

Brian Martin, "Vaccination debates," in Kevin Dew and Sarah Donovan (eds.), *Encyclopedia of Health Research in the Social Sciences* (Cheltenham, UK: Edward Elgar, 2023), pp. 340–343

Vaccination debates

Introduction

Is vaccination one of the greatest contributions to public health in the past century, or did most of the decline in deaths from infectious diseases occur before mass vaccination? Does the measles–mumps–rubella (MMR) triple vaccine cause autism? Should coercive measures be taken to promote vaccination, or should individuals and parents be allowed to choose? Should the advice of medical and government authorities be followed without question?

These are some of the questions involved in what can be called the vaccination debate or vaccination controversy, which refers to disagreements about the benefits, risks, ethics and politics of vaccination. This is an area where disagreement has occurred for decades, and in which many of those involved become highly passionate.

With the advent of COVID-19, the issue of vaccination has come to the forefront of public commentary and personal decision-making. In this context, it is easy to forget that the main debates, at least for recent decades, have been over childhood vaccinations, for example for polio, chickenpox and pertussis.

It is useful to think of debate and disagreement as occurring in different forums. Within the pages of scientific and medical journals, contrary viewpoints are usually expressed in polite scientific terms, while behind the scenes, authors, peer reviewers and journal editors may be clashing over submissions to journals. In the pages of newspapers, televised reports and social media, there is what can be called a public debate, some subject to editorial control and some not. This also goes on in public meetings and in conversations within families, between friends and work-mates, and in consultations with doctors.

To refer to ‘debate’ suggests that there are two sides, each trying to win an argument. To some extent this occurs, especially in public forums, but in many private conversations there is a thoughtful exchange of perspectives, concerns and options. All this activity contributes to the flux of ideas and potentially to policy choices.

The vaccination controversy is highly polarised. There are two main sides, each with a highly coherent position. Proponents

say that vaccination is highly beneficial, poses minimal risks, is ethically responsible, and that policy decisions should be made by governments on the advice of medical experts (Andre et al., 2008; Offit and Bell, 2003; Plotkin et al., 2018). In contrast, critics say that the benefits of vaccination have been exaggerated, there are significant risks, it is ethically questionable, and decisions should be made by individuals and parents (Anonymous, 2022; Cernic, 2018; Habakus and Holland, 2011). These positions come in a package, and deviations from the package are rare among those taking a public stand. It is unusual to find a scientist who says, for example, that some routine childhood vaccines are highly beneficial, but others do more harm than good.

The driving force behind polarisation is the public debate, with credibility and policy at stake. Any statement by a proponent that shows a weakness – such as that parents might be wise to space out their children’s vaccinations – is likely to be trumpeted by critics and denounced by some proponents.

You can be a participant in public debates by adding your voice to any of a number of forums. You can also be an analyst or social scientist, examining the issues and the debates. That is the focus here. If you want to understand the debate itself, how can you go about it?

Social analysis

If you undertake a social analysis of the debate, you can do so without having a personal view about vaccination, but you can also do so while being committed to a particular perspective or even being a strong advocate. As will be seen, advocacy and analysis can coexist, but there are risks in mixing them.

It is important to be aware that when it comes to vaccination, it can seem as though nearly everything is up for debate. In other words, you might make what seems like a simple statement of fact, and find that some partisans will disagree, and possibly present contrary information. For example, if you refer to a debate over vaccination, some proponents will counter by saying that there is no debate, which implies that criticisms have no credibility: to call it a ‘debate’ is to give unwarranted credibility to critics. Suppose you refer to figures on the higher death rates

from a vaccine-preventable disease among those who are unvaccinated. You might encounter critics who say that natural immunity acquired from having the disease as a child leads to lower levels of heart disease as an adult, and cite research papers with this finding (Miller, 2016). Like many other public scientific controversies, the vaccination issue contains innumerable facets, claims and counterclaims, and extreme views. You need to be prepared to be challenged by informed partisans on one or both sides.

To understand social analyses of the vaccination debate, it is convenient to classify them into four types (Martin and Richards, 1995):

1. **Positivist.** The analyst assumes that the truth can be found and usually assumes that one side has the truth.
2. **Group politics.** The analyst examines what campaigners do.
3. **Constructivist.** The analyst examines the social influences on arguments on both sides of the debate without making assumptions about who is right or wrong.
4. **Social structural.** The analyst looks at the debate in terms of social structures such as class, gender, family and the state.

Most social analyses of the vaccination debate use a positivist approach. By far the greatest number assume that vaccination has been scientifically proven to be safe and highly beneficial. If this is true, then what needs to be explained is why some people are critical of vaccination or are hesitant about their own or their children's vaccination (Reich, 2016). Some using this approach draw on psychology, for example the concept of confirmation bias in which people seek and judge information based on prior beliefs. Another body of writing draws on communication studies, looking at vaccine-critical information on the Internet (e.g., Kata, 2012). Positivist approaches are so common in studies of the vaccination debate that they might seem to be the only way to proceed, on the assumption that there is no need to study scientists or citizens who support vaccination, because they are doing what is rational.

One sign that positivist approaches dominate the social analysis of vaccination debates is the scarcity of critical examinations of the promotion of vaccination (one example is Vanderslott, 2019). Promotion is assumed

to be rational and therefore does not require explanation or examination.

The group politics approach is found, most commonly, in news reports about vaccination issues. This might be about an upsurge of measles, or protests against proposed laws to promote vaccination. The tell-tale sign of a group politics approach is the focus on what people are doing, on one or both sides of the debate. In news reports, campaigners might be quoted.

In a constructivist approach, arguments and actions are analysed without making a judgement about them. In what is called the strong programme in the sociology of scientific knowledge, arguments on each side are analysed 'symmetrically': the same analytic tools are applied to each side (Bloor, 1976). For example, the influence of funding on the arguments presented by leading campaigners is studied, looking at both the role of natural health businesses on vaccine-critical arguments, and the role of pharmaceutical companies on vaccine-supportive arguments. In a constructivist analysis, the analyst may have a personal viewpoint, but this is set aside for the purpose of the analysis. The aim of such an analysis is to understand social influences on all claims to knowledge, including claims judged to be true, which otherwise would not be examined.

As noted, the vaccination debate is highly polarised, which means that the constructivist analyses are vulnerable to being taken up by vaccination critics. The analyst becomes a 'captive of controversy', being adopted by one side and castigated by the other (Scott et al., 1990). It is perhaps for this reason that there seem to be no major constructivist analyses of the vaccination controversy by social scientists.

The social structural approach has been used by a few historians, sociologists and political scientists to examine vaccination controversies (Blume, 2017; Conis, 2015; Heller, 2008; Largent, 2012). Historians have looked at research into new vaccines, the introduction of particular vaccines into recommended schedules, and the changing images of particular infectious diseases, among other topics. Sociologists and political scientists have looked at the rise of vaccine-supportive belief systems, at the shift from scientists not seeking personal advantage from their vaccine discoveries, to the rise

of pharmaceutical company for-profit development, and the priority given to vaccination in poor countries despite other more pressing health needs.

For an illustration of the different approaches for studying vaccination controversies, the case of Andrew Wakefield is useful. Prior to COVID-19, it was by far the most widely cited technical dispute over vaccination.

The Wakefield saga

Wakefield, a British gastroenterologist, was the lead author of a paper published in 1998 in the prominent medical journal *The Lancet*. The paper suggested that it might be worth exploring a possible link between the MMR (measles, mumps and rubella) triple vaccine and autism. The publication of the paper triggered a firestorm of media attention and has been a focus of attention ever since.

One positivist approach to the Wakefield saga assumes that the medical establishment is right, in particular that MMR never causes autism. It proceeds to examine what Wakefield did wrong, including that he was involved in a conflict of interest and that the research was fraudulent. In this approach, whose influence is widespread, Wakefield is akin to a devil and is repeatedly denounced. In many accounts, Wakefield's alleged fraud is presented as a reason for vaccine hesitancy, even more than two decades later.

A positivist approach does not necessarily support one side in the debate. A different positivist approach is to assume that MMR does sometimes cause autism, and that Wakefield is a hero. This approach is used within some vaccine-critical circles.

The group politics approach is most commonly found in news reports about the Wakefield saga, for example telling of the events surrounding the publication of the paper in *The Lancet*, Wakefield being brought before the General Medical Council which stripped him of his medical licence, and allegations that Wakefield's research was fraudulent. This approach involves describing events, players and impacts. This approach often implicitly assumes Wakefield was wrong – a positivist underpinning – but is less concerned with explaining things than describing them.

A constructivist approach to the Wakefield saga would examine knowledge claims on

both sides, including research showing a possible link between MMR and autism, and research showing that there is no correlation. The big difference from a positivist approach is that the focus would not just be on Wakefield and his shortcomings, but also on research used to claim that MMR is safe. The examination would not take sides in the dispute, and because of this, would probably be welcomed by Wakefield supporters. However, no social scientist has (yet) undertaken such a constructivist analysis.

A social structural approach would position Wakefield and his antagonists within systems of relationships such as class, ethnicity and gender. The most likely social structures for such an analysis are capitalism and professions, specifically the role of pharmaceutical companies and the medical profession, which have become intertwined (Sismondo, 2018). In practice, the closest to using a social structural approach are those few social scientists who have examined the Wakefield saga in historical context, looking not just at the single 1998 paper in *The Lancet* but more widely at research by Wakefield and others in relation to the resurgence of vaccine criticism in the 1990s, and the response of the medical profession to this criticism (Largent, 2012).

Conclusion

Given that the overwhelming majority of medical and government authorities support vaccination, and that vaccine manufacturers have a financial stake far greater than those of any critics, the controversy is one-sided in terms of scientific credibility, political power and corporate interests. It is therefore not surprising that most social analyses of the controversy support the side with more credibility, power and money. Stepping back from the debate itself, it is plausible that the predominance of positivist approaches among social analyses of the controversy reflects the commitments of the analysts. In other words, it is far easier and safer to support, implicitly or explicitly, the side with greater credibility and power. A potential limitation is that certain sorts of insights, especially about social influences on the dominant viewpoint, will be missed.

For a social analyst, it is possible to distinguish between personal commitments and the tools used in an analysis. Just as it is possible to carry out a Marxist analysis without

being a Marxist, so it is possible to carry out a constructivist analysis of the vaccination controversy, examining knowledge claims on each side without making assumptions about right and wrong, while having a personal view separate from the analysis.

Often it is possible to gain insights by questioning assumptions made by both participants and scholars. For example, campaigners and most scholars treat ‘vaccination’ as a single entity. The derogatory label ‘anti-vaxxer’ assumes opposition to all vaccines, and is a reflection of the polarisation of the controversy. Yet, different considerations apply to different vaccines, and a few scientists support some vaccines but are critical of others (Götzsche, 2020), while parents may have reservations only about particular vaccines. This suggests that, for some purposes, it is more useful to talk of multiple vaccine debates rather than a single undifferentiated vaccination controversy. Following this line of thought then can lead to a critical analysis of the most common ways of studying the controversy.

Studying the vaccination controversy means stepping into a hornet’s nest, especially if your work questions any aspect of the dominant view or receives attention outside scholarly circles. There are risks in doing social research on this topic, and there are also potential rewards, including a better understanding of the role of power in areas where knowledge is contested. You will also learn a lot from the different ways that people react to your analysis.

Acknowledgements

Thanks to Paula Arvela, Jungmin Choi, Kevin Dew, Kelly Gates, Suzanne Gray, Tim Johnson-Newell, Erin Twyford and an anonymous reader for their helpful comments.

BRIAN MARTIN

References

- Andre, F.E., Booy, R., Bock, H.L., et al. (2008). Vaccination greatly reduces disease, disability, death and inequity worldwide. *Journal of the World Health Organization*, 86(2), 140–146.
- Anonymous (2022). *Turtles all the way down: vaccine science and myth*. Franklin Lakes, NJ: Children’s Health Defense.
- Bloor, D. (1976). *Knowledge and social imagery*. London: Routledge & Kegan Paul.
- Blume, S. (2017). *Immunization: how vaccines became controversial*. London: Reaktion Books.
- Cernic, M. (2018). *Ideological constructs of vaccination*. Newcastle Upon Tyne: Vega Press.
- Conis, E. (2015). *Vaccine nation: America’s changing relationship with immunization*. Chicago, IL: University of Chicago Press.
- Götzsche, P.C. (2020). *Vaccines: truth, lies and controversy*. Copenhagen: People’s Press.
- Habakus, L.K., and Holland, M. (eds) (2011). *Vaccine epidemic*. New York: Skyhorse.
- Heller, J. (2008). *The vaccine narrative*. Nashville, TN: Vanderbilt University Press.
- Kata, A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm – an overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, 30, 3778–3789.
- Largent, M.A. (2012). *Vaccine: the debate in modern America*. Baltimore, MD: Johns Hopkins University Press.
- Martin, B., and Richards, E. (1995). Scientific knowledge, controversy, and public decision-making. In S. Jasanoff, G.E. Markle, J.C. Petersen and T. Pinch (eds), *Handbook of science and technology studies* (pp. 506–526). Thousand Oaks, CA: SAGE.
- Miller, N.Z. (2016). *Miller’s review of critical vaccine studies*. Santa Fe, NM: New Atlantean Press.
- Offit, P.A., and Bell, L.M. (2003). *Vaccines: what you should know*, 3rd edn. New York: Wiley.
- Plotkin, S.A., Orenstein, W.A., Offit, P.A., and Edwards, K.M. (2018). *Vaccines*, 7th edition. Amsterdam: Elsevier.
- Reich, J.A. (2016). *Calling the shots: why parents reject vaccines*. New York: New York University Press.
- Scott, P., Richards, E., and Martin, B. (1990). Captives of controversy: the myth of the neutral social researcher in contemporary scientific controversies. *Science, Technology, and Human Values*, 15(4), 474–494.
- Sismondo, S. (2018). *Ghost-managed medicine: Big Pharma’s invisible hands*. Manchester: Mattering Press.
- Vanderslott, S. (2019). Exploring the meaning of pro-vaccine activism across two countries. *Social Science and Medicine*, 222, 59–66.