Pandemic Ethics and Status Quo Risk*

Richard Yetter Chappell

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Abstract

Conservative assumptions in medical ethics risk immense harms during a pandemic. Public health institutions and public discourse alike have repeatedly privileged inaction over aggressive medical interventions to address the pandemic, perversely increasing population-wide risks while claiming to be guided by "caution". This puzzling disconnect between rhetoric and reality is suggestive of an underlying philosophical confusion. In this paper, I argue that we have been misled by status quo bias—exaggerating the moral significance of the risks inherent in medical interventions, while systematically neglecting the (objectively greater) risks inherent in the status quo prospect of an out-of-control pandemic. By coming to appreciate the possibility and significance of *status quo risk*, we will be better prepared to respond appropriately when the next pandemic strikes.

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Introduction

Conservative assumptions in medical ethics risk immense harms during a pandemic, even if they serve us well enough in ordinary times. Public health institutions and public discourse alike have repeatedly privileged *inaction* over aggressive medical interventions to address the pandemic, perversely increasing population-wide risks while claiming to be guided by "caution". This puzzling disconnect between rhetoric and reality is suggestive of an underlying philosophical confusion. In this paper, I argue that we have been misled by a kind of *status quo bias*[1]—overweighting the significance of the risks inherent in medical interventions, while systematically neglecting the (objectively greater) risks inherent in the status quo prospect of an out-of-control pandemic.[2]

Sec. 1 sets out a possible justification for conservative medical regulations in ordinary contexts, and explains why it reverses in a pandemic. Sec. 2 applies this lesson to explain why various policy

[1] I use this broad term because the precise nature of the cognitive bias involved is not important for my purposes. But it is plausibly the same phenomenon described as 'omission bias' in Ritov and Baron (1992): favouring "harmful omissions over equally [or more] harmful commissions", without good reason. See also Ritov and Baron (1990).

[2] The 'status quo prospect' is the range of possibilities (weighted by their respective probabilities) that could be expected to happen if the particular intervention under consideration is not implemented.

responses to the pandemic that were presented as being undertaken "from an abundance of caution" were in fact objectively reckless with people's lives—and, conversely, why alternative responses that intuitively strike many as seeming "reckless" are better understood as objectively prudent. Expanding upon this theme, sec. 3 defends Human Challenge Trials and other controversial methods for speeding immunity research early in a pandemic, and sec. 4 makes the case for a controversial policy of pursuing *targeted immunity* where it is most needed, early in a pandemic. Sec. 5 explores the ethical significance of "vaccine hesitancy" as a reason against fast-tracking vaccine access. Finally, sec. 6 addresses the common assumption that medical experts are the only relevant experts for determining pandemic policy.

1 The Asymmetry of Risk

Autonomy-restricting medical regulations (that bar access to untested or experimental treatments and candidate vaccines) are sometimes justified on grounds of harm-minimization. This justification requires that the regulations protect the public from

risks of harmful side-effects—such as those that emerged in the Thalidomide scandal—sufficient to outweigh the potential benefits of the barred medical interventions. I take no stand here on whether this attempted justification is in fact typically successful;[3] my claim is just that *if* autonomy-restricting medical regulations are to be ordinarily justified, this would seem the best available explanation. Regulators may argue that, in ordinary circumstances, the status quo is relatively safe and so untested medical innovations are riskier than the status quo. Until they are proven safe and effective, it may be reasonable to assume that the potential risks of untested products outweigh their potential benefits, and so block public access to such products until they pass stringent testing requirements.

Even this argument does not support privileging the status quo as a matter of principle. Rather, the suggestion is just that *if* we're already in a tolerably good state to begin with, highly uncertain gambles may be disadvantageous in expectation, with the potential harms outweighing the potential for reducing status quo risk. Of course, that antecedent assumption—that there's

[3]Cf., e.g., Peltzman (1973) for classical skepticism about the value of the FDA.

little status quo risk to alleviate—may be questionable even in ordinary circumstances.[4] But the crucial point for our purposes is just that the argument is restricted in scope to specific contexts in which *the status quo is relatively safe*. In different contingent circumstances, such as those of an out-of-control pandemic, any sensible underlying normative principle will recommend very different practical responses.[5]

A pandemic reverses the usual asymmetry of risk. Now it is the status quo that is immensely dangerous, and a typical sort of medical intervention (such as an experimental drug or vaccine) is comparatively less so. As a result, we should expect to find many cases in which the potential benefits of innovation outweigh the potential risks. Doing nothing new, and allowing the pandemic to continue unabated, should be recognized as a far riskier prospect—for many individuals, and especially for society at large—than trying experimental or otherwise uncertain solutions for which the risks are orders of magnitude lower than the risk otherwise

[4] It seems implausible for patients suffering from terminal illnesses, for example, and the Right to Try Act of 2017 accordingly carves out an exception for such patients.

[5] This is true whether our underlying principle is strictly risk-neutral, like utilitarianism, or an alternative that's robustly risk-averse and gives extra weight to avoiding worse outcomes—cf. Buchak (2013).

posed by the virus.

For example, scientists may know enough about the general properties of an experimental vaccine to expect that it would have a low chance of serious side-effects, while judging that it offers a decent chance of protection against the rampaging virus. People, especially those at high risk of exposure and/or high risk of serious illness from the virus, could then reasonably judge that trying the experimental vaccine offers them better health prospects than waiting and remaining vulnerable to the virus with certainty. In such a situation, regulatory obstacles unjustifiably violate both individual autonomy and harm-minimization.

The case for medical liberalization in pandemic circumstances is greatly strengthened when we take into account the societal value of information. By tracking the outcomes for those who try experimental vaccines, for example, we could sooner confirm their safety and efficacy, thereby encouraging broader adoption and slowing the pandemic's spread much sooner than has actually been the case.[6] The total societal cost of an ongoing pandemic

[6]As Magnus (2020) cautions, carelessly implemented emergency authorizations risk undermining clinical trials. So it would be essential that priority access be given to those willing to participate in clinical trials (Webb, Shah, and Lynch 2020). Indeed, one way to implement the needed liberalization would simply be to offer massively expanded clinical trials, funded by participants themselves

is so immense that we will typically have overwhelmingly strong reasons to support any policy that could feasibly bring it to an end sooner (so long as this doesn't entail a symmetrical risk of extending the pandemic or causing comparably significant harms). So it bears emphasizing that whenever the risk *to individuals* of pharmacological side-effects is lower than the status quo risk they are otherwise exposed to in the ongoing pandemic, the *societal* risk from such side-effects will typically be entirely negligible. After all, unlike the virus, blood clots (and other possible side-effects) aren't contagious.[7]

This all creates a strong presumption in favour of expanding access to untested or experimental treatments and candidate vaccines in the context of a pandemic. In order to justify continuing such prohibitions in a pandemic, government agencies ought to present a cost-benefit analysis showing that the consensus opinion of medical experts implies that the harm from potential side-effects straightforwardly outweighs (in expectation) the benefit of potential protection against the pandemic. When the status quo is so inherently risky, it is no longer justifiable to privilege

if necessary.

[7]Though "vaccine hesitancy" may be—cf. sec. *5*.

the status quo by default. A positive case must be made on its behalf. In the absence of a positive case for judging the status quo to be definitively safer, reasons of autonomy and the value of information-gathering together provide undefeated and unopposed reasons for preferring a more liberal policy.

2 Caution and Recklessness

The argument of my previous section suggests the need for radical revisions to ordinary judgments about what constitutes *caution* and *recklessness* in pandemic policy. People typically privilege inaction by default, judging pauses to an intervention to be "cautious", while plowing ahead with an uncertain intervention is automatically deemed to be the more "reckless" option. But of course it would not be particularly prudent to sit still on the tracks while a train hurtled towards you, even if the exit ladder was overdue for a safety check.[8] It all depends on how the risks from intervention compare to the status quo risks. So if I'm right that the pandemic reverses the usual asymmetric balance of risk, this should prompt us to also

[8] I borrow this analogy from Govind Persad, as quoted in the *NY Times*: https://www.nytimes.com/2021/03/19/world/europe/europe-vaccine-astrazeneca-interpreter.html, accessed 4/23/2021.

reverse our usual judgments about prudence and recklessness.

Consider the *Joint CDC and FDA Statement on Johnson & Johnson COVID-19 Vaccine*, responding to early indications that one in a million vaccine recipients developed dangerous blood clots: "we are recommending a pause in the use of this vaccine out of an abundance of caution."[9] This echoes similar moves from many European countries a few weeks earlier, suspending their use of the AstraZeneca vaccine on similar grounds (albeit against the advice of the European Medicines Agency and the World Health Organization). Especially for the European nations, with their limited vaccine supply and slow roll-out in early 2021, this decision likely increased the total death count. If so, it seems misleading to describe such recklessness towards the virus as constituting "caution", except in the pathological sense that someone irrationally terrified of pinching their finger in the buckle could count as "cautious" of wearing a seatbelt.

Pathologies aside, it should be clear that what normatively matters is assessing *overall* risk levels, and not just protecting against

[9]https://www.cdc.gov/media/releases/2021/s0413-JJ-vaccine.html, accessed 4/23/2021. At least other (Pfizer and Moderna) vaccines were available in the U.S. during the pause. But my general point remains that reducing overall supply at this crucial time was still reckless rather than cautious so far as risk *from the pandemic* was concerned.

one (comparatively minor) risk no matter the cost. With this correct understanding in mind, then, we can see that governments and their agencies are not generally entitled to describe vaccine suspensions as reflecting "an abundance of caution", unless they can show that the policy actually reduces *overall* risk. If it instead increases overall risk, it would seem more objectively accurate to describe such suspensions as "reckless"—as they would then reveal a reckless disregard of the objectively greater threat posed by the unchecked spread of the virus.

For another striking example, consider the following quote from *The Guardian*: "Germany… was the first country to refuse to allow people over the age of 65 to have the AstraZeneca vaccine because of the absence of evidence of how well it worked in older people, indicating a more cautious approach than most."[10] It is objectively inaccurate to characterize as "cautious" a policy that reduced vaccine access for the most vulnerable age group in the midst of a pandemic.

The UK's Joint Committee on Vaccination and Immunisation recommended against vaccinating children under 16, despite

[10]https://www.theguardian.com/world/2021/mar/15/europes-caution-over-oxford-vaccine-about-more-than-the-science, accessed 4/23/2021.

granting that "the benefits from vaccination are marginally greater than the potential known harms," noting that "the UK public places a higher relative value on safety compared to benefits."[11] But this contrast between "safety" and "benefits" makes little sense when the benefits from vaccines are specifically *safety* benefits, i.e. protection against the risks from Covid, not enhancements above the baseline of good health. The choice wasn't between safety vs. benefits, but between safety vs. safety. So the assessment of which risk was greater should be made fairly, without rhetorically leaning on the scales in this way.

Finally, consider the debate from early 2021 over whether to prioritize the timely delivery of second doses (as per US policy) or to follow the British in delaying second doses in order to allow more of the population to sooner receive a first dose of the vaccine.[12] It seemed common to conceptualize the prioritization of second doses as the "safe" option, even in the absence of cost-benefit analysis or other evidence to suggest that it reduced overall

[11] https://www.gov.uk/government/publications/jcvi-statement-september-2021-covid-19-vaccination-of-children-aged-12-to-15-years/jcvi-statement-on-covid-19-vaccination-of-children-aged-12-to-15-years-3-september-2021, accessed 9/26/2021.

[12] Kadire, Wachter, and Lurie (2021).

risk from the virus.[13] The alternative policy of "First Doses First" was admittedly *higher variance*, in that it conceivably could have yielded results that were either better or worse than the (more predictable) status quo.[14] But lower variance does not *by itself* render an option "safe", as it may instead be invariably bad.[15]

Of course, some readers may judge these particular cases differently. That's fine—I don't here mean to settle any empirical disputes. My purpose in this section is instead to cast doubt on conventional assumptions about *what determines* whether a policy is "cautious" or "reckless". My suggestion is that this cannot be settled independently of the first-order disputes over the merits of the competing policies. Rather than blindly favouring the status quo as intrinsically "safe", we should judge the safer option to be

[13] As evidence that this judgment stems from status quo bias, consider that, had we planned on doing "First Doses First" from the start, it seems unlikely that many would have been clamouring to change this to instead prioritize second doses. The desirability of prioritizing second doses seems suspiciously contingent on it being regarded as the status quo policy.

[14] Alex Tabarrok argues that this is actually a point in favour of FDF: higher variance is a good thing in reversible decisions, since we could have continued on if better than expected, and changed course if it turned out worse than expected. (See the embedded video at https://marginalrevolution.com/marginalrevolution/2021/04/economics-in-one-virus.html, accessed 4/23/2021.)

[15] Again, it may be a reasonable heuristic to regard higher-variance options as "riskier" when the status quo is itself tolerably safe, but as sec. 1 emphasized, this is very much no longer the case during a pandemic. To revisit Persad's analogy, remaining on the train tracks is not the "safer" option, even if there's some chance that trying to escape via the service ladder could lead to an even worse outcome—slipping and falling *before* being crushed by the oncoming train.

whichever one best reduces overall risk. Specifically, I've argued that (1) it would be a serious moral error to focus on a single source or type of risk (neglecting greater *overall* risks) in making such evaluations; and (2) we should be open to the possibility that a higher-variance option may best reduce overall risk. Both of these principles seem to be routinely overlooked in public discourse concerning pandemic risk. We need to chart better paths, and the faint risk that any such attempt *might* lead us astray is simply not a good reason to settle for a disastrous status quo.

3 Human Challenge Trials

The failure to approve Human Challenge Trials for promising vaccines at the very start of the pandemic offers an especially clear example of harmful biomedical conservatism. The Moderna vaccine was designed in mid-January, reported 94.5% efficacy in mid-November, and was finally authorized for emergency use by the FDA in mid-December of 2020.[16]

Vaccine field trials take a comparatively long time, as they require waiting for a sufficient number of participants to suffer natu-

[16]Wallace-Wells (2020).

ral infection to confirm the vaccine's efficacy relative to placebo. Human Challenge Trials instead directly expose participants to a "challenge strain" of the virus, potentially confirming vaccine efficacy much sooner. Bioethicists have vocally championed Covid challenge trials on this basis,[17] and the advocacy organization *1Day Sooner* <1daysooner.org> enlisted over 30 000 global volunteers, while their open letter was signed by moral theorists as diverse as Peter Singer and Christine Korsgaard.[18]

The obvious case against Covid challenge trials was that they involve deliberately infecting people with a potentially deadly virus. That sounds bad, on its face. What if a participant died? That would, of course, be tragic. Yet, at the peak of the pandemic, thousands of Americans were dying of Covid *every day*. Speeding vaccine approval in the slightest (let alone by several months) could have saved *many thousands* of lives in the US alone,[19] not

[17] E.g., Eyal, Lipsitch, and Smith (2020) and Chappell and Singer (2020).

[18] https://www.1daysooner.org/us-open-letter (accessed 4/23/2021).

[19] Firm estimates here are hard to come by. Economist Tyler Cowen has suggested, as a rough first pass, an estimate of 2000 extra deaths per day of delayed vaccine approval (https://marginalrevolution.com/marginalrevolution/2020/12/how-many-lives-will-be-saved-if-the-fda-had-moved-faster.html, accessed 5/22/2021). This estimate would need to be adjusted downward insofar as vaccine manufacturing continued apace even prior to approval. It would need to be adjusted upwards insofar as early vaccinations slow the spread of the virus, and so reduce the 'peak' and not just the length of the pandemic. My argument does not hinge on the precise details; it suffices that the expected social gains from earlier access to vaccines is immense.

to mention a sooner end to all the social and economic harms that accompanied the pandemic.[20] Prioritizing the paternalistic prevention of moderate risks to a few willing volunteers over everything else at stake here arguably constitutes a kind of moral insanity.

This judgment does not rely upon controversial utilitarian premises. For this is not a case of utilitarian sacrifice, violating the rights of a few for the sake of the many. Challenge trials do not involve conscripting the unwilling, or deliberately deceiving participants about the risks. Rather, we're talking about volunteers who freely *choose* to accept the risks in order to immensely benefit the rest of society. To prevent them from making such a beneficial, autonomously-chosen sacrifice makes about as much sense as banning altruistic kidney donations (or charitable donations more broadly). When considerations of autonomy and beneficence both point in the same direction, as they do here, it's very hard to see what further considerations could possibly outweigh

[20]Though less salient and harder to quantify, their significance could well swamp the direct health costs of the pandemic. As a rough illustration: if you lower everyone's quality of life by 1/3 for one year, that translates into *over 100 million* quality-adjusted life-years lost in the US alone. Even if that exaggerates the actual costs by a whole order of magnitude, the sheer scale of any non-trivial population-wide harms remains mind-bogglingly immense.

their combined force.

We should be especially wary of *anti-beneficent paternalism*: forcing individuals, for their own good, *not* to promote the general good. As a general rule, we should not prevent people from performing beneficent acts that help others more than they harm the agent themselves. Reasonable people can dispute the conditions under which individuals might be forced to sacrifice their own interests to better promote the general good. But forcing them in a way that is *contrary* to the general good is straightforwardly unreasonable. Applied to the present case: it is unreasonable to oppose Covid challenge trials out of concern for the participants' interests, or the sheer level of risk that they would be (voluntarily) undertaking.[21]

Some might wonder whether our immense uncertainty and ignorance regarding COVID-19, especially early in the pandemic, would have undermined the possibility of obtaining genuinely informed consent. But this rests on a confusion about the nature of informed consent.[22] In addition to consenting to specific well-

[21]It would also seem inconsistent with how we treat risks in other domains, such as for volunteer nurses—a point emphasized by Chappell and Singer (2020) in their discussion of *risk parity*.

[22]See Steel, Buchak, and Eyal (2020).

understood risks, participants can also consent to a procedure that they understand may expose them to *unknown* risks. So long as researchers do not *deceive* participants, for example by deliberately downplaying the level of risk involved, there need not be anything exploitative about conducting such research. Competent adults freely act in ways that will have unpredictable outcomes all the time; there is nothing inherently problematic about this.

Granted, it would certainly be *unfortunate* if some participants later regretted their decision, or if their consent was the result of some unwitting confusion. We should try to avoid such outcomes insofar as we easily can (e.g., by designing clearer consent forms). But the moral severity of this misfortune should be kept in perspective. It is not a *grave* moral evil (compared to thousands of deaths and millions of reduced-quality life-years), and the mere possibility of occasionally imperfect consent is not sufficiently weighty to register as a serious reason to oppose challenge trials.

Ethical objections[23] to Covid challenge trials thus seem to re-

[23]Here I mean to exclude purely pragmatic objections, e.g., that challenge trials might take longer to set up than their proponents assume. But note that some pragmatic objections depend upon false moral assumptions. For example, worries that challenge trials would not provide evidence of efficacy across all age ranges falsely assumes that older volunteers could not ethically participate. Whether to include older participants depends upon how the added value of more demographically diverse research results compares (in expectation) to the

veal a staggering lack of moral proportionality. Whatever ethical considerations might technically be raised against challenge trials, they involve no *egregious* moral violations, and only the most egregious moral violations could possibly outweigh the extraordinarily strong moral reasons we had to pursue a sooner end to the pandemic. (Of course, if they wouldn't actually serve to achieve this end, then that's another matter. It is not my task in this paper to settle such empirical questions.)

Challenge trials could have had other benefits in addition to speeding initial vaccine approval. For example, given their greater efficiency, it would have been feasible to test the efficacy of a wider range of vaccine dosage regimens—including single doses, fractional dosage, "mix and match" doses from different vaccines, and longer waits between doses—to help inform subsequent vaccine distribution policy.

Moreover, the basic argument for challenge trials carries over to non-vaccine research for which the expected social value of the information gained similarly outweighs the risk of harm to the

higher risk they would face as individuals. If the social value of their participation is sufficiently high, then their heroic altruism should be straightforwardly welcomed. In what other context would the default assumption be to *ban* heroic acts of immense social value?

volunteers. Given the scales involved, this condition will generally be met for *any* research that has a feasible chance of reducing the population-wide toll of the pandemic. For example, it could have been well worth pursuing early research into "variolation", or inoculation via low-dose viral infection. In the historical case of smallpox, variolation reduced fatality rates from 30% down to 1-2%,[24] and medical experts have noted that coronavirus symptom severity seems similarly influenced by initial viral load.[25] The expected value of early-pandemic research into variolation is thus high, as it safeguards against worst-case scenarios in which we're unable to swiftly develop effective vaccines, and it enables policies of Early Targeted Immunity (see sec. 4). Other challenge trials might have tested for cross-immunity from cold coronaviruses, or tested candidate preventative measures such antiseptic nasal sprays.[26] We might expect most such trials to yield negative results,

[24]https://www.nlm.nih.gov/exhibition/smallpox/sp_variolation.html, as cited by Robin Hanson in https://www.overcomingbias.com/2020/03/variolation-may-cut-covid19-deaths-3-30x.html (both websites accessed 5/5/2021).

[25]Rabinowitz and Bartman (2020). Strikingly, these medical researchers added, without argument, that "It would be unethical to experimentally manipulate viral dose in humans for a pathogen as serious as the coronavirus." I think this really demonstrates the need for the present paper: ethicists need to push back against false ethical assumptions that may impede essential pandemic research and hence impede our overall pandemic response.

[26]Cf. Stathis et al. (2021). Thanks to Helen Yetter-Chappell for drawing my attention to these proposals.

but discovering *any* cheap, safe, and effective medical interventions early on could have made a big difference—easily sufficient to outweigh the aggregate costs of all the experimental research.[27] So, again, there were no sufficiently weighty moral reasons to prohibit altruists from volunteering to participate in such socially valuable research.

I would further argue that, in the event that we lack sufficient volunteers to support such socially valuable but risky research, it would be ethical to financially compensate participants at whatever level of payment is necessary to make participation worthwhile for them. Such payment raises worries about exploitation via "undue inducement"—that the prospect of payment risks inducing poorer individuals to participate against their best interests, undermining their capacity to rationally consent. While we certainly ought not to deliberately exploit anyone, it's worth stressing that

[27]This is worth emphasizing, as I know bioethicists who, in conversation, argue that the fact that most trials have negative results suggests that we'd be better off with a heuristic of disallowing research that poses significant risks to participants. This is fallacious: as normative theorists have long stressed, the best choice in expectation need not be the option that has the highest probability of being best (Parfit 1987; Jackson 1991). Even if it were true that 99% of such trials harmed participants without yielding countervailing benefits, the comparatively small harms thereby allowed could easily be swamped by the value of even *one* trial that results in a medical breakthrough saving thousands of lives. So, a conservative heuristic that yielded the "best" result (averting small harms) in 99% of cases may still be disastrous overall, and predictably so.

reducing (or even eliminating) the benefits to participation seems like a very backward way to address this worry—it's unlikely to be appreciated by would-be participants, after all, and for good reason: reducing the quality of the options available to them is not a very helpful thing to do! A more helpful way to address concerns that participation might be against the interests of the participants would be to *increase* the rewards for participation, so that it is more clearly worthwhile (offering a superior risk premium than one finds for everyday risky jobs in mining and forestry, say).[28] Given the immense social value of the research, we could—and should—sufficiently reward the participants for their service as to render it a "win-win" for all involved.[29]

It's again conceivable that, despite our best efforts, some participants end up offering imperfect consent. But again, imperfect consent is merely something that we should try to improve upon inasmuch as we feasibly can. We should not deliberately exploit it, but nor must we prevent it at all costs. It would reveal a gross

[28]Emanuel (2005). Compare: many employers paid bonuses to "essential workers" early in the pandemic, as compensation for the greater risk they were now exposed to.

[29]In terms of *ex ante* expected value, that is. Obviously the ex post results cannot be guaranteed, though risks should of course be mitigated as far as possible by ensuring that the best available medical care is provided, free of charge, to participants who end up needing it.

lack of moral proportion to treat the mere possibility of imperfect consent as a *decisive* consideration that takes lexical priority over all else in a pandemic. In particular, it is not a sufficiently weighty reason to block socially valuable research that could save thousands of lives and improve millions more.[30]

4 Early Targeted Immunity

Something that was largely overlooked in the early stages of the pandemic was the potential value of a policy of *Early Targeted Immunity* for individuals in social roles that entail either an especially high risk of transmitting the virus to vulnerable populations (e.g. medical and elder-care workers) or a high social cost to shifting to remote work (e.g. K-12 teachers). Indeed, a wide range of "essential" service roles, from childcare providers to grocery clerks and Uber drivers, seem likely to yield disproportionately high social value from early immunity, greatly slowing the spread of the virus. Targeted immunity could also be used to contain out-

[30] It's worth stressing that this is not a distinctively utilitarian judgment. One can give weight to non-utilitarian considerations of this kind while agreeing that it would be unreasonable to give them *excessive* weight. My claim that we ought not to give lexical priority to such considerations is a very weak claim, and should be shared by moderate deontologists, for example.

breaks via "ring vaccination": "A [Deliberate Exposure to Induce Immunity] program that is targeted toward individuals who work or live in close proximity to recent or anticipated outbreaks could create a 'ring' of immunity that prevents or reduces spread, and might be able to do so with relatively few participants." (Streiffer, Killoren, and Chappell 2021, sec. 3.1)

Early targeted immunity could be provided through viral inoculation: deliberately exposing volunteers from the target group to a low dose of the virus, followed by strict quarantine until no longer infectious.[31] Depending upon the results of early research into variolation, it's entirely possible that such low-dose exposure could even be in the medical interests of the volunteers, by protecting them against the greater risk of an accidental high-dose exposure. But even if not, it could easily be in the interests of society as a whole, and it would thus be worth compensating the participants in order to make it in their overall interest to provide this social value.[32]

Given their low risk, young adults might be especially keen to

[31] Streiffer, Killoren, and Chappell (2021); Crummett (2021).

[32] See the previous section for discussion of financial compensation and "undue inducement" objections.

secure early immunity and subsequently take on essential service roles (and safely socialize in their time off) rather than being locked down largely out of fear of the threat they would otherwise pose to older members of society. Risks could be further reduced by preceding viral inoculation with experimental vaccination—we now know that the major Covid vaccines are safe and effective, but even from the vantage point of our earlier uncertainty, experts may well have judged that experimental vaccination had high expected value (with significant potential benefit and minimal risk of any serious downside) for anyone who was otherwise certain to become infected with the virus.

This is obviously all speculative. But a central theme of this paper is that high uncertainty alone should not bias us against a pandemic policy proposal. The question is whether—taking the full range of possibilities into account, weighted by their probability—the *expected value* of the proposal should be judged positive or negative on net. This is an empirical question, best answered by the relevant disciplinary experts. As a philosopher, I restrict myself to claiming that this is a question that ought to have been asked, and that we can see this because it's prima facie plausible that the

correct expert judgment could well have been that the proposal in question had immensely positive expected value (however uncertain, or high-variance). Given that this was a reasonable possibility, we can see that to *not even ask the question* was to irresponsibly condemn to death many thousands who very well might have been saved by a more careful survey of the policy options, guided by expert cost-benefit analysis.

5 Vaccine Hesitancy

Perhaps the strongest argument for medical conservatism, at least so far as vaccine policy is concerned, invokes the fear of *vaccine hesitancy*. Already, by early 2021, large swathes of the U.S. public were irrationally reluctant to become vaccinated, and one might reasonably fear that any hint of "rushing" the process, or failing to react strongly to the slightest hint of problematic side-effects, could have further exacerbated this problem.

I have three main responses to this concern. The first is that, as a delicate and highly uncertain empirical matter, it should be evaluated by relevant disciplinary experts, to feed into a cost-benefit

analysis. Recall that the FDA waited a whole month after the release of the successful Moderna trial results to actually approve the vaccine. Did they consult with sociologists and psychologists to determine that this would so assuage the vaccine-hesitant that it would outweigh the thousands of deaths caused by the delay? When European nations over-reacted to rare blood clots by pausing the AstraZeneca vaccine, did they have better reason to expect that this would assuage or rather exacerbate vaccine hesitancy?[33] While one may always speculate that policies that are bad on the merits may have sufficiently good extrinsic ("backlash") effects to outweigh their intrinsic demerits, policy-makers should be guided by actual evidence, and it's far from clear that they were in these instances. Absent such evidence, it would seem more appropriate for public health policy to be decided on the basis of the medical merits rather than ungrounded sociological speculation about backlash effects.

This conclusion may be reinforced by a second concern, which is that the integrity of these institutions requires them to avoid spreading or reinforcing public health misinformation in short-

[33]For evidence that it had the latter effect, see Deiana et al. (2021).

sighted attempts to promote public health goals. This follows from the more general principle that public institutions ought not to engage in strategic deception of the public.[34] The idea that vaccine risks outweigh (either empirically or normatively) the risks of being unvaccinated during the pandemic is an instance of public health misinformation that is troublingly prevalent in our society. When public health institutions implement alarmist vaccine suspensions or other forms of vaccine obstructionism on strategic grounds, this communicates and reinforces the false message that the vaccine risks warrant such a response. Rather than trying to manipulate the public by pandering to unwarranted fears, public institutions have an obligation to communicate accurate information and promote the policies that are warranted in light of that information.

Thirdly, and perhaps most controversially, there's a moral case to be made for prioritizing the interests of the "innocent" (reasonable members of the public who desire earlier access to vaccines to be able to protect themselves and those around them) over

[34] One might think this either on the non-consequentialist grounds that it would violate democratic requirements of respect for the public, or on the consequentialist grounds that strategic deception tends to be counterproductive in the long term.

those of the vaccine-hesitant (who have freely chosen to reject the available protection).[35]

To see this most vividly, focus on some particular individual—call her Sophie—who died from Covid as a result of being deprived of early access to a vaccine that she strongly wished to take. Her government's obstructionism was then causally responsible for her death: had they not blocked her access to the vaccine, she would have survived. Moreover, it's entirely foreseeable that people will die as a result of such policies, so it further seems that the government is *morally* responsible for her death. They have, in effect, indirectly killed her (and others), by blocking access to life-saving vaccines.

Now suppose that someone seeks to defend the obstructionist policy by arguing that it helps to reassure fearful members of society that the vaccines have been scrupulously investigated and are safe for them to (eventually) use. Further suppose, for sake of argument, that delays really would save more lives on net by

[35]I should stress that this distinction does not require imputing ill will or a lack of "good faith" investigation on the part of the vaccine hesitant. Many may be trying their best in a misleading informational environment. Even so, I take it that their views are objectively unreasonable in light of the available evidence, rendering subsequent harms they suffer from Covid "avoidable" in the morally relevant sense. For discussion of the moral principles surrounding avoidable harm, see Graham (2020).

winning over vast numbers of the vaccine-hesitant. We can still ask: is that worth it? Could you justify that to Sophie?

It would be one thing if we had to explain to Sophie that we couldn't save her without endangering a greater number of innocent people (that is, people facing comparably grave threats through no fault of their own). That would seem perfectly understandable, however unfortunate it might be. But that isn't the situation here. Those who refuse vaccines aren't "innocent" in the relevant sense, as they're freely choosing to reject the protection that's available (or would be available if not for their unreasonable attitudes). Those who die of Covid as a result of freely rejecting vaccines are responsible for this outcome: the heightened risk they faced was self-inflicted.[36] And as a general moral principle, we should not harm innocent people, like Sophie, merely in order to convince benighted fools not to harm themselves (Graham 2020).

To further illustrate the principle, suppose that extreme anti-vaxxers, constituting 10% of the population, strap bombs to their chests and threaten to kill themselves *en masse* unless the government immediately and permanently outlaws all Covid vaccines.

[36]This is, of course, compatible with holding that those who misled them also bear responsibility. Moral responsibility is not a zero-sum game.

Should we appease them, and let the pandemic continue since it wouldn't do as much harm as this mob was threatening to self-inflict? Surely not. Even if harms to innocent victims are smaller in magnitude than the threatened self-inflicted harms, the harms to innocent victims *matter more*.

And so it goes in the less-extreme case. The vaccine-hesitant are being foolish and facing self-inflicted risks as a result. It isn't right or fair to harm innocent, sensible people in order to protect fools from self-inflicted risks. It'd certainly be a shame if people died as a result of their own foolish fears, but it's even *more* of a shame that completely innocent people have died through no fault of their own. Contra utilitarianism, we should care more about the latter than the former.

A complication: some innocent individuals may be indirectly harmed by the vaccine-hesitant getting infected and then spreading the illness to them. So we should build into our analogy that some innocent bystanders might also get hurt in the blast. If it would actually save more innocent people to appease the mob, and if it wouldn't have bad long-term effects (incentivizing similar hostage-taking in future)—both big "ifs"!—then it may be that

appeasement is called for in such special situations. But it would seem generally unlikely that the necessary conditions would in fact be met.

So, while we should certainly want to reduce vaccine-hesitancy all else equal, it won't typically be ethical to do so via the means of killing innocent people. And vaccine obstructionism amounts to killing innocent people. The moral bar for justifying such obstruction is thus much higher than policy-makers seem to standardly appreciate.

6 Pandemic Policy Expertise

I want to wrap up this paper with some brief reflections on what it means to "follow the science", or more generally, to take expert opinion appropriately into account when determining pandemic policy.

It is of course vitally important for policy-makers to work with accurate empirical information, both about the current state of affairs and about the possible and likely consequences of candidate interventions. Scientific experts are the best source we have for

providing policy-makers with these essential inputs. But, crucially, science *per se* tells us nothing about what should be *done* with these inputs. Especially when making difficult trade-offs, or evaluating how to respond rationally to risk and uncertainty, there's no reason to expect doctors or scientists to be especially well-placed to respond appropriately to their data.

If we blindly defer to doctors and scientists, the resulting policies will be distorted by whatever implicit normative bridging principles they happen to unreflectively hold. These are likely to be unduly conservative (since most people exhibit a wide range of conservative biases). They may oppose challenge trials and other beneficial policies as "too risky", not because they have a more accurate conception of what the risks actually are, but because they *lack moral understanding* of when risks of that magnitude can be justified. To ward off bias and ill-considered assumptions, policy-makers need to feed their empirical data through a robust process of cost-benefit analysis. It is not enough to one-sidedly consider potential costs of action, and then lazily assume that the status quo is automatically superior.

There are philosophers and decision theorists who have spent

much of their lives thinking carefully about how to make rational decisions under conditions of uncertainty, and how to go about making difficult trade-offs in extremely high-stakes contexts. For policy-makers to wantonly violate all that these experts know about *how to make good decisions* is—and should be more widely appreciated as—every bit as deplorable as wantonly disregarding accurate scientific inputs into the decision-making process.

Conclusion

We've seen that much pandemic policy (and ordinary moral thought about these policies) is rife with status quo bias. Possible risks from medical intervention are inflated in perceived moral significance, while objectively greater risks from the pandemic are comparatively neglected—even when these status quo risks involve thousands upon thousands of excess deaths that could have been prevented. There are presumably systemic reasons to do with institutional incentives that can help explain the causal provenance of this moral disaster.[37] It will be important for social

[37]Most obviously: policy-makers are more likely to be blamed if an intervention goes wrong (resulting in highly salient identifiable victims), whereas they tend to escape blame for inaction that results in grave preventable harms (many of

scientists to clarify the causal mechanisms that reinforce status quo bias in public health policy, and for changes in institutional design to set us on a better track next time around.[38] But a crucial first step is to make the moral case that change is *needed*, as our current institutions have made disastrous and indefensible moral errors. That first step was the task of this paper. I can only hope that this conclusion becomes sufficiently widely appreciated—and acted upon—that we do not end up repeating these mistakes when the next pandemic strikes.

which may be less salient, or only linkable to the policy decision on a statistical basis—we cannot identify which *particular* deaths would have been prevented by earlier access to vaccines, for example).

[38]Thanks to Philip Pettit, in personal communication, for stressing this point.

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