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Honesty is the Best Policy: Why the Science of Vaccination Matters

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In recent weeks and months SERRC has published a number of contentious articles and replies which focus on vaccines: vaccines which combat COVID-19. Making the latter statement so definitively makes me suspect my writing will be taken by readers as supporting a pro-vaccination position. I say this because the debate in SERRC has become almost polemic like, until that is, Kurtis Hagen's recent piece on intellectual honesty on vaccine safety.

Intellectual Honesty: Hagen's Way

In critically assessing Riggio (2022), Martin (2010, 2016, 2021a, 2021b, 2022), Liester (2022) and Basham (2022a, 2022b), Hagen's article (2022) opens the way for a further development of the debate on vaccination in the way it quite clearly focuses on the question of whether we allow free speech in the academy, and what the consequences for society are if we do. An elitist argument no less, although one I may find myself subscribing to by the end of this essay (Hewitt 2020b) and perhaps, arguably, a slight but nonetheless edifying distraction from the concomitant questions raised in Hagen's article I specifically address here: are vaccines safe or toxic, and is the public information on their safety transparent and honest? However, the two questions are inextricably linked because, fundamentally, this article is about what we can and can't say in the academy and public sphere; and indeed, what we do say, and how the consequences of our writing might influence public opinion with regard to vaccines. Without giving away my concluding argument now, I will argue that our words might not have the influence they once did and we would like them to have now.

Thus, vaccine technology and the safety of that technology is the scientific focus of my essay. However, it seems to me that the overriding philosophical issue, question following from Hagen's article is what knowledge enters the public realm, and should we allow theories that venture into the realms of conspiracy and alternative medicine to compete with science. This then is the philosophical aspect of my writing. Can the two coexist you might be asking—in society, and in this essay. Well, yes, a rational discourse in academia and, a so-called 'rational polis' would usually be seen as a prerequisite for a democratic society, indeed, Hagen quotes John Ziman (2000), who makes this very point. However, where we get our knowledge from in the 21st century, given myriad digital knowledge and news sources, and who we choose to believe may make this impossible. The post-truth society is here to stay (Fuller 2020, 48).

I am in fact pro-vaccination but want to broaden the debate on the scientific evidence behind the development of vaccines and the pandemic itself. The recent Monkey Pox outbreak, said definitively to have originated in a laboratory has made me question my own beliefs as to how the pandemic started.¹ This is because COVID-19 is very real until, it seems to me, we question its origins and the validity of the vaccination program, and then, the pandemic, which nearly overwhelmed the world, is negated; and the importance of its origins seemingly takes on more importance than its cure.

¹ <https://www.science.org/content/article/monkeypox-outbreak-questions-intensify-cases-soar>.

Thus a feeling of cognitive dissonance in reading ostensibly anti-vax, conspiracy theory like articles has been replaced by an equally uneasy feeling at the possibility of being wrong about my own beliefs and assumptions. Thus, exploring the concept of intellectual honesty per se is at the heart of this essay. Incidentally perhaps, my contribution is written from a UK perspective; the language used here may be slightly different, and also the government health regulations cited below at odds with the US, although I have tried to incorporate as many American references as possible.

My research is presented in text and in an extended references section, which includes a number of internet searches on as many of aspects of vaccines safety I felt it possible to present in this relatively short article. The importance of highlighting this will become clear as I develop my argument for the reader below.

Honesty is the Best Policy in a Rational Polis

In this essay I want to take the middle ground so to speak, and through the concept of a 'rational polis', a debate Riggio (2022) is engaged with, and look afresh at some of the articles by Brian Martin and of course Kurt Hagen's in particular. However, I want at first in this contribution to the debate to move away slightly from the discussion over the 'credibility' of for instance, how HIV started via the Polio vaccine ([the POV theory](#)), to focus on whether vaccines are safe, the benefits outweigh the costs, so to speak, and whether they were indeed the right strategy to tackle the pandemic, although I will of course argue they were. In fact, in a recent article for SERRC (Hewitt 2022), I argued they were the saving grace of this pandemic. I do not intend to directly address all the articles Hagen replies to in his comprehensive analysis, although I will refer to them and cite them.

Instead, in my article I want to look specifically at the science behind mRNA vaccines, and indeed think a bit more about this pandemic as I feel that perhaps in the debate here in SERRC, which has at times, perhaps arguably, seemed like a debate between conspiracy theorists and their foes, the pandemic itself has been lost, and arguably seems almost like an irrelevance.

Moreover, the conflation of where and how outbreaks of disease have occurred seems to detract from the debate on the science behind vaccines, and whether mass vaccination was the correct strategy (Martin 2021a). Therefore in entering into direct dialogue with Hagen, I want to present the science behind vaccines. I am though, acutely conscious that the empirical data produced by the epistemic authorities and 'big pharma' is considered disputable. Perhaps this gets to the nub of the matter: where do we get our information, Knowledge, and what do we choose to believe. I'll return to these questions in my conclusion. For the record now, I concur with Hagen: honesty is the best policy when it comes to vaccines, and unlike Riggio I do not believe this is 'consequentialist' and is theoretically responsible in part for so-called 'vaccine hesitancy'. Indeed, I will argue below there are other reasons which are historical and which fuel the suspicion of vaccines, an argument which somewhat negates the notion that current public knowledge on vaccines will lead to vaccine hesitancy.

mRNA Vaccines: the Saving Grace of Science: The Context

I remember, as most people do, where I was when it became clear the world was in the grip of a pandemic. I remember how the UK prime minister made a broadcast to the nation and told us to stay at home, and how frightening this was as we entered lockdown. The streets fell silent. The notion that herd immunity would save us from a ‘flu’ like virus which only killed the elderly was well and truly quashed as people began to die in their thousands: film of people gasping for breath, dying from COVID-19 in Italian hospitals filled our TV screens nightly. This is the context I remember vaccines being rapidly developed in: we were in the midst of a global emergency, argued to be of our own making, indeed, an emergency typical of this Anthropogenic Epoch (Honigsbaum 2019). We all waited for a vaccine that would save us from COVID-19; at least it felt as though the majority of people in the UK did.

The idea of a different strategy, for example washing our hands and taking exercise etc., was anathema. The notion that our freedom was being diminished by the actions of an opportunistic big State imposing an unnecessary lockdown was laughable then, and concerns over the nation’s mental health related completely to far greater existential concerns: that is, and without wishing to over emote, whether we would live or die. Moreover, issues surrounding the censorship of “anti-vaxers’ had understandably not yet arisen. Thus, I will address Brian Martin’s ‘Covid Paradigm’ (2021a) and ‘Information Struggles’ (2021b) articles in due course, because at the outset of the pandemic vaccines were the only game in town, so to speak. So I want to look at how vaccines were originally developed and then address the contentious issues surrounding their safe. For example, could we have done something other than vaccinated as many people as possible, and are vaccines safe?

Liquid Vessels, the Magic of mRNA and Cutting Edge of Intellectual Honesty in Science

In his article, Hagen (2022) presents a quote on how mRNA is delivered with a microscopic particle of the SARS-COV-2 spike protein. The question is what the liquid vessel is, and whether it is a toxic polyethylene glycol liquid that can cause anaphylaxis or is it a fatty lipid nanoparticle vessel (Ramachandran, Satapathy, and Dutta 2022). It seems to me that this is slightly out of context, as whether or not you’re an advocate of the vaccine program, the way in which vaccines work is far more complex and indeed, fascinating. Hagen takes one small aspect of vaccines to make his argument.

Hagen pointedly criticises Dr Amy Edwards of the US Department of Health and Human Services (HHS) for offering a simplistic, condescending and disingenuous public video in which she states categorically that the liquid vessel is a lipid. However, Hagen, who describes this as propaganda, offers little research to show that the use of glycols is toxic and dangerous or if indeed, it is a recognised alternative to lipid liquid vessels. In fact, polyethylene glycol wraps the lipid nanoparticles, and there is publicly accessible research on this available, in which data on anaphylaxis is transparently shared (Bigini et al. 2021).

Hagen also suggests in the light of this alleged deception that any toxic protein could be injected into the body; moreover, that the COVID-19 spike protein is not normally found in the body. This latter point demands that we discuss vaccine technology and science here: obviously the spike protein is not normally found in the body and our immune systems can't fight this virus, hence the need for a vaccine as with other viruses the past, such as measles. How else, we might reasonably ask, were we to vaccinate against COVID-19? We could of course have followed the recommendations of the Great Barrington Declaration, which Martin has espoused, and tested the discredited and thus false notion of natural 'herd immunity' which presumably would have resulted in many more of us receiving the real spike protein into our bodies.

Without being uncharitable, the observations of Hagen are reminiscent of conversations I heard in the high street in the UK after the vaccine program was rolled out: is Hagen arguing from the example of Amy Edwards that the American public will be seriously misinformed, or worse brainwashed? No, in fact Hagen is arguing that Edward's deception is so easy to see through that it will lead to public mistrust of public health bodies. I argue here that as academics we all need to present as much of the science on vaccines as possible.

Indeed, I argue that the knowledge Hagen suggests is missing from the public realm is easily available to all. It is, as I will argue, simply a case of what we choose to access and believe, and thus latter point of course refers to theories considered 'conspiracies', or simply 'anti-vax' misinformation. I suggest that Hagen's partial representation of the science of mRNA vaccines does exactly that; that is, it feeds into the anti-vax world of misinformation and possibly to vaccine hesitancy as it is called. Hagen's argument, through his partial representation of the science of mRNA vaccines leads to a self-fulfilling prophecy—the belief we're being misled by our public health bodies.

In fact, I argue the Medicines and Healthcare products Regulatory Agency (MHRA) in the UK, the European Medicines Agency (EMA) in Europe, and in the US the Centers for Disease Control (CDC) and Food and Drug Administration (FDA) via the CDC, all publish expansive and transparent material on vaccines that is, how they work and their side-effects. Indeed, the CDC prepares vaccination centres to manage the risk of anaphylaxis The UK, the US and Europe all have reporting schemes for clinicians and members of the public to record adverse effects after vaccination.

As writers and researchers I argue we need to be honest about the consequences of vaccinating and, not vaccinating people, for example, the long term consequences for people who contract COVID-19 and survive, and I will discuss this below shortly. Moreover, surely intellectual honesty requires us to present both sides of the argument, or we will find ourselves living in a partisan and 'irrational polis'. Thus, and from the perspective of a sociologist, not a scientist, I will now attempt to present the science of mRNA vaccines, and their pros and cons.

Before presenting the science of mRNA, Messenger Ribonucleic Acid, it is important to point out that this technology has been in development since the early 1980s. mRNA and adenoviral vector vaccines were previously in development for the treatment of the Ebola virus as well as cancer. mRNA vaccines were not then, rapidly developed simply to combat COVID-19. They have a wide range of uses, including the treatment of cancer. mRNA is the

molecule that carries a cell's instructions for making proteins. Proteins are the building blocks of the human body and provide the immunological response to virus's and illnesses such as cancer. Without mRNA our bodies cannot replicate our DNA. Thus mRNA instructs protein to maintain our cell function, the process the human body needs for survival.

The mRNA vaccines for COVID-19 send those instructions, the copying and transcription process,² along with a safe (it is a genetic version of the COVID-19 spike protein for biosynthesis in the body, and rapidly degenerates in the body), blueprint of the Sars-CoV-2 spike protein, to the cells so that our bodies recognise the spike protein, thereby triggering an immune response, and in the process producing neutralising antibodies (NABs). This also boosts our B and T-cell levels, which is our natural immune response to disease (Heinz and Stiasny 2021).

Liquid Vessels of Survival with Adverse 'Events': Anaphylaxis: Pfizer BioNtech, Moderna, Johnson and Johnson

Both adenoviral vector vaccines such as the Oxford AstraZeneca vaccine and mRNA vaccines like Pfizer BioNtech and Moderna can have side-effects on vaccination. The adverse reactions are well documented in the UK and in the US the data illustrating mild to severe reactions is also well documented. The Oxford AstraZeneca vaccine was suspected of causing blood clots in the UK. The discussion on this took place in the public sphere among scientists, the media and public. Common side-effects include swelling, pain and bruising at the injection site (British Heart Foundation). Nausea and vomiting along with chills, flu like symptoms and swollen lymph nodes are also relatively common. Anaphylaxis occurs in 1 in 10,000 after the Oxford AstraZeneca vaccine is given.

With regard to the Pfizer BioNtech vaccine, between December 14th and the 23rd in 2020, and after 1,893,000,360 doses had been given, 175 cases of severe reaction were identified. Of these 21 met the case criteria for further investigation (CDC 2020). Interestingly, females have been identified as being at higher risk. This is thought possibly to be to do with hormonal interaction with the vaccine (Sobczac and Pawliczac 2022).

Oxford AstraZeneca and the Risk of Blood Clots

The Oxford AstraZeneca vaccine soon gained suspicion after the vaccine roll-out in the UK where the majority of people received this as their first dose of a vaccine protecting against COVID-19. This was because a small number of people vaccinated with Oxford AstraZeneca were suspected of being affected by thromboembolic events (CVTs and AVTs: cerebral and arterial venous thrombosis)³ and in parts of Europe its use was temporarily halted (the same thing happened in the US with the Johnson and Johnson vaccine).

² Ribosomes read the mRNA sequence and translate that into a genetic code into a specific set of amino acids which grow into long chains that fold to form proteins.

³ <https://www.ema.europa.eu/en/documents/prac-recommendation/signal-assessment-report-embolic-thrombotic-events-smq-COVID-19-vaccine-chadox1-s-recombinant-COVID- en.pdf>.

The risk of suffering a blood clot after receiving the Oxford AstraZeneca vaccine is incredibly low but obviously very serious. For example, one study conducted in Denmark and Norway (Pottegård 2021) in early 2021 found that from the 280,000 people aged 18 – 65 who received the first dose of Oxford AstraZeneca, there were 59 blood clots, 11 more than expected (this was after 28 days of people receiving their first dose). This included a higher than expected number of CVTs: blood clots in the veins of the brain. There was no increase in arterial clots, blood clots in the heart or strokes. In fact research shows the risk of blood clots (thrombocytopenia and blood clots) increases if COVID-19 is contracted by an individual (Hippisley-Cox 2021; Pottegård 2021).

The overall findings of these studies were that the risk from the vaccine producing blood clots was very small. So should we be concerned about the safety of vaccines and how their risks are presented by science and the media, and is the risk in their use worth taking. I would say emphatically yes, but to advance this argument it might perhaps be useful to look at past vaccination programs. MMR, the mumps, measles and rubella vaccine and the Polio vaccine, have in the past at least, helped to eradicate disease but both are beset by controversy.

MMR and Polio: Antivaccinationism and the Struggle to Overcome ‘Alternative Facts’

The very first vaccine was developed in the late 18th century. This was the small-pox vaccine, which was developed from pus taken from a cow pox blister. Understandably perhaps, as word spread this breakthrough was viewed with suspicion and alarm, especially as European nations began making the vaccine mandatory: individual liberty, freedom of choice not to be vaccinated fuelled hostility. Antivaccinationism spread to the US later that century due to immigrants and visitors from Europe.⁴ Thus the anti-vax movement has been with us ever since, rooted firmly as it also is, in the more recent social movements of the 20th century post-war era, in which parents questioned doctors, drugs, and authority in general. More recently, we have seen how antivaccinationism has materialised with regard to the mumps, measles, and rubella vaccine: the controversy caused by the now discredited scientist Andrew Wakefield who faked research in 1998 to show a causal link between the MMR vaccine and autism. This caused vaccination rates to fall with predictable consequences.

This resurfaced during the Trump era (Hewitt 2020a) and fed into the world of post-truth politics. This marked a set-back for a vaccine that was developed in the early 1960s; moreover, it marked a setback for public health. Perhaps the greatest irony, given our current focus on the safety of COVID-19 vaccines, is that the pandemic has dealt a serious setback to global efforts to immunize children against measles and Polio. The Polio vaccine was developed in 1955 and marked a momentous advance against a disease that had terrorised the US, Europe and the World in periodic epidemics for centuries. So where do we go from here with regard to our discussions on vaccine honesty? In my conclusion below I ponder on how we advance in a world where information and knowledge are so diverse and indeed, disparate: the post-truth, post-digital world, in which antivaccinationism seems to have resurfaced with a vengeance.

⁴ [https://www.oah.org/tah/issues/2015/august/vaccination-resistance/.](https://www.oah.org/tah/issues/2015/august/vaccination-resistance/)

The Consequences of not Vaccinating Against COVID-19: Adverse Events

The consequences of not vaccinating against COVID-19 are obvious.⁵ However I want to present some evidence here. As it stands now, deaths from Sars-CoV-2 have reached 6.3 million. The virus can be mild and present with flu-like symptoms or it can lead to respiratory failure and pneumonia. However, even after mild cases of this disease there is growing evidence that there are long term side-effects after contracting COVID-19. Post-COVID- Condition or Long COVID-19 is well documented.⁶ Fatigue, shortness of breath, chest pain, and heart palpitations are well documented.

What is of most concern is the growing evidence of cognitive problems, from difficulty concentrating to depression and anxiety (Ducharme 2022). These are the consequences of not vaccinating. Juxtaposed with alternative strategies, for example, a different COVID-19 paradigm, vaccination seems to be preferable, especially if we take the millions of lives saved from vaccines. Herd immunity is achieved through vaccination not through natural immunity (Vanderslott, Dadonaite, and Roser 2013) which Martin (2021b) tacitly supports when he presents the ‘Great Barrington Declaration’ as an alternative in ‘COVID-Information Struggles’. I have no interest in silencing debate (Martin 2016) or dissent (Liester 2022) on alternative strategies; I am simply perplexed by the alternatives offered.

One million lives in the US are estimated to have been lost through failure to vaccinate. This irony inherent in arguments that present the Great Barrington Declaration as alternative to vaccination because of concerns over mental health in lockdown is obvious. If one million people died unnecessarily in the US either because of vaccine hesitancy or simply because they didn’t receive it in time, how many around the world died unnecessarily due to the unfairness and inequality (Hewitt 2021b) of the vaccine program, big pharma, and the first world’s primary interest: the health of its own citizens. Would it not perhaps be better as sociologists and social epistemologists etc., to focus on ensuring that a global vaccine program is in place for the next pandemic rather than focus on alternative strategies simply in the name of free speech and academic freedom?

Conclusion: What Are We Talking About Here? SERRC and Speaking Different Languages

The preponderance of so many alternative facts, or to put it bluntly, falsehoods about vaccines is arguably fermented by the availability of where we get knowledge and information today.⁷ Vaccine conspiracies can be found anywhere online. A simple dabble on Google will enable us to find these. The dangers of what I will call the digitization of alternative facts is obvious: to paraphrase a famous quote,⁸ misinformation, half-truths and

⁵ <https://abcnews.go.com/Health/statistics-show-risks-vaccinated-COVID-19/story?id=78845627>.

⁶ <https://www.nhs.uk/conditions/coronavirus-COVID-19/long-term-effects-of-coronavirus-long-COVID-/>.

⁷ <https://www.bu.edu/articles/2015/pov-its-time-to-take-the-controversy-out-of-vaccination/>.

⁸ <https://interestingliterature.com/2021/06/lie-halfway-round-world-before-truth-boots-on-quote-origin-meaning/>.

what can be called propaganda travels around the world while the truth is still putting its boots on.

The same can of course be said for what we know as science, technology and medicine. The latter we position with established authority. The government, our public health bodies, big pharma and so on. The State is often seen as the enemy, the purveyor of half-truths itself. Big pharma is seen as corrupt; and only after the big buck on its development and merchandising of newer, better medicines to save us from the existential threats viruses represent. Hence, it often seems to me we are talking different languages under the post-truth condition.

But what of conspiracy theories which exist in the digital ether, who or what they aligned with when they talk about a loss of liberty and malpractice, and even malevolence in the alleged manufacture of toxins in vaccines that may do us harm? Is this a different language or an ideology which feeds under the cover of viral modernity? It is argued that many of these online conspiracy theories are connected to far-right, even neo-Nazi organisations. These talk of freedom, pure blood in a language reminiscent of National Socialism. It is argued that people who have not read the underlying message of these ideological digitized message boards deeply regret taking note of the advice not to vaccinate (Monbiot 2021).

I stated above that I am acutely conscious that my citations and indeed, argument, might not be taken at face-value, and this implied these might be taken as my own propaganda. I can only say that I believe in the progress represented by the projects of science, medicine and technology and in a similar way to Riggio (2022), in our ability to free ourselves from the illusions of Socrates cave through knowledge, even if this is uncomfortable for us,⁹ and involves risk-taking in the dare to know spirit of the Enlightenment.

In conclusion, while some of us seemingly speak and write in different 'languages,¹⁰ writing the truth as we perceive it might be the only way to write history as we see it (Hewitt 2020b). Dialogue and debate are the dialectical tools at our disposal and we should use them to maintain what, despite my argument above, I believe to be a largely rational polis (at least in the academy). In sum, and with regard specifically to vaccine safety, and more pertinently, the safety of science, technology and medicine, it seems there is always the danger of the much theorized Einstein-Frankenstein dichotomy coming into being,¹¹ into reality that is: the opening of Pandora's Box and the unforeseen, unintended consequences of progress. Ironically, it might just be that it has been our own insatiable desire as humans to tame nature and the planet which has led to this pandemic.

⁹ See Van Norden's essay: <https://www.nytimes.com/2018/06/25/opinion/free-speech-just-access.html>.

¹⁰ After reflecting on my article I wonder if we are in fact speaking the same language in exploring the same issues: academic freedom, freedom of speech and the transparency over whether vaccines are safe and if the program was the right strategy. And to mix metaphors, it might be we're on the same page, but coming at the problem from different sides of the road, so to speak, and so our words collide and jar in the central reservation of rational discourse: SERRC.

¹¹ <https://narrativetechnology.wordpress.com/2013/05/22/shelleys-archaic-dichotomy/>.

Indeed, in reading Honigsbaum (2019),¹² who argues exactly this, it seems to me that whether we follow the theories of Popper or Kuhn, the shifting sands of scientific discovery evolve; and despite setbacks, progresses our knowledge of medicine and so our ability to maintain public health. That said we all have the choice either to be proactionary or precautionary in our intellectual approach to our human crises and to the politics and science of vaccines (Fuller 2019). In responding to a question raised by Brian Martin in his reply to Adam Riggio,¹³ I say ‘our intellectual’ approach deliberately, because it seems to me, given the eroding of the authority of the academy, first under the postmodern condition, and now as we live in a post-truth world, that our writing here on SERRC (Hewitt 2021a) is perhaps the only way to maintain our sometimes lonely academic project: the search for greater understanding in the pursuit of truth. However, while we write we maintain the line and strengthen the general intellect, and thus, hope for the future.¹⁴

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¹² Please see: Honigsbaum, Mark. 2019. *The Pandemic Century: A History of Global Contagion from the Spanish Flu to COVID-19*. London: Penguin for an expansive account of pandemics, and how science and medicine has overcome the viruses, that in the past, posed such a threat to our societies.

¹³ Martin questioned whether SERRC is the most appropriate digital platform to educate people on information/misinformation on vaccines.

¹⁴ <https://www.pressenza.com/2020/05/pandoras-box-hope-in-the-time-of-COVID-19/>.

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