

Is there a rhetoric of science?

Case Study: Wakefield et al., 1998

Persuasion

What claims are being made by the authors?

Conversation: is science true?

Persuasion

- “We have identified a chronic enterocolitis in children that may be related to neuropsychiatric dysfunction. In most cases, onset of symptoms was after measles, mumps, and rubella immunisation. Further investigations are needed to examine this syndrome and its possible relation to this vaccine.”

Ethos: the establishment of authority

Do we trust these authors?
How do we know they are trustworthy?

Logos: the use of logical constructions

How do the authors back up their argument?

Logos

- Some studies have shown a link between behavioral disorders and intestinal disease
- Measles encephalitis, viral encephalitis, and rubella have been associated with or found to predate behavioral disorders
- We have identified a chronic enterocolitis in children that may be related to neuropsychiatric dysfunction. In most cases, onset of symptoms was after measles, mumps, and rubella immunisation.
- We did not prove an association between measles, mumps, and rubella vaccine and the syndrome described.

Pathos: the use of emotions

How do the authors create a sense of urgency (or do they)?

How do we know this work is important?

Are any feelings evoked by the article?

Pathos

- Narrative: “Asperger first recorded the link between coeliac disease and behavioural psychoses.”
- Family: “In eight children, the onset of behavioural problems had been linked, either by the parents or by the child's physician, with measles, mumps, and rubella vaccination.”
- Urgency: “If there is a causal link between measles, mumps, and rubella vaccine and this syndrome, a rising incidence might be anticipated after the introduction of this vaccine in the UK in 1988.”

How does science
employ rhetorical
strategies?

Wakefield Fallout

Effective and credible systems are needed for the detection of vaccine-associated adverse events through pharmacovigilance, for distinguishing causal reactions from coincidental reactions by pharmacoepidemiological or other studies, and for risk communication. Without such a system, vaccine-safety concerns such as that reported by Wakefield and colleagues may snowball into societal tragedies when the media and the public confuse association with causality and shun immunisation. This painful history was shared by the UK (among others) over pertussis in the 1970s after another similar case-series was widely publicised, and it is likely to be repeated all too easily over MMR. This would be tragic because passion would then conquer reason and the facts again in the UK.

- Robert T Chen and Frank DeStefano, *The Lancet*, 28 Feb. 1998

Wakefield Fallout

We were surprised and concerned that the *Lancet* published the paper by Andrew Wakefield and colleagues¹ in which they alluded to an association between MMR vaccine and a non-specific syndrome, yet provided no sound scientific evidence.

- Helen Bedford et al., The Lancet, 28 Feb. 1998
Institute of Child Health

Wakefield Fallout

“Our publication in *The Lancet* and the ensuing reaction throws into sharp relief the rift that can exist between clinical medicine and public health.”

“Assumptions of vaccine safety, based upon inadequate safety trials and dogma contribute largely to confusion and public loss of confidence in vaccination. Public-health officials would do well to get their own house in order before attacking the position of either clinical researchers or *The Lancet* for what we perceive as our respective duties.”

- AJ Wakefield, *The Lancet*, 28 Feb. 1998

Wakefield Fallout

“The paper by Andrew Wakefield and colleagues is an example of how researchers, editors, and those concerned with the public’s health can work together to present new evidence in a scientifically balanced and careful way.”

- Richard Horton (editor), The Lancet, 28 Feb. 1998

Wakefield Fallout

“It is perhaps understandable that health officials are tempted to discredit innovative clinical research into the biological mechanism of vaccine-associated health problems when they have steadfastly refused to conduct this kind of basic science research themselves. However, it should not be accepted without protest.”

- Barbara Loe Fisher (National Vaccination Information Center), The Lancet, 2 May 1998

Wakefield Fallout

- 1999: Wakefield and Montgomery: MMR vaccine is linked to autism
- 2000: Japanese corroboration of Wakefield's results (using Wakefield's samples)
- 1999: three refutations of Wakefield et al: epidemiological study; parent questionnaires; multidisciplinary panel
- 2002: multiple epidemiological studies, all negative
- “By 2002, the scientific controversy over an alleged link between vaccines and autism had ended, but the public controversy had only just begun.”

Wakefield Fallout

- 2004: evidence does not support serious allegations against Wakefield, including:
 - Incomplete ethics approval
 - Ethics approval intended for prior study
 - Children were invited to participate (bias)
 - Children were part of a future multi-party legal action lawsuit
 - Results were used for said lawsuit
 - Wakefield received 55,000 pounds

Wakefield Fallout

- 2010:

Following the judgment of the UK General Medical Council's Fitness to Practise Panel on Jan 28, 2010, it has become clear that several elements of the 1998 paper by Wakefield et al¹ are incorrect, contrary to the findings of an earlier investigation. In particular, the claims in the original paper that children were “consecutively referred” and that investigations were “approved” by the local ethics committee have been proven to be false. Therefore we fully retract this paper from the published record.

Assignment: Portfolio

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1. Select a topic of interest and identify a controversy
2. Research the controversy, and identify a related interview subject (ideally, a UT professor)
3. Write a research proposal and complete an interview prep worksheet
4. Conduct an interview and complete an interview report
5. Write a blog post, an op-ed, and a feature article about your topic.

Assignment: Portfolio

- Choosing a Controversy:
 - College of Natural Science at UT
 - Science Magazine
 - Scientific American
 - New York Times: Science
 - NPR: Science
 - Wired: Science

Assignment: Portfolio

- Wikipedia report: due Tuesday, Sept 9.