**Anti-anti-vaxx: the fairness-based obligation to defer to the expert consensus**

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The aim of this paper is to outline an account of the proper relationship between scientific consensus, on the one hand, and non-experts’ beliefs on the other. Before addressing that issue, however, it is useful to start with a refresher course in ethical theory. We often think that there are things which it would be ethically preferable for people to do: for example, to smile at their neighbours, to cut down their carbon emissions, or to not spread deadly diseases. Many theorists argue that there is an important distinction within this set of ethically preferable actions: some actions are decent, but not obligatory (for example, smiling at your neighbours), whereas others are not merely decent, but obligatory (for example, not spreading deadly diseases); and some cases are contestable (for example, cutting down on carbon emissions).[[1]](#footnote-1) Non-performance of the latter kind of action seems to involve violating others’ rights or failing in our basic moral duties in a way in which non-performance of the former does not. In turn, it seems that, all else being equal, we can be compelled to perform the second kind of action – or punished for non-performance – but not the first. In principle at least, we might permissibly quarantine people with deadly diseases whereas even the biggest fans of politeness don't think that we can imprison grumpy neighbours.

With this backdrop, let me now turn to the main topic of this paper: the relationship between scientific expert consensus and non-expert belief. As we are all aware, there are various claims which are the subject of a strong scientific consensus, but which are not believed by a significant number of non-scientists; for example, that anthropogenic climate change is occurring, that certain vaccines are safe, or that life has developed via a process of evolution by natural selection.[[2]](#footnote-2) I will assume that claims which are subject to a strong scientific consensus are more likely to be true than claims which are not (I return to some complications below). As such, this divergence suggests that some in our community are routinely failing to believe what they ought – in an epistemic sense – believe. Nonetheless, there are often very good, liberal reasons to tolerate such divergence; if someone believes, for example, that humans were created by God, she does not thereby necessarily pose a threat of harm to others. However, sometimes divergences can be “socially relevant”, in the sense that failure to believe the relevant claims may have important consequences for others; my belief that some vaccine is unsafe may lead me not to vaccinate my children, posing a threat to your children. If so, we have some legitimate interest in wanting non-experts' beliefs about socially relevant claims to match the scientific consensus: deference would be “ethically preferable”.

Does the claim that it would be ethically preferable for non-experts to defer to experts on issues of social relevance express a demand of decency or an obligation? In this paper, I sketch a (very tentative) argument that, at least as long as certain conditions hold, it states an obligation, related to our political obligations of fairness. More snappily, I suggest we each have a political obligation to defer to expert testimony. Before going on, it must be stressed that settling this question does not immediately lead to any normative recommendations. We might think that even if you are obliged not to spread deadly disease, it would be all-things-considered wrong (or maybe just inefficient) to quarantine you. So, too, we might think that it would be wrong (or counter-productive) to force you to defer to experts. Furthermore, my claim is not that people who don't defer are ethically blameworthy. We may fail to meet our obligations for reasons which are outside our control; just as badly designed tax laws may make it impossible for us to discharge our obligation to contribute our fair share to the social good, so, too, badly designed social-epistemic institutions may impair our ability to meet our obligations of epistemic deference. Still, my question is interesting, because it may change how we think about our social-epistemic environment. I return to this issue in the conclusion

Preliminaries over, I will approach my question in a roundabout way. First, I set out some reasons why individuals might not defer to experts. Second, I show how familiar frameworks in moral and political philosophy for thinking about some of these reasons, those which involve "free-riding", relate to the epistemic case. In the third section, I clarify my arguments against possible objections. Finally, I consider some possible implications of my arguments.

1. Why not defer

There is widespread consensus among the scientific community that the "triple-vaccine" for measles, mumps and rubella (MMR) is both highly effective - at least, as long as a sufficiently high proportion of the population is vaccinated - and safe. As such, all parents are encouraged to vaccinate their children. However, many parents do not vaccinate their children. One key refrain in analysis of this phenomenon of vaccine-refusal is that parents are concerned that the vaccine might cause autism.[[3]](#footnote-3) This concern stems from the work of Andrew Wakefield, a British doctor who published a paper in the *Lancet* suggesting that there *might* be a causal link between the vaccine and autism.[[4]](#footnote-4) The ins-and-outs of the scientific issues here are complex (and further complicated by their relationship to various problems in publication ethics). However, it is safe to say that the vast majority of the scientific community think that Wakefield is wrong; there is a strong scientific consensus that the triple vaccine does not cause autism. Many analyses of the MMR controversy view it, then, as a kind of epistemic failure. Some analyses treat vaccine-refusal as a social-epistemic failure; for example, a failure by scientists to communicate properly or a failure by the media to report properly.[[5]](#footnote-5) Other analyses treat the case as a mass individual-level epistemic failure; for example, as the result of a wrong-headed over-estimation by parents of their ability to grasp complex scientific issues.[[6]](#footnote-6)

Of course, it is entirely possible that these explanations are correct. (Indeed, it’s also possible that other issues, such as parents’ difficulty in taking time off work may influence vaccine-uptake rates.) Still, I want to suggest that the background assumption that vaccine refusal must involve some kind of epistemic failing is problematic. Doing so overlooks (at least) six reasons for which a parent who is adequately informed of the scientific consensus might refuse to vaccinate a child, none of which involve clear epistemic (or practical) irrationality. At the end of this section, I turn to the implications of this fact for the broader normative question of this paper.[[7]](#footnote-7)

The first two reasons are grounded in the familiar distinction between "is" and "ought".

First, one might reason that if others vaccinate their children, then there is no reason to vaccinate one's own children: regardless of whether you vaccinate your child, herd immunity will be maintained, so there is no point in taking a day off work to look after a snotty, crying baby. Clearly someone who reasons this way may be wrong in her assumption that others will vaccinate even if she does not; furthermore, her actions may be unethical (more on this later). Nonetheless, such “free-riding” is not necessarily epistemically irrational nor practically irrational.[[8]](#footnote-8) Second, more generally, one may object to the vaccination on other grounds; for example, one might have religious objections to the use of animal products in the vaccine.

Again, such reasons not to vaccinate raise difficult ethical issues, but they are clearly consistent with believing, with the consensus, that the vaccine is safe.

The other reasons for vaccine-refusal, by contrast, do involve some kind of refusal to accept the claim that the vaccine is safe as a premise in further reasoning. The third reason rests on the distinction between "population-level" and "individual-level" knowledge. Imagine a parent who reasons as follows: “clearly, there is still some possibility that the vaccine will have some side-effects. Therefore, when the scientists claim that the vaccine is safe, strictly they are making a claim about the overall likely balance of benefit and harm associated with taking the vaccine. That is to say, their claim is that the *average* individual is better-off taking the vaccine than not. I concur with that claim. However, I have some reason to believe that my son is particularly susceptible to suffering some side effect. As such, I suspect that *he* stands to lose more than he gains from the vaccine”. Of course, this parent could be wrong in his belief that his son is “special”. Still, the general pattern of reasoning is not obviously epistemically irrational: it is entirely possible that some medical intervention might be in the interests of the “average” individual in the population, but not in the interests of a specific individual. As such, it might be epistemically rational to refuse to treat a claim about the average case as applying to a specific case.[[9]](#footnote-9)

The fourth and fifth reasons for vaccine hesitancy relate to the epistemology of trust.

Reason four concerns what I call "folk philosophy of science mistrust". I assume that deference to the claims of some expert community depends on two assumptions: first, a sociological assumption, that the community is organised in such a way that members of that community are likely to make (or agree on) claims only when those claims meet certain epistemic standards; second, an epistemological assumption, that these epistemic standards are such that the non-expert should accept the relevant claims.[[10]](#footnote-10) (To see why these two can come apart, note that I might happily admit that the community of astrologers is organised such that they only assert claims when they meet the “epistemic standards” of astrology, but think those standards should not govern my own beliefs).

Let us assume, then, that some parents hold the second assumption about the epistemic standards of biomedical science. They don’t, for example, share the worry about population-to-individual inferences, but think that, in general, they should defer to claims which are established relative to the norms of biomedical science. Still, it is entirely possible that they might not trust the *actual* community of biomedical scientists, because they believe that the *actual* community is not set-up such that its members make claims only when they meet the relevant epistemic standards. Indeed, they might have this concern *even if* the community is in-fact well-ordered. This can occur when the non-experts hold what I call a “folk philosophy of science” – i.e. an account of how scientific communities should be ordered – which differs from the correct account of how scientific communities should be ordered. In our case, for example, imagine that a parent believes that a well-ordered scientific community is driven solely by a concern for the truth, regardless of consequences, and is characterised by a high degree of receptivity to the views of mavericks. She then reads of the treatment of Wakefield, apparently drummed out of the community for his heterodox views, and notices that a key concern of many leading epidemiologists seemed to be that Wakefield’s work threatened continued control of measles (a concern which is entirely independent of the truth of Wakefield’s claims). Faced with this evidence, the parent might decide that the actual community differs systematically from the ideal community, and, as such, refuses to defer to the consensus. Of course, we might think that her “folk philosophy of science” is false.[[11]](#footnote-11) Nonetheless, given the idealised and misleading views of science to which we are all exposed, it is easy enough to see how she might have formed that view. I suggest, then, that it is (at the very least) unclear that her failure to defer to the experts is straightforwardly epistemically irrational; rather, it seems a good example of careful epistemic practice.

One obvious response to this “folk philosophy of science mistrust” is that there can be reasons to trust which do not rest on a model of how communities *ought* to operate, but, instead, on the track-record: I may have no clue how a bicycle workshop “should” operate, but the workshop’s past record of successfully fixing my bike may give me good reasons to trust them this time around.[[12]](#footnote-12) Similarly, then, we might argue that, even if non-experts have a false “folk philosophy of science”, they also have strong inductive evidence that the biomedical research community should be trusted. Several authors have recently pointed out, we may have reasons to think that research communities are untrustworthy in the sense that the research agenda is skewed in various ways; in our case, for example, towards identifying biochemical treatments for disease, rather than the underlying social and political determinants of health. These arguments are interesting and important, but a wish that the experts had studied a different topic doesn’t obviously justify a refusal to defer to what the experts say about the topics they have studied.[[13]](#footnote-13)

Even with this caveat in place, note that the appeal to “track record” reasons for trust clearly relies on an assumption: that the experts do, in fact, have a good track record. It is, unfortunately, unclear how good the track record is in our case. There are, after all, some cases – routinely referenced by anti-vaxx communities – where the biomedical research community was wrong. In the UK, for example, vaccine scepticism is often motivated by memories of the thalidomide scandal.[[14]](#footnote-14) It is not, then, contrary to the evidence to think that there is a chance that the community is wrong again in this case, and, as such, to withhold trust.

One might worry about the epistemic status of such meta-inductions: the fact that the medical establishment has been wrong in the past is consistent with it being very unlikely that it is wrong in this case. This leads to the trickiest set of problems of all. We are, by now, all familiar with debates over "inductive risk", and, in particular, how the fact that scientists (apparently) take “inductive risks” may leave a role for non-epistemic values in science.[[15]](#footnote-15) Let me zoom out from the details of these debates to note a far broader point they illuminate: that some claim is "well-established" in some circumstances does not imply that it is "well-established" in all circumstances. Rather, our willingness to act on claims which might be wrong does (and should) vary with the non-epistemic costs of different sorts of error. In general, the greater the costs of acting on a false positive, the more evidence we should demand before accepting some claim.

Consider, then, the vaccine case.[[16]](#footnote-16) Imagine a parent who accepts that claims about vaccine safety and efficacy are well-established, relative to the epistemic risks which scientists do (or should) be willing to tolerate. However, she also reasons that the stakes in her situation – where her own child’s health is at risk – are such that she should demand *higher* standards than the scientists; as such, she refuses to accept the scientifically well-established claim. I suggest that, on the face of it, such refusal to defer to the experts is not necessarily epistemically irrational, insofar as the parent does not deny either the evidence or the consensus. (You might think it is practically irrational in the sense that not accepting the claim the vaccine is safe seems tantamount to accepting that it is not safe, and acting on this claim also carries risks. I don’t disagree. Still, the core issue here is that we cannot say that the parent has engaged in epistemically irresponsible reasoning).

Although I think that all six of these (philosophically interesting) concerns can be found in actual debates over vaccine safety, I don't know is how important each is. My analysis is, then, entirely compatible with thinking that the actual phenomenon of non-vaccination has much more to do with, say, the media not reporting claims than with parents understanding but not responding to claims.[[17]](#footnote-17) Why, then, are these possible explanations interesting? At the beginning of this paper, I distinguished two ways to think about non-experts' deference to the scientific consensus: as something nice, but optional, or as something obligatory. In this section, I have distinguished between two broad classes of vaccine-denialism: one class involves a willingness to accept what experts say as correct, but a refusal to act on those claims; the second class involves a failure to accept what the experts say in the first place. My first two possible reasons for denialism speak to the first kind of refusal; the last four concern the second. These last four considerations, in turn, seem to imply that, even when the expert community is well-functioning, we may fail to defer to experts without violating basic norms of epistemic rationality. As such, they seem to undercut the claim that we are obliged to defer to the experts; refusing to defer is, it seems, consistent with our epistemic obligations. We seem, then, left with the weaker claim that it would be a nice thing for non-experts to defer to experts - like smiling at your neighbours - rather than something obligatory.

1. Obligations to defer

However, I will now argue that even if there is not a straightforward epistemic obligation to defer to the experts, there may still be another sort of obligation, which I will call a “political” obligation, to do so. To explore this option, consider, again, the first possible grounds for vaccine refusal set out above: the hyper-rational parent who reasons that, as long as others do vaccinate their children there is no point in him vaccinating his own children. Of course, such a chain of reasoning might be challenged on epistemic grounds – how can you be certain others will vaccinate their children? – but it is not inherently epistemically problematic. Furthermore, it is not prudentially irrational; indeed, in some sense, such reasoning is a paradigm form of prudential rationality. Nonetheless, there is a familiar argument that refusing to vaccinate your children on these grounds is ethically problematic. In not vaccinating one is enjoying a public good - herd immunity - without paying one's fair share of the costs necessary for maintenance of that good - vaccinating one's children. The prudential anti-vaxxer is "free-riding", and, hence, violating norms of fairness.[[18]](#footnote-18) Assuming that we have a basic obligation to treat others fairly, we have an obligation to vaccinate our children. Of course, this argument has to be handled carefully: for example, there is disagreement over how to analyse obligations of fairness where enjoyment of the public good is non-voluntary, as in the case of herd immunity. Furthermore, any obligation to vaccinate may have to be balanced against other ethical considerations, such as religious freedom, or more general concerns about the proper role of the state in family life. Still, very many political philosophers and bio-ethicists agree that we can (and often do) have fairness-based obligations to contribute to public goods, even when doing so is not in our prudential interests (narrowly construed).

The fairness argument generates an obligation to vaccinate for those parents who *do* defer to the consensus. What, though, can it tell us about whether parents *ought* to defer to the consensus? Consider the following argument:

1. As a matter of fact, there is widespread deference to scientific experts in our community
2. Such widespread deference generates various, non-rival and non-excludable benefits for all members of society: i.e. they generate a public good
3. Each who benefits from a public good has a *prima facie* political obligation of fairness to sustain that good

Therefore, we each have a *prima facie* political obligation to defer to experts

I have just discussed premise 3 in the context of vaccinating one’s children. Of course, that premise could be attacked. However, I will simply assume that the consensus view in political philosophy is (broadly) correct. Note that if we cannot assume that premise, we might have even more serious problems – lack of a decent account of the legitimacy of many State actions – than non-experts’ failure to defer to expert testimony.

Premise 1, by contrast, might seem very shaky: after all, the entire concern driving this paper is, precisely, that in some cases non-experts do not defer to experts. However, high-profile cases of non-deference are consistent with a general tendency to defer to expert opinion (particularly, consensus among experts). I claim that there is such a tendency. Consider some examples: we believe the experts who tell us that smoking cigarettes causes lung cancer, that the aeroplanes won't fall out of the sky, and that the weather tomorrow will be sunny. Indeed, it is notable that even those who seek to disrupt the processes by which non-experts learn from experts – so-called, “agnotologists” – often adopt strategies which assume that non-experts do defer to expert consensus: for example, rather than deny that we should defer to experts, they set up their own “experts” and they argue that the apparent consensus within the scientific community is real. This is not a flippant point. Agnotologists are, I suggest, the real experts in social epistemology; unlike philosophers, their livelihood depends on understanding how knowledge actually moves through societies.[[19]](#footnote-19) At a more abstract level, one might argue that such deference is “practically necessary” in modern societies, because such societies require us to use complex forms of knowledge, and are characterised by a division of epistemic labour. Taken together, then, these considerations suggest that Premise 1 may be less controversial than familiar claims about a “crisis of trust” suggest.

To ground a fairness-based obligation for deference, we need to do more than show that each does often defer to experts. Rather, we need to establish the existence of a “public good”: that patterns of deference generate some further good we all enjoy, where that enjoyment is both "non-rival" (i.e. me getting more doesn't mean you getting less) and "non-excludable" (i.e. the benefit cannot be "gated off" for a select few). This is not trivial: it is entirely possible that patterns of deference benefit each one of us individually, but not generate a "public good", akin to "herd immunity". In that case, we might each have a good reason to defer to the experts, but nothing like a fairness-based obligation to do so. I suggest, however, that the patterns of deference do generate such a shared good: as a result of such patterns, our lives are both predictable and stable, because we can better predict how others will respond to aspects of our shared social-epistemic environment. A shopkeeper who knows that others will, in general, defer to the expert opinion of weather forecasters can predict she needs to order more umbrellas; a citizen who knows that epidemiologists' advice on the dangers of smoking will be widely believed can assume that others will listen to her arguments for banning smoking in public; we can all make some well-grounded predictions about how others will respond to claims made in public debate. In turn, these goods of predictability and stability are both non-rival (me “taking advantage” of Amy’s predictability doesn’t leave less predictability for you) and non-excludable (I cannot easily prevent you making use of the fact that Amy is predictable).[[20]](#footnote-20)

I do not mean to downplay the range and depth of disagreement in our society. We cannot blithely assume that others will believe what the scientists say and plan our lives accordingly. However, I do suggest that premise 1 and 2 taken together do capture one important aspect of how we live together, and our attitudes towards experts. Therefore, there is an important parallel to be drawn between two arguments: one, familiar in political philosophy and bio-ethics, shows that people who believe that a vaccine is safe are obliged to vaccinate their children; the second, sketched above, shows that people who benefit from widespread deference to expertise should believe that vaccines are safe. Both arguments appeal to fairness considerations: in both cases, the argument generates a "political" (rather than prudential or epistemic) obligation. Specifically, in the latter case, I have suggested that we have a “fairness-based” obligation to defer to expert testimony; in refusing to defer we are making use of a public good – others’ willingness to defer to the experts – while refusing to “do our share” in maintaining that good. Note that, like the fairness-based obligation to vaccinate one’s children (if one believes that the vaccine is safe), this obligation may need to be balanced against other ethical concerns; it does not imply, for example, that we can simply lock up anti-vaxxers. Still, it seems that we can say that deference would not merely be ethically preferable, but, at least *prima facie* obligatory.

1. The epistemic and the political

Imagine that we live in some perfectly fair and just society. However, this social harmony has arisen only out of a set of social practices centred around some patently false claim, such as that the Universe was created by little demons in 1888. I have strong epistemic reasons to doubt such a claim. Nonetheless, a friend argues with me as follows: “you have an obligation to ensure that our community continues to function harmoniously; as such you have a strong political obligation to continue to believe that the Universe was created by little demons”. Many of us would, I think, find this suggestion patently absurd. I may have some obligation to keep quiet about my beliefs (although even this is arguable), or to state them in a respectful, careful manner. However, it seems odd to say that my political obligations provide me with a reason to believe some epistemically unjustified claim. It might seem in turn that my argument above is prone to the same sort of concern: we cannot have a *political* obligation to *believe* claims. This section explores and addresses this concern.

Broadly, I suggest we can distinguish two sources of objections to my conclusions. First, one might hold that epistemic voluntarism – i.e. the claim that beliefs are subject to our will – is false. Given the “ought implies can” principle, then, it does not make sense to say that we ought to believe a certain class of claim.[[21]](#footnote-21) However, this objection is unconvincing. Even if it is true that we cannot simply “choose” what to believe, it is still possible for us to engineer social situations and to cultivate frames of mind which increase our chances of obtaining certain sorts of beliefs. Of course, such interventions are not guaranteed to succeed, but there is no reason to think that they are bound to fail. Even if epistemic voluntarism is false, we can restate my conclusion as the claim that we have a political obligation to engineer a situation where we acquire certain beliefs or habits of mind. (That is to say, I see no argument against “indirect” voluntarism, even if there is a problem with “direct” voluntarism).

The second objection is more important: one might hold that we can, reasonably, talk of what we “ought” to believe, but hold that such claims depend solely on epistemic reasons, rather than ethical or political reasons. In response to this concern, note that my arguments do not deny that our beliefs should, in large part, be guided by a straightforwardly epistemic reason: that there is consensus within a scientific community. This marks an important difference between my arguments and the “little demons” case: the obligation to defer is not based *solely* on political considerations, because, I assume, the relevant obligation is only operative when the expert community is, in fact, trustworthy. Therefore, my argument is not intended to suggest that what we should belief should be untethered from our evidence. Rather, my claim is that in cases where there are both epistemic reasons in favour of believing some claim and considerations against believing that claim (including other epistemic considerations, such as the track record of the relevant epistemic community), we should disregard the second set of reasons, on broadly “political” grounds.[[22]](#footnote-22)

I am not, then, saying that we should believe whatever would be “politically best” for us to believe, regardless of the evidence. What I am claiming, however, is that we should sometimes believe claims, even when we have epistemic reasons not to believe them. That is to say, my conclusions deny that we should enjoy epistemic autonomy. How should we assess this result? Note that any claim about our obligations is a claim that certain forms of autonomy should be limited. For example, an obligation to vaccinate our children limits our parental autonomy. This is simply a re-description of our obligation. It is only a knockdown counter-argument against such an obligation if we assume that parental autonomy should never be curtailed. However, no-one believes that parental autonomy is entirely sacrosanct. Similarly, to object to my argument on the grounds that it limits epistemic autonomy simply raises the question of how much we should value epistemic autonomy. Valuing epistemic autonomy on purely epistemic grounds seems odd; after all, we would often be far better-off epistemically speaking simply deferring to others. It seems, then, that the value of epistemic autonomy must itself be understood in ethical or political terms; say, as necessary for self-development or societal advancement. No doubt those are worthy goals, but as ethical and political goals, they can be balanced against other ethical and political concerns, such as, I suggest, demands of fairness.

Conclusion

A recent spate of books and papers has argued that many apparent failures to defer to experts – often framed by the media and commentators in simplistic terms of “scepticism about science” – are, in fact, more complex than they first appear. When we consider the sheer complexity of the ways in which we must judge expertise, and the important – and proper – roles for non-epistemic values in shaping the production, dissemination and reception of scientific knowledge, then we can better understand how non-experts may rationally fail to defer to experts. As Section 1 of this paper showed, I think that such arguments are correct, in the sense that non-experts’ refusal to abide by the consensus may be grounded in complex epistemic and ethical norms. However, I want to add a coda: it does not therefore follow that all disagreement is, thereby, to be tolerated or accepted. Disagreement, dissidence and non-compliance from social practices can be, in some sense, reasonable – it really is a bit silly to vaccinate your child if herd immunity obtains – but politically unacceptable. I have argued that certain failures to defer to experts may be like that.

What follows? I don't know. It certainly does not follow, for example, that it would be ethically permissible to lock-up vaccine denialists in Maoist re-education camps. Maybe, once we take the all epistemic, ethical and political considerations into account, all that follows is a reaffirmation of familiar claims about the importance of public education and public debate. However, I do suggest that thinking in terms of obligations may help us reshape how we frame certain debates. Individuals’ ability to meet their political obligations is always structured by broader institutions and practices. Sometimes, we cannot help but free-ride, if, for example, we cannot get the day off work to vaccinate our children. One key theme in some recent writing has been whether we can characterise “normatively inappropriate dissent”, and, if so, how we should respond. My model proposes a way of thinking about some of these issues: certain forms of dissent are problematic not only because they have deleterious consequences (both epistemic and non-epistemic), but because they involve engineering social-epistemic situations where citizens cannot meet our political obligations. Thinking in terms of obligations does not solve our problems, but enriches our normative vocabulary for thinking about them.

1. For a classic discussion of these issues, see Judith Jarvis Thomson, ‘A Defence of Abortion’ in Kuhse, Schüklenk and Singer (eds.) *Bioethics: An Anthology*. Blackwell, 3rd Edition 2015 [↑](#footnote-ref-1)
2. For a useful and up-to-date summary of many such cases see Intemann and de Melo-Martin, *The fight against doubt* (Oxford University Press) [↑](#footnote-ref-2)
3. For a (partial, but useful) overview of these issues,, see See T. Boyce, Health, Risk and News: the MMR Vaccine and the Media (New York: Peter Lang); R. Horton, MMR: Science and Fiction (London: Granta); M. Fitzpatrick, MMR and Autism (London: Routledge). [↑](#footnote-ref-3)
4. A.J. Wakeﬁeld et al., ‘Ileal-lymphoid-nodular Hyperplasia, Non-speciﬁc Colitis, and Pervasive Developmental Disorder in Children’, The Lancet, [↑](#footnote-ref-4)
5. Horton *op cit* [↑](#footnote-ref-5)
6. T. Sorell, “Parental Choice and Expert Knowledge in the Debate about MMR and Autism” (in A. Dawson and M. Verweij eds *Ethics, prevention and public health* (Oxford University Press, 2007)) [↑](#footnote-ref-6)
7. Note that what follows leans heavily on my own work, and far richer and more recent discussion of vaccine hesitancy in the work of Maya Goldenberg. See S John “Expert testimony and epistemological free-riding” *Philosophical Quarterly* 61(244), July 2011, 495-517, and Goldenberg, Maya J. "Public misunderstanding of science? Reframing the problem of vaccine hesitancy." *Perspectives on Science* 24, no. 5 (2016): 552-581. [↑](#footnote-ref-7)
8. For in-depth discussion of “free-riding” in vaccination cases, see A Dawson (2007) ‘Herd protection as a public good: vaccination and our obligations to others’ in Dawson, A. & Verweij, M. (eds.) Ethics, Prevention and Public Health (Oxford University Press, 2007). [↑](#footnote-ref-8)
9. Goldenberg, 564-566 discusses these issues in great detail. For some of the more general issues here see Fuller, Jonathan, and Luis J. Flores. "The Risk GP Model: The standard model of prediction in medicine." *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 54 (2015): 49-61. [↑](#footnote-ref-9)
10. For more on this model of trust, see John, S. (2018). Epistemic trust and the ethics of science communication: against transparency, openness, sincerity and honesty. *Social Epistemology*, *32*(2), 75-87. [↑](#footnote-ref-10)
11. For reasons to think that there is no general account of the proper place of dissent in science see Inteman and de Melo-Martin *op cit* [↑](#footnote-ref-11)
12. See A.Goldman, ‘Experts: Which ones should you trust?” in his *Pathways to knowledge* (OUP, 2002) for an in-depth account of the possibilities of using track-record to assess expertise [↑](#footnote-ref-12)
13. (Note that this is one point where I depart from Goldenberg: as I read her analysis of the MMR case, one key problem was a lack of responsiveness from scientists and policy-makers to public concerns. I agree that such a lack of responsiveness is problematic, and may create circumstances of mistrust. However, I am less clear why such concerns would justify a failure to accept the scientists’ claims). [↑](#footnote-ref-13)
14. See Boyce *op cit* [↑](#footnote-ref-14)
15. See, *inter alia*, Rudner, R. (1953) “The scientist qua scientist makes value judgements” *Philosophy of Science*, 20(1), Douglas, H. (2000). Inductive risk and values in science. *Philosophy of science*, *67*(4), 559-579, Wilholt, T. (2009). Bias and values in scientific research. *Studies in History and Philosophy of Science Part A*, *40*(1), 92-101. [↑](#footnote-ref-15)
16. For a more detailed account of this argument, see John, S (2012) *ibid* [↑](#footnote-ref-16)
17. See Goldenberg *op cit* for an attempt to argue in some more detail that actual hesitancy does involve a complex form of reasoning. Note that, for my purposes, the explanation of *actual* hesitancy is less interesting than the *possible* explanation. [↑](#footnote-ref-17)
18. For the details of such arguments, see Dawson *op cit* [↑](#footnote-ref-18)
19. For a longer version of this argument, see John 2018, op cit [↑](#footnote-ref-19)
20. Note an interesting twist here: the purely prudential free-rider case, discussed at the start of this section, clearly involves free-riding on this pattern of epistemic deference. It’s only because the free-rider can assume that others will defer to the experts that she is able both to defer to the experts and to know that there is no point in vaccinating her own child.) [↑](#footnote-ref-20)
21. For the classic statement of such concerns, see Williams, Bernard. “Deciding to Believe.” In *Language, Belief, and Metaphysics*, ed. Howard E. Kiefer and Milton K. Munitz, 95-111. Albany: SUNY Press, 1970 [↑](#footnote-ref-21)
22. Note (to be completed properly later): I can’t quite grasp how these comments relate to the huge on-going debates over the proper place of non-epistemic values in science. I am a bit lost here, insofar as the claim is stronger than that we can use “non-epistemic values” to respond in cases of underdetermination, etc, and, yet, doesn’t look like standard denials of the “epistemic priority thesis” (insofar as the epistemic retains a kind of priority!) [↑](#footnote-ref-22)