2019 with Andrew Gill, Kate Searle, and Daniel Johnston as speakers.
- ¹⁷ Friston all papers
- ¹⁸ Friston Utube video
- ¹⁹ Bertalanffy (1968)
- ²⁰ Von Foerster (1992, 2003)
- ²¹ Maturana & Varela (1971/1980)
- ²² Campbell (1979). This asserts that the introduction of any quantitative measure, or standard, into the evaluation of any activity has the effect, among other things, not only of leading those concerned to focus only on gaining high scores on those measures by whatever (underhand) means possible and to neglect the main goals of the system, but to the corruption of the very measures themselves.
- ²³ Davis (2020) gives some examples of a few of these.
- ²⁴ Raven (2019)
- ²⁵ This is not to say that separate models of some of the outcomes have not been developed. See, for example, <https://exchange.iseesystems.com/public/isee/covid-19-economy-model/index.html>

²⁶ Shiva (1998)

²⁷ Shiva (2020)

²⁸ Haseltine (2020)

²⁹ Raven (2008, 2010, 2014, 2019)

³⁰ Raven (2014)

³¹ **Scottish government currently endnote 38**

³² Raven (1980)

³³ <https://www.gov.scot/publications/coronavirus-covid-19-re-opening-schools-guide/> and images of measures being taken by schools: <https://thewallwillfall.org/2020/05/14/covid-19-back-to-school-the-new-normal-is-to-traumatise-children/> and <https://www.dailymail.co.uk/news/article-8328819/Primary-school-unveils-plans-social-distancing-pupils-return-class.html> Children are being isolated from each other and adults as a result of enforcement of social distancing rules, they are unable to play together, unable to work in groups, unable to sit or stand next to each other, made to follow arrow directions to move around, soft toys and furnishings removed, bookshelves taped up as sharing books is now considered a biohazard! These measures will surely spell the end for most sports, dance, drama, music ensembles, and assemblies.

Unfortunately there are many teachers that will take delight in enforcing these measures to the letter, and the increased control it gives them. And all justified by reference to a virus they have next to zero risk of harm from.

³⁴ Well, I say that, but just look at the measures that are being enacted in the name of protecting the environment. In the previously-mentioned (**endnote currently 16**) seminar organised by the Edinburgh Branch of the Royal Statistical Society a number of researchers spoke about such things as the ecological impact of both marine- and land-based windfarms, and the use of marine turbines to harness the tides. The impacts were dramatic. Even the electromagnetic fields generated by sea-bed cables to convey the electricity that had been generated to the grid had dramatic effects on fish movements and feeding and breeding habits. But the participants spoke with some feeling about their inability under current funding arrangements to study the wider ecological impact of these developments. They were confined to DRIP studies – Data Rich Information Poor – studies. Discussion of the wider impact as these stations proliferate was outside their remit. Yet it was clear that such proliferation will result in ecological damage every bit as great as that which results from burning fossil fuels.

³⁵ **Should refer to interview with Toby Young or A.N.Other but cannot find it.**

³⁶ **See note currently 34 above.**

³⁷ Lord Sumption on use of fear to release mass demand for draconian policies and facilitate arrival of police state: <https://www.express.co.uk/news/uk/1262338/Coronavirus-hysteria-Lord-Sumption-BBC-police-lockdown-UK-response>

³⁸ John Pilger on source of coronavirus problem: <https://www.youtube.com/watch?v=it58it26jCs> , [Coronavirus spread in UK is a 'crime' as NHS had ... - RT](https://www.rt.com/uk/485304-uk-coronavirus-pandemic-pilger) and <https://www.rt.com/uk/485304-uk-coronavirus-pandemic-pilger>

³⁹ Such intrusions were built into the deeply intrusive Scottish Government's *Children and Young People's Act*. Through this, a "named person" holding some position in the administrative structure (e.g., head teacher or social worker) has to be appointed for every "child" (aged minus 6 months to 22 years of age) to visit their homes on a regular basis. These "named persons" are provided with two sets of 60-item tick-box questionnaires named, in an Orwellian manner, GIRFEC and SHANARI which they have to complete on each visit. They also have access to all the family health, social, and criminal records (access which the parents themselves do not have). And they have the right to require parents and children to, among other things, attend "remedial" programmes (including "remedial" parent-education programmes) and, in the event of failure to comply, have the children taken into (uncaring) care.

It is extremely important to note in passing the recursive process which has been employed in order to claim that these policies are based on research. The questionnaires were drawn up by

bureaucrats on the basis of summaries of the available so-called policy-related research evidence that had been compiled through a progressively-narrowing recursive process. Through this, researchers respond to “calls for proposals” to summarise research in the area. But the call had been framed, through the politico-bureaucratic process, in such a way as to exclude considerations of other perspectives thereby cyclically reinforcing the framing of “the problem” and the range of research that could be funded.

⁴⁰ See Raven (2018) and earlier comments on the ecological effects of wind and marine turbines.

⁴¹ See Raven (2014) and George (2010) for that argument and Raven (2015) for a discussion of the extraordinarily embedded nature of the banking system.

⁴² Which is not to say that I do not agree that the main beneficiaries of the forthcoming collapse of the economy will not be the banks

⁴³ Two yards social distancing and mandatory quarantine were regularly imposed by medieval legislators.

⁴⁴ Starting from the, mainly reductionist, “science” currently available and the image of science that is widely embedded in people’s minds, the time and costs involved in conducting such research would be enormous. But, as is evident from what has been said in this article, the costs of *not* doing it are even more enormous. But what would be entirely feasible would be to require “scientists”, first, to take steps to orientate their research proposals and designs toward more comprehensive, more systemic, ways of thinking, and, second, to list, in their already mandatory sections on “limitations of the study” a discussion of what is *not* there and the implications that would follow if it had been there. More generally, there is an urgent need to radically reform the way research is funded and evaluated and the way science is taught in schools. As the field became peppered with more comprehensive and systemic studies the task of moving forward would become less daunting.

⁴⁵ Adam Smith observed that if two people who were unknown to each other initiated innovative activities in separate places no one could tell beforehand what would happen as the developments came together. In other words, the key information needed to take wise decisions not only is not, but cannot, be available. All one can do is set up a system which will innovate, learn, and evolve on its own, without central direction in response to the information that is available in the hearts, heads, and hands of billions of people.

⁴⁶ Raven (1995)

⁴⁷ I have discussed steps which the BPS should be encouraged to take more fully elsewhere but it is worth drawing particular attention to the potential role of the Royal Statistical Society which has the potential to harness the energy of people like Andy Gill (see Boehlert and Gill) who have been enraged by current developments in the research-funding and discussion area.

⁴⁸ See Raven (2019)

⁴⁹ Eg Raven (2019)

⁵⁰ There is no evidence that current strategies work from the point of view of reducing the impact of the virus. What there has been has been reliance on the outcomes of modelling provided by a particular group of researchers whose previous predictions have been seriously wrong. There are now graphs of no of deaths and confirmed cases by date for many countries and regions. When these show the dates various measures were introduced they reveal that none of these measures had a discernible impact on the shapes of the curves. In contrast, there is abundant evidence of the devastating impact on the economy, including starvation and death both in the UK and externalised to eg Bangladesh. But my main concerns have been about the absence of public debate, encouragement of contributions from other scientists, and the plunge into draconian policies over-enthusiastically supported by most of the public and over-enforced by police and other authorities.