

Jan 1st, 12:00 AM

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Tindale, Christopher W. (2012). Dismantling Expertise: Disproof, Retraction, and the Persistence of Belief. Jean Goodwin (Ed.), *Between Scientists & Citizens*. <https://doi.org/10.31274/sciencecommunication-180809-87>

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# Dismantling Expertise: Disproof, Retraction, and the Persistence of Belief

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**ABSTRACT:** This paper involves an extended study of the Andrew Wakefield vaccine case as an illustration of three ethotic phenomena: (i) the creation of ethos in the face of attack; (ii) attacks on that expert by other members of the relevant scientific community; and (iii) the extension of ethos to experts from a lay audience. This last is particularly fascinating insofar as it demonstrates the durability of trust that a specific audience continues to have in Wakefield's expertise. The nature and ground of that trust will be explored.

**KEYWORDS:** autism, ethos, ethotic argument, rhetorical argumentation, testimony, Wakefield.

## 1. EXPERT ARGUMENTS AND THE POSITION TO KNOW

Many scientific controversies arise and erupt around cases of disputed expertise (Collins & Evans, 2007). Such cases are characterized by one or more of three related, what I will call, 'ethotic' phenomena: self-construction of ethos in the face of attack as a form of defense; the extension of ethos within a scientific community as a means of cooperative reinforcement of positions on which there is some consensus; and the extension of ethos to experts by a lay audience as a natural concomitant to their cognitive response. That is, with respect to the third point, lay audiences consider more than just the argument they receive; they consider the source. The Andrew Wakefield case involving autism and vaccines that is investigated at the core of this paper serves to illustrate all of these phenomena, although most attention is given to the last.

When science is revised through the retraction of claims, by the scientists themselves or the publishing medium that communicated the findings, questions about the control and authentication of ideas are sure to arise. When scientific claims are revised, the field follows certain established protocols in order to return as soon as possible to business as usual. But when public opinion resists such moves, the attempt to "wipe the slate clean" (Harmon, 2010, p.1) falters in a surprising fashion. After all, what knowledge can the public possess that counterweights the experts' authoritative claims to truth? And when rogue or maverick scientists within the field refuse also to yield, questions must arise about how expertise is constructed, dismantled, and acknowledged.

The typical way in which expert arguments<sup>1</sup> have been treated by argumentation theorists, and especially informal logicians, is in terms of a set of standards or checks to

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<sup>1</sup> I talk here and throughout the paper of expert arguments rather than arguments from authority. 'Expert' has a narrowness that in cognitive and related argumentative matters has a clarity more useful than the broader 'authority.' Experts do not possess the wide authority of an Aristotle that transcends fields, but invariably have

determine the expert's credentials. There is no thought to completely detach the quality of the reasoning from the source. Douglas Walton's account is symptomatic in this respect: "An expert in a particular domain of knowledge is in a special position to know about propositions in that domain, and therefore the expert's opinion on some propositions of this kind generally has a weight of presumption in its favor" (Walton, 1996, p. 64). That weight can be tested through a series of relevant questions directed at ascertaining the relation of the expert to the domain, the viability of the domain involved, and any circumstantial features of the case that may undermine the expert's assertions.

Such accounts offer serious advances on earlier treatments of the *ad verecundiam* like that found in Hamblin (1970). But, while the focus here is not entirely on the statements themselves—an expert's vested interests must also be considered, for example—the thrust of these accounts is to explore the expert and the argument. Little attention is given to the audience who is addressed and what *further* reasons that audience might have for accepting or rejecting the claims put forward. When the focus shifts to the audience in this way different considerations come to the fore. We start to look at experts not as repositories of knowledge but as communicators, and to consider the full range of what is communicated. Indeed, we start to think about how audiences experience both expert appeals and the sources of those appeals.

Moreover, sets of critical questions for assessing expert argumentation typically fail to deal adequately with a lack of consensus among experts. Consider the Walton account again: We are given six questions with which to explore any argument, one of which asks: "Is the assertion of the expert consistent with what other experts assert?" (Walton, Reed, & Macagno, 2008, p. 15).

It is often this last question that proves most difficult. In his fuller treatment of the argument scheme, Walton suggests that what is important is that an expert's opinion is representative of what is generally accepted in a field (1997, p. 221). Where this is not the case, a further set of critical sub-questions is brought forward, exploring the reasons for the non-representativeness. Has the expert failed to be thorough, or is he or she a maverick or crank? These are strikes against the opinion being based on knowledge, but only presumptively so. If an appropriate explanation can be given, it may be sufficient for the disagreement to be noted and a more qualified conclusion drawn.

We should not discount the figure of the maverick, who often shifts ideas from the margins into the mainstream. But from the perspective of receiving arguments, audiences have fewer or different resources for dealing with the underlying disagreements than they do on other occasions, as the case to be examined may suggest.

## 2. THE WAKEFIELD CASE

The case focused on here is that of Dr. Andrew Wakefield and the controversy surrounding the relationship between the MMR vaccine (measles, mumps, and rubella) and the onset of autism. Wakefield was a lead author in a February 1998 paper published in the *Lancet* that explored a link between the measles vaccine, irritable bowel syndrome in children and the onset of autism. That paper has since been retracted. While the paper itself did not assert a clear link (in fact, it

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a more specific or local knowledge of a limited field of inquiry or experience. For a fuller discussion of this distinction and of the argument from authority see Tindale, 1999.

was conceded in the paper that no link had been established on the basis of the twelve cases studied), Wakefield did make such an assertion in a related news conference,<sup>2</sup> and that assertion was seen as instrumental in the subsequent drop of the numbers of children being vaccinated. Many parents acted on what they judged to be Wakefield's expert testimony, even though the majority of relevant experts rejected his claims (John, 2011). Subsequently, serious concerns about the original research came to light, resulting in the retraction not just by the editors of the *Lancet* but also by some of the paper's authors, and in Wakefield and another author being removed from the United Kingdom's medical register in 2010. Among the charges deemed proven by a lengthy inquiry were unethical behavior on the part of the researchers in dealing with children, fraud in the reporting of their results, and in Wakefield's case that he patented a single-measles vaccine from which he stood to profit in the absence of MMR. Wakefield portrays himself as the victim of a conspiracy (Wakefield, 2011, p. 50,73) and continues to operate in the United States (See Dominus 2011).

### 3. ETHOS *WITHIN* THE SCIENTIFIC COMMUNITY

As Prelli (1989, p. 48) points out, scientific ethos is both technically and morally binding. In the latter case, a community coheres around what they take to be right and good. The reaction to the Wakefield case illustrates this. It would seem to be the *consequences* of Wakefield's claims that prompted the review of his data and procedures and the concern to then counter those claims. According to a CNN Health Report (January 5, 2011), the alarms Wakefield was believed to have raised in the general populace were deemed to have resulted in a serious drop in the number of vaccinated children, with a commensurate increase in cases of measles and several deaths. Thus, it is the 'good' of the vaccination program that needed to be protected. To this end, the relevant community rallied around, expelling Wakefield (and several colleagues) and closing ranks against him. On the one hand, their justification is scientific insofar as they correct what is technically bad. But on the other hand—and this is the stronger public message—it is moral. They organize themselves to promote a public good that has become at risk. On these terms, the consensus of the experts opposes Wakefield. But as importantly, in making such an opposition and publically explaining their justification they act so as to give themselves weight in the debate, to reinforce their own ethos.

In his recent study of the Wakefield case in *The Philosophical Quarterly*, Stephen John essentially takes the consensual position as given. Hence, the case *then* exhibits a serious instance of the failure to defer to expert testimony (2011, p. 497), since the prevalence of opinion opposed Wakefield's conclusions. The value of John's account in my consideration lies mainly in his attention not to the experts and their claims but the audience's reception of those claims. He is concerned with those agents' reasons for acting as they have. Parents "should have deferred to the experts who claimed that MMR was safe. However, a large proportion of parents did not do so" (2011, p. 501), hence, something 'went wrong.' This is because, generally, non-experts ought, in some objective sense, to defer to expert testimony, and here he is only considering the consensual view as representing expertise. He does support this judgment, however.

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<sup>2</sup> As Stephen John points out in his discussion of the case, Wakefield claimed that the triple MMR vaccine might cause autism in a small number of cases (2011, p. 496). Dominus (2011) discusses Wakefield's continued belief in this causal relationship, and the same is evident from Wakefield's own account (2011).

John's concern with the apparent epistemic failure leads to the development of a simple diagnostic model for social epistemology:

When non-experts who want to increase their stock of true beliefs in some domain fail to defer to the testimony of true experts, something must have gone wrong. The failure must be the result of either a failure of evidence acquisition or a failure to grasp the simple testimonial principle. (2011, p. 500)

On these terms, parents had an interest in acquiring true beliefs and a choice between deferring to Wakefield and his small group of experts, or the larger group of experts who denied a causal link between MMR and autism. Numbers alone cannot decide between these conflicting groups of experts or establish correctness unless the opinions of additional experts are independent of the views of the main group, as Alvin Goldman (2001) explains in his treatment of experts. This, John suggests, is exactly the case here, since different data sets and statistical tools were used. So numbers do matter. The concerns raised about the credibility of the Wakefield group thus compound the parents' failure.

The most serious problem John identifies, and the crux of his treatment, is his suggestion that the parents engaged in a type of epistemological free-riding (2011, p. 513). If agents adopt a plan of action which is predicated on the belief that other members of our society will accept a claim that has been established with scientific certainty, and that involves not shouldering their share of the burdens following from that claim (and required for maintaining public good), then those agents are engaging in epistemological free-riding. Thus, "failure to defer to expert testimony can be wrong because it is unfair": agents gain a benefit while not accepting the burden necessary for maintaining that benefit (2011, p. 513).

However, two things are noteworthy about John's treatment: (i) He admits that his account with its general tentativeness is speculative. He writes, "I cannot prove these sociological conjectures" (2011, p. 508). Of course, without access to the minds of the agents involved, any conclusions drawn about this general phenomenon need to be qualified in this way. But (ii) as his discussion develops it is clear that he is concerned with a failure of only one group of parents. There are really two sets of parents at issue: (a) those who have some association with autism (children) or autism groups, and (b) those who refuse vaccines. John is interested in the second group, and hence the concern with free-riding carries more weight. But there is also the first group, and while these groups are not mutually exclusive, this second is arguably the more effected and interesting group. I am interested in the distinct issues presented by this group of parents, which pushes our speculation in a different direction.

The aspect of the case that is most relevant to my discussion, then, is that in spite of the counter-claims of experts, and of the evidence of fraud and self-interest, and the failure of other researchers to corroborate the original findings, Wakefield continues to receive substantial support from autism groups and individual parents.<sup>3</sup> Why is this? Simple failure to accede to expert testimony is not enough.

In a different approach to the Wakefield case, Sorell (2007) suggests that there was a crisis of trust and that parents failed to show epistemic deference where they should have by thinking that this was a matter of ethical 'respect.' That is, they believed they had an ethical

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<sup>3</sup> The following web sites indicate the nature of the support Wakefield continues to receive. Details of the case against him and the U.K. trial can be found on <http://www.timesonline.co.uk/tol/news/uk/health/article7009882.ece>; an indication of his support is apparent from: <http://www.wesupportandywakefield.com/>. See also Dominus (2011).

right to live by their own values and confused this with an epistemic right to contest expert testimony. This account points to a prior state in the audience that impacts how they receive information. They are not empty vessels but have values that influence how they assess what they read and hear. Any crisis of trust may be traced not just to a failure of experts to agree, but a failure of expert testimony to fit with prior beliefs.

Trust is a powerful force. How audiences judge the character of experts, where this is available, can be as important when claims are considered as what is actually said. But trust must also be balanced by a degree of vigilance, and audiences seem well able to do this (Sperber et. al, 2010). In what follows, I will consider some of what is behind this. It is the failure of traditional models of argument, including informal logic, to adequately account for the influence of things like character that leads us to consider the rhetorical approach to argumentation and, in that light, its origins in the Aristotelian account.

#### 4. ETHOS: BACK TO ARISTOTLE

Aristotle provides one of the earliest accounts of social argumentation, and we can learn a lot about the nature of arguers and audiences from what is set down in the *Rhetoric*. In particular, one of his rhetorical “proofs” is identified as ethos, and a further idea relevant to this discussion is that of the engaged audience. ‘Rhetoric’ itself is, of course, a term that can mean many things to many people. In his recent book *How to Write a Sentence* (2011), Stanley Fish has helpfully defined rhetoric as “the art of argument” (p. 29), and that is a meaning I’m happy to adopt here. Aristotle’s *Rhetoric* defines it as an ability to see in every particular case the available means of persuasion (I.2.1), thus encouraging attention on persuasion and the ways it is achieved. Important in Aristotle’s definition is the attention it gives to discovery. The *seeing* that rhetoric is, is theoretical (from the common root of *theorein*), a seeing in the mind.

Aristotelian argumentative agents are situated squarely in social contexts suggesting a much broader conception of rationality than what would be attributed to simple logical beings. This is implicit in the accounts given of the three “proofs,” logos, ethos, and pathos (associated with the discourse, or argument, the character of the arguer, and the emotions of the audience). Each of these is considered a proof insofar as it facilitates (but does not guarantee) persuasion. Thus, the logos involved in the *Rhetoric* is one which addresses situations of uncertainty.

Arguing in the social domain characterized by such situations is aided by ethos and pathos. Ethos is particularly important because it involves a speaker communicating her or his character through discourse. No prior reputation is assumed by Aristotle:

the speech is spoken in such a way as to make the speaker worthy of credence; for we believe fair-minded people to a greater extent and more quickly on all subjects in general and especially where there is not exact knowledge but room for doubt. (*Rhetoric*, I.2.4).

“Character,” it is suggested, “is almost, so to speak, the most authoritative form of persuasion” (*Rhetoric*, I.2.4). And while Aristotle does not elaborate on this authoritativeness, it reflects the social nature of argumentation, the dependence, generally, that we place on each other for the authority given to our statements. Reflecting the kinds of ethotic constructions I mentioned in the introduction, the kind of weight acquired by a speaker cannot be simply claimed, it must be *given* by others, and this act involves the type of complex reciprocal recognition that will be worked out later in the tradition. Character is integrally connected with the commitments and

obligations we acquire, and thus we might consider the importance Aristotle placed on ethos to be confirmed by subsequent, more recent, discussion of commitments and obligations.

The additional treatment of pathos as a proof further confirms the social focus of the account. Aristotle's early cognitive account of the emotions links emotion with judgment. We do not make the same judgments when we are grieving as we do when rejoicing. Emotions like anger, fear, or shame all rely on thoughts about other people. These emotions all find us outside of ourselves in the world, navigating difficult interpersonal matters that can be understood and converted to sources of persuasion. Only a selection of emotions is discussed, but enough is said to meet the stated claim of explaining how emotions are created and counteracted. Aristotle adds, "from which are derived proofs related to them" (*Rhetoric* II.11.1).

The discussion of pathos in the *Rhetoric* also emphasizes that the rationality of this account is not concerned solely with the "logical being." The whole organism is addressed, and the interactions between the parts will influence the outcome of argumentation. The accounts Aristotle gives of individual emotions indicate their social nature—they arise in relation to a person's perceptions of what is expected of them or due to them in specific circumstances.

Social spaces contain arguers constructing their proofs, interacting with those around them, and addressing the whole person. Those addressed—audiences—are not passive recipients of claims and reasons, but active participants in the process of giving and receiving reasons. In this sense, we see at work a conception of audiences as "engaged." The concern behind the rhetorical enthymeme, for example, is the audience being addressed. Enthymemes involve short arguments with the focus on the audience's ability to grasp the ideas involved. Additionally, this goal will be achieved with greater success if the audience already knows part of what is being put forward, if they can contribute to the argument by way of completing it. Thus we see the idea in the tradition of an argument in which one premise is suppressed because it does not need to be stated—the audience already knows what is involved.

There is a more important sense by which enthymemes bring the audience centrally into the picture, since a sense of 'enthymeme' suggests "something in the mind." The *seeing* involved in the above definition of rhetoric is an internal seeing, an *insight*. The arguer must, in some important ways, see into the mind of her audience and compose the speech accordingly. We need not restrict the sense of this to a particular thing (thought) within the mind, rather than understanding the focus to be on the mind generally and its way of seeing. The contrast between seeing with the body's eye and seeing with the mind's eye is an important one that is exploited in several Aristotelian works. Theorizing is an internal seeing, albeit as this has application to some external state of affairs in the world. And even the more limited interpretation of the enthymeme involving just a particular idea still assumes an insight into others' mental awareness in order to appreciate what is or is not already there.

The engaged audience is a further topic of interest in the last book of the *Rhetoric*, the one that seems to have set aside the more discursive matters and turned simply to matters of style and arrangement, introducing tropes and figures of both speech and thought (*energeia*). The choice of any stylistic device will involve careful consideration of who it is that is being addressed.

Figures of speech, for example, activate common understandings between arguer and audience. The figure discussed at length here is the antithesis, which works (on one level) in terms of balanced cola. Here, the two cola stand in a relation to each other such that having heard the first phrase, the audience is able to supply the second phrase (whether or not it is

subsequently uttered by the arguer). Thus, this figure is invitational in the sense that it invites the audience to complete it.

Under *energeia* is stressed the conception of actualization that is balanced throughout Aristotle's works with potentiality. An associated concept bringing-before-the-eyes [*pro ommaton poiein*], or visualization, captures the immediacy of what is experienced by an audience: "for things should be seen as being done rather than as going to be done" (*Rhetoric* III.10.6). Something comes alive for the hearer through being actualized in such a way. But for something to be actualized in an audience it must already be available potentially. In this sense, we see again the assumption of a common fund of ideas shared between members of a community, which can be assumed and activated in argumentation. The visualization involved encourages attentiveness and provokes, as we later discover, receptivity [*eumatheia*]. If they are not attentive, hearers will not be receptive, "because the subject is unimportant, means nothing to them *personally*" (*Rhetoric* III.14.7, emphasis mine). The subject must be brought alive for each member of an audience, and that involves making it important to each one personally in order for reception to occur.

Thus, there are important elements of reciprocity in Aristotle's account of argumentation. The audience is conceived as an active participant in the processes of persuasion rather than a passive recipient of persuasive arguments. Audiences contribute details of arguments; their beliefs and knowledge form the materials that arguers must use in conjunction with the statements chosen to convey them. And audiences contribute the parts of arguments that are unspoken, because these are already aspects of their belief structures. More personally, to take a concern in the questions that drive rhetoric speaks to a deeper appreciation of the abilities of citizens who comprise the audiences addressed and of wanting to share in common ventures on a societal level. That is, one addresses a society that one is interested in belonging to and which is comprised of members that one appreciates as being worth interacting with and among whom can be found like-minded people with whom the finer aspects of societal life can be shared. These ideas have contemporary illustration in the extended Wakefield case.

## 5. UNDERSTANDING ETHOS IN THE WAKEFIELD CASE

What Wakefield has attempted *post facto*, is the creation of a scientific ethos. He narrates events leading up to his expulsion from the medical community and the retraction of the *Lancet* paper so as to present himself primarily as an advocate for children (Wakefield, 2011). To a certain degree, his dispute with the scientific establishment is distant from this. The critics construct their case around the emerging crisis of unvaccinated children as a result of Wakefield's "alarmist" claim. In his account, Wakefield never directly addresses this, claiming no more than that the drop of "uptake of MMR" after his publication may have been offset by a "reciprocal uptake in single vaccines" that were not reported (2011, p. 226). Instead, he presents the issue as one in which the medical establishment is striving to protect the MMR vaccine in spite of its suspect effects (and implies a conflict of interest on the part of some authorities who have apparent associations with drug companies).

But there is one part of his dispute with other experts that is relevant to our concerns, and would seem to be part of his ethos as this is attributed to him by segments of his audience. He constructs his defense around the stories that he was initially told by the parents

of the *Lancet 12* (the twelve subjects of the notorious paper). And he carries this over to a claim about the nature of disease:

[T]here is a different way of looking at disease . . . This alternative approach does not *just* start with the parental narrative—it is truly invested in it, using it as the navigation system without which the disease is condemned to forever wander in the wilderness. (Wakefield, 2011, p. 160)

This no doubt can account in part for his continued acceptance by the relevant segment of the public. His very perspective is rooted in the beliefs and concerns of his engaged audience, and communicated to them in his statements. And it would appear that this construction was not only accomplished in retrospect, but had an earlier origin in his initial media releases, thus accounting for the original response to him and his ideas.

An audience's experience of expert communication includes several components: their listening to what the expert says (or is reported as saying) and forming ethotic judgments; their emotional response to the expert's ethos with an associated degree of trust; and their understanding of what is said in relation to others things they know or believe which provide corroboration. The last point is important because it can explain why audiences would hold to the claims of "experts" like Andrew Wakefield in the face of conflicting claims. We considered earlier the value of having an engaged audience that already has information that can contribute to the argumentative exchange and complete the reasoning. It is not simply a matter of the audience here weighing competing claims in a logical fashion; it is a matter of taking those claims back into their lives and matching them against their wider experiences. Autism groups and individual parents of autistic children did not just hear Wakefield's claims and come to believe them; they heard those claims and related them to what they already believed or used them to make sense of phenomena that needed to be explained. In their limited way, they are making what Gelfert (2010) calls testimonial inferences to the best explanation, where "best" is decided on their terms and not those of external experts. The attempts of other experts to discount Wakefield's testimony must then do more than uncover fraudulent practices, they must also provide a competing and *better* explanation<sup>4</sup> for the apparent causal relationship which was already suggested in the experiences<sup>4</sup> of those for whom these things are relevant (that is, the parents). It is not simply a matter of continuing to trust Wakefield; it is the extension of that trust to the ideas with which he is associated, ideas that provide the most plausible explanation available to them. In these senses, the ethotic and pathotic elements in the argumentation have epistemic outcomes.

Moreover, this experience is one shared within the affected community. The Wakefield case, at least as philosophers like John approach it, seems to raise the spectre of people exercising epistemic autonomy to the detriment of others. David Coady (2006), arguing along these lines, explains that "we don't want people being epistemically autonomous when they could make their views dependent on others who either have much more information or a much greater ability to make rational inferences from their information" (p. 77). But in the MMR case the relevant dependence is not so much on the experts, at least not *directly*. Nor is it a matter of isolated audience members reasoning on their own. Rather, their dependence is on each other within the affected community. They reason together, corroborating each other's ideas, where such reasoning acts as a corrective and a confirmation. If and when the ideas

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<sup>4</sup> At stake here is how information relates to the cognitive environments of an addressee or audience. See Tindale, forthcoming.

change, they will change within the group as the understanding shifts within that corroborative community, perhaps as members leave and join, but more generally through the mutual modification of the group. An important feature of rhetorical argumentation is the interdependence that reasoners enjoy, and that interdependence is suggested here. It is not so much isolated individuals who respond supportively to Wakefield as it is an active community that corroborates the individual experiences of its members. Of course, the fact that a view is widely shared is not a strong reason in favour of that view unless people come to hold it independently (Sperber et. al, 2010, p. 38). But it is the communal holding of this view that reinforces and corroborates it. Epistemic autonomy, perhaps surprisingly, is not even an obvious value here. In a world of non-Cartesian selves, each individual finds personal value only against the backdrop of being with others. When it comes to evaluating expert claims, we do not function well as isolated knowers who must think for ourselves. In such situations, the lesson is to think together, and to situate experts' statements *within* this context, as part of an integrated knowledge base complemented by trust in character assessment. This is a lesson Wakefield's critics would do well to observe.

## 6. CONCLUSION

We have moved beyond Walton's account in terms of our understanding of expert arguments, adding to that understanding a consideration of how they may be experienced in light of the suggested role played by rhetorical proofs like ethos and pathos in the Wakefield case and the parents' response. We have also moved beyond the largely logos-centric discussion of the Wakefield case produced by John. On both fronts, the research continues. But I hope to have suggested the value of that research and the lessons that might eventually be drawn from it.

Argumentation theorists aspire to understand arguments of all varieties in their natural environments. Those environments are largely social and involve more than interaction between people on what we might think of as a purely logical level. And the full understanding of those arguments must include some consideration of what is involved in the *experience* of being addressed by them.

## REFERENCES

- Aristotle. (2007). *On rhetoric: A theory of civic discourse*. (G. Kennedy, Trans., 2d Ed.) Oxford: Oxford University Press.
- Coady, D. (2006). When experts disagree. *Episteme*, 3, 68–79.
- Collins, H. & Evans, R. (2007). *Rethinking expertise*. Chicago, IL: University of Chicago Press.
- Dominus, S. (2011, April 24). The denunciation of Dr. Wakefield. *The New York Times Magazine*, p. MM36.
- Fish, S. (2011). *How to write a sentence and how to read one*. New York, NY: HarperCollins Publishers.
- Gelfert, A. (2010). Reconsidering the role of inference to the best explanation in the epistemology of testimony. *Studies in History and Philosophy of Science*, 41, 386£–396.
- Goldman, A. I. (2001). Experts: Which ones should you trust? *Philosophy and Phenomenological Research*, 63, 85–110.
- Harmon, K. (2010, March 4). Impact factor: Can a scientific retraction change public opinion? *Scientific American*, 1–4. Retrieved from <http://www.scientificamerican.com/article.cfm?id=retraction-impact-lancet>.
- John, S. (2011). Expert testimony and epistemological free-riding: The MMR controversy. *The Philosophical Quarterly*, 61, 496–517.
- Prelli, L. J. (1989). The rhetorical construction of scientific ethos. In H. W. Simons (Ed.), *Rhetoric in the human sciences* (pp. 48–68). London: Sage Publications.

- Sperber, D., Clément, F., Heintz, C., Mascaro, O., Mercier, H., Origg, G. & Wilson, D. (2010). Epistemic vigilance. *Mind and Language*, 25(4), 359–393.
- Sorell, T. (2007). Parental choice and expert knowledge in the debate about MMR and autism. In A. Dawson & M. Verweij (Eds.), *Ethics, prevention and public health* (pp. 95-110). Oxford: Oxford University Press.
- Tindale, C.W. (1999). The authority of testimony. *Proto Sociology: An International Journal of Interdisciplinary Research*, 13, 96–116.
- Tindale, C.W. (2011). Character and knowledge: Learning from the speech of experts. *Argumentation*, 25, 341–353.
- Tindale, C.W. (forthcoming). The words of other people: The fundamental role of testimony in rhetorical argumentation. In H. van Belle, et al (Eds.), *Verbal and visual rhetoric in a media world*. Leiden: University of Leiden Press.
- Wakefield, A. J. (2011). *Callous disregard: Autisms and vaccines—The truth behind a tragedy*. New York, NY: Skyhorse Publishing.
- Walton, D. (1997). *Appeal to expert opinion: Arguments from authority*. University Park, PA: The Pennsylvania State University Press.
- Walton, D. (1996). *Argumentation schemes for presumptive reasoning*. Mahwah, NJ: Lawrence Erlbaum and Associates.
- Walton, D., Reed, C., & Macagno, F. (2008). *Argumentation schemes*. Cambridge: Cambridge University Press.