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A Covid Paradigm? Brian Martin

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Is it plausible or useful to talk of the main response to the Covid pandemic as being a paradigm? To find out, it's worth exploring key elements of the concept of paradigm as applied outside of science.

In the early 1970s, as a physics PhD student, I read Thomas Kuhn's *The Structure of Scientific Revolutions*. I remember thinking, "Yes, that's exactly the way science operates." Kuhn's idea of normal science, in which researchers tackle puzzles within a set of assumptions that are hardly ever challenged, fit my experience. There was no revolution, no change in fundamental assumptions, on the horizon, and there didn't seem to be a crisis of belief. Experimental findings that could not be explained using the standard assumptions—for example, evidence for precognition (Schmidt 1969)—were simply ignored.

In Kuhn's picture of paradigms, researchers doing normal science have a standard set of beliefs about how the world works, use a standard set of research methods and interpret findings in a standard way. Only occasionally, due to an accumulation of anomalous results and advocacy for an alternative framework, is there a crisis that leads to overthrowing the old paradigm and introducing a new one.

This is old hat for historians and philosophers of science, who have argued for decades over Kuhn's legacy. Yet whatever the shortcomings of the Kuhnian picture as applied to natural science, it found an enthusiastic audience in other fields. Economists, psychologists, educationists and many others found the idea of a paradigm useful for understanding their own fields. Most commonly, they point to a sclerotic dominant paradigm that needs to be overthrown and replaced. They call for a revolution.

At this point, it's necessary to note that being paradigm-bound is not necessarily a bad thing. Pursuing narrow puzzles within dominant assumptions can be illuminating and beneficial. A revolution can be disruptive without adding explanatory power. Paradigms need to be assessed on a case-by-case basis. The complication is that the criteria for assessing the dominant paradigm are set by the paradigm itself. No wonder it's so hard to bring about a revolution.

## **Covid**

Governments have responded to the pandemic with a fairly standard set of policies and recommendations. These include isolating, distancing, lockdowns, vaccinations and mask-wearing. To identify the standard view, it is easiest to point to recommendations by the World Health Organisation and the US Centers for Disease Control and Prevention. Is it useful to think of these recommendations, and associated practices, as constituting a paradigm? WHO and CDC advice has changed over time, which might seem like a complication, except that within any paradigm disagreements and revised viewpoints about smaller matters are routine. More important are fundamental assumptions. Here I look in turn at the centrality of vaccination, adverse events from vaccines, immunity by other means, and treatments.

One useful way to probe the boundaries of a paradigm is to see how anomalies are treated. Another is observing responses to challengers, thinking here of both experts and citizens.

### **The Centrality of Vaccination**

A central feature of the official Covid response has been the top priority put on vaccination. Billions of dollars have been spent developing, testing, manufacturing and delivering vaccines. Wealthier governments tried to ensure the earliest possible supply of vaccines and have imposed a range of measures to encourage or coerce people to be vaccinated. Deviations from this central feature are unwelcome. This can be seen in the censorship of criticisms of vaccination (Martin 2021), in the demonisation of vaccine critics (tarred with the derogatory label “anti-vaxxers”) and in discriminatory measures taken against individuals who choose not to be vaccinated.

An alternative to widespread vaccination, with the goal of herd immunity, is another approach: allowing the coronavirus to spread among populations where it causes relatively little damage (the young and the healthy), thereby building up natural immunity in the population and protecting those most vulnerable to serious consequences. This alternative, when supported by scientists (Kulldorff, Gupta, and Bhattacharya 2020), has been censored and condemned. The Swedish government adopted a de facto version of this approach. It has been widely denounced by supporters of the dominant approach while being lauded by critics.

### **Adverse Events**

Given that vaccines are central to the Covid paradigm, it is plausible that recognising adverse reactions to vaccines would be seen as unwelcome. In the US, there is a system for reporting such reactions and, in some instances, obtaining compensation. It is called VAERS (Vaccine Adverse Event Reporting System). Reporting events to VAERS is voluntary. Many patients have reported the reluctance of their doctors to acknowledge that a health problem emerging soon after a vaccination could have anything to do with the vaccine, instead attributing the timing to coincidence, which it may well be.

Among vaccine critics, there is a widely quoted figure that only 1% of adverse reactions are recorded by VAERS. This figure appeared in what would otherwise be an obscure grant report (Lazarus, Klompas, and Bernstein 2011). The question is, why hasn't there been a careful study of the prevalence of adverse reactions from vaccines, including Covid vaccines, rather than relying on voluntary reports? It would be straightforward to carry out such a study, thereby providing a better-founded figure than the estimate of 1%, which might be wildly wrong.

Here it is useful to invoke the idea of “undone science” (Hess 2016). This refers to research that could be carried out, and for which there are calls from citizen groups for it to be carried out, but which is not funded or otherwise supported by powerful groups, typically government or industry. The reason is that the results of such research *might* be contrary to the interests of these powerful groups.

Vaccination is endorsed by the medical profession and government health authorities, and is a huge money-spinner for pharmaceutical companies. For these groups, it can be argued, research to provide a more definitive assessment of the adverse effects of vaccines is unwelcome. Although such research might confirm the common assumption that coincidence is nearly always responsible for alleged adverse events, on the other hand it might show that these events are seriously undercounted. Given that this latter possibility is unwelcome—it might contribute to vaccine hesitancy—there is little incentive to fund or otherwise enable such research. Within the paradigm, adverse events from vaccines are anomalies and need to be ignored or explained away rather than being carefully investigated. This at least is the interpretation of Greg Nigh (2021) who in a commentary notes that there is little evidence for the 1% figure but also that the CDC declined to assist efforts to develop a system to give a more reliable figure.

### **Immunity by Other Means**

Other means of boosting immunity, besides vaccination, receive little attention. One of these is exercise. Research shows that people who exercise have a reduced risk of contracting Covid (Lee et al. 2021; Sallis et al. 2021); even before the pandemic, there was research showing that, for other infectious diseases such as the flu, exercise improves the immunity-boosting effect of vaccines and/or reduces side effects (e.g., Bohn-Goldbaum et al. 2020). Research along these lines seems to have been a low priority compared to conventional studies of vaccination, and has received little media attention. Do you know any doctor who recommends exercise to improve immune response?

There are several other non-vaccine avenues for enhancing immunity, including good nutrition, adequate sleep and mindfulness (Davidson et al. 2003; Gamaldo, Shaikh, and McArthur 2012; Katona and Katona-Apte 2008; Walsh et al. 2011). None of these receives much attention compared to vaccines. A factor in this neglect is that these methods do not provide a high level of specific immunity to the new coronavirus, nor indeed to any particular disease. They are likely only to reduce the chance of becoming ill or being hospitalised. Nonetheless, this would reduce the overall disease burden, and furthermore these methods cost little or nothing and, unlike vaccines, improve physical and mental health and wellbeing in other ways.

Exercise, nutrition, sleep and mindfulness do not guarantee immunity to Covid—but neither do Covid vaccines. Why haven't we seen studies of the relative impacts or roles of these different methods of promoting immunity?

### **Treatments and Strategies**

The Covid paradigm seems to involve an assumption that exploring prophylaxis and treatment innovations is a low priority and furthermore that non-patentable substances are suspect. At the outset of the pandemic, numerous research teams investigated a wide range of vaccine possibilities, and governments and companies supported the effort. In contrast, there has not been the same enormous effort in investigating a wide range of possibilities for prophylaxis and treatment—especially using substances that are cheap and non-toxic,

including vitamin D, vitamin C, zinc, ivermectin and hydroxychloroquine. Significantly, these are all non-patentable. Over some of these substances, especially hydroxychloroquine, there have been fierce debates, even condemnation.

At the outset of the pandemic, before vaccines were available, there was the possibility of testing a variety of strategies, for example involving mask mandates and lockdowns. The outcome from such studies could have been used to inform policies in much of the world, to great benefit. The question needs to be asked, why were billions of dollars invested in vaccine research, development and manufacturing but no equivalently funded social research undertaken into other measures to ameliorate damage from the pandemic?

### **Possible Influences on the Covid Paradigm**

Some of the features of the Covid paradigm—especially the emphasis on vaccines and the neglect of research on non-patentable treatments—might suggest that pharmaceutical industry interests are a dominant influence on thinking and policy-making. There should be nothing surprising about this. Kuhn’s original conception of paradigms was a challenge to the prior assumption that science advanced purely on the basis of evidence and logic. Thinking in terms of paradigms, though, introduced the possibility that the trajectory of scientific explanations was influenced by social factors. When it comes to public health, it is more obvious that various social factors are involved, including the political advantage of being seen to protect the population, the economic pressures to limit the impact of control measures, and the humanitarian imperative to save lives.

Some of the features of the Covid paradigm might be said to reflect a wider biomedical model, in which the solution to health problems is assumed to involve some sort of medical intervention. Biomedicine does not see itself as a paradigm but rather as the truth, and furthermore as value-free (Gaines and Davis-Floyd 2003). Most writings about a biomedical paradigm are by its critics.

Although there are research-based official recommendations for cancer patients to exercise (Campbell et al. 2019), this seems to be a low priority for most physicians and their patients. Physicians are more likely to recommend interventions administered by the medical system, and many patients seem to feel that treatment should not require significant ongoing effort on their own part, or that they should be able to continue their lives just as before, aside from medical treatment. Not all patients respond this way: some pursue changes in diet, activity, stress levels, environmental exposures and nonstandard treatments. These are seen as “alternative”: they are not part of the standard package.

There is one other important aspect to the Covid paradigm, though it might better be seen as an assumption at a meta-level. This is that Covid is an overwhelmingly important health issue, one so crucial that it warrants shutting down economies, mandating behaviours, restricting civil liberties and massively redirecting resources. The result is that an exceptional effort is made to protect lives from the ravages of Covid, but not an equivalent effort to protect lives from other dangers. Comparisons could be made with the potential dangers from climate change or nuclear war, over which many governments for decades have resisted taking drastic action. A closer comparison is with everyday health hazards against which simple interventions would save many lives. For example, reducing speed limits would

reduce the road toll. So would reducing the number of roads and increasing the number of cycle paths. Putting a stiff tax on sugar and processed food, or providing subsidies for fresh fruits and vegetables, would reduce obesity and diabetes, saving many lives.

An obvious explanation for the failure to vigorously implement life-saving policies is the role of vested interests, whether these be fossil fuel companies or sugary food manufacturers. There does not seem to be an equivalently influential vested interest in relation to Covid. The result is that saving a life from Covid, or even preventing someone from having and recovering from Covid, is seen as more important than saving a life from some other danger (Graso, Chen, and Reynolds 2021). Part of the paradigm is the belief that dealing with Covid is so important that drastic measures are required, more far-reaching than ones used to mitigate other dangers to humans. Associated with this is a moral panic about misinformation (Bratich 2020), in this case any divergence from the Covid orthodoxy.

## **Conclusion**

The idea of a paradigm is useful in drawing attention to features of the standard responses to the Covid pandemic. Some ways of responding are assumed to be preferable whereas others are ignored, marginalised or condemned. Vaccines are widely seen as the ultimate solution, supported by control measures of lockdowns, isolating, handwashing, distancing and mask-wearing. Vast resources have been expended to develop and promote vaccines, whereas treatment innovations have been relatively neglected and non-vaccine methods of improving immunity almost entirely ignored. The standard response to Covid has been moralised to the extent that anyone advocating different priorities is, if not ignored, at risk of being reviled.

It bears repeating that pointing to something as being a paradigm does not mean it is wrong, oppressive or undesirable. Future researchers, with the benefit of hindsight, may judge that the Covid paradigm was exactly what was needed to avert a human catastrophe. On the other hand, some might think it would have been wiser to follow the advice of Paul Feyerabend (1978) and entertain a wider range of frameworks and approaches, as a sort of insurance policy against paradigm failure. In the meantime, we can go with the flow or attempt to be paradigm-busters.

## **Postscript**

In writing about Covid, it is difficult to avoid being affected by one's own circumstances and choices. It might seem that any questioning of orthodoxy reflects a personal stance against it. Not necessarily so. In the interests of transparency, I can report that I received the AstraZeneca vaccine (aka Vaxevria) shortly after it was available and have followed rules on distancing and mask-wearing. Nonetheless, although my behaviour has been in accord with mainstream expectations, I have tried to remain open, intellectually, to a range of alternatives. This requires tolerating a degree of cognitive dissonance, which is not a bad thing in this case.

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