

= Merchants of Doubt =

Merchants of Doubt is a 2010 non-fiction book by American historians of science Naomi Oreskes and Erik M. Conway . It identifies parallels between the global warming controversy and earlier controversies over tobacco smoking , acid rain , DDT , and the hole in the ozone layer . Oreskes and Conway write that in each case " keeping the controversy alive " by spreading doubt and confusion after a scientific consensus had been reached , was the basic strategy of those opposing action . In particular , they say that Fred Seitz , Fred Singer , and a few other contrarian scientists joined forces with conservative think tanks and private corporations to challenge the scientific consensus on many contemporary issues .

The George C. Marshall Institute and Fred Singer , two of the subjects , have been critical of the book , but most reviewers received it favorably . One reviewer said that Merchants of Doubt is exhaustively researched and documented , and may be one of the most important books of 2010 . Another reviewer saw the book as his choice for best science book of the year . It was made into a film , Merchants of Doubt , directed by Robert Kenner , released in 2014 .

= = Themes = =

Oreskes and Conway write that a handful of politically conservative scientists , with strong ties to particular industries , have " played a disproportionate role in debates about controversial questions " . The authors write that this has resulted in " deliberate obfuscation " of the issues which has had an influence on public opinion and policy making .

The book criticizes the so-called Merchants of Doubt , some predominantly American science key players , above all Bill Nierenberg , Fred Seitz , and Fred Singer . All three are physicists : Singer was a rocket scientist , whereas Nierenberg and Seitz worked on the atomic bomb . They have been active on topics like acid rain , tobacco smoking , global warming and pesticides . The book claims that these scientists have challenged and diluted the scientific consensus in the various fields , as of the dangers of smoking , the effects of acid rain , the existence of the ozone hole , and the existence of anthropogenic climate change . Seitz and Singer been involved with institutions such as The Heritage Foundation , Competitive Enterprise Institute and George C. Marshall Institute in the United States . Funded by corporations and conservative foundations , these organizations have opposed many forms of state intervention or regulation of U.S. citizens . The book lists similar tactics in each case : " discredit the science , disseminate false information , spread confusion , and promote doubt " .

The book states that Seitz , Singer , Nierenberg and Robert Jastrow were all fiercely anti-communist and they viewed government regulation as a step towards socialism and communism . The authors argue that , with the collapse of the Soviet Union , they looked for another great threat to free market capitalism and found it in environmentalism . They feared that an over-reaction to environmental problems would lead to heavy-handed government intervention in the marketplace and intrusion into people's lives . Oreskes and Conway state that the longer the delay the worse these problems get , and the more likely it is that governments will need to take the draconian measures that conservatives and market fundamentalists most fear . They say that Seitz , Singer , Nierenberg and Jastrow denied the scientific evidence , contributed to a strategy of delay , and thereby helped to bring about the situation they most dreaded . The authors have a strong doubt about the ability of the media to differentiate between false truth and the actual science in question ; however , they stop short of endorsing censorship in the name of science . The journalistic norm of balanced reporting has helped , according to the authors , to amplify the misleading messages of the contrarians . Oreskes and Conway state : " small numbers of people can have large , negative impacts , especially if they are organised , determined and have access to power " .

The main conclusion of the book is that there would have been more progress in policymaking , if not for the influence of the contrarian " experts " , which tried on ideological reasons to undermine trust in the science base for regulation . Similar conclusions were already drawn , among others on

Frederick Seitz and William Nierenberg in the book *Requiem for a Species : Why We Resist the Truth about Climate Change* ( 2010 ) by Australian academic Clive Hamilton .

= = Reception = =

Most reviewers received *Merchants of Doubt* enthusiastically .

Philip Kitcher in *Science* says that Naomi Oreskes and Erik Conway are " two outstanding historians " . He calls *Merchants of Doubt* a " fascinating and important study " . Kitcher says that the apparently harsh claims against Nierenberg , Seitz , and Singer are " justified through a powerful dissection of the ways in which prominent climate scientists , such as Roger Revelle and Ben Santer , were exploited or viciously attacked in the press " .

In *The Christian Science Monitor* , Will Buchanan says that *Merchants of Doubt* is exhaustively researched and documented , and may be one of the most important books of 2010 . Oreskes and Conway are seen to demonstrate that the doubt merchants are not " objective scientists " as the term is popularly understood . Instead , they are " science @-@ speaking mercenaries " hired by corporations to process numbers to prove that the corporations ' products are safe and useful . Buchanan says they are salesmen , not scientists .

Bud Ward published a review of the book in *The Yale Forum on Climate and the Media* . He wrote that Oreskes and Conway use a combination of thorough scholarly research combined with writing reminiscent of the best investigative journalism , to " unravel deep common links to past environmental and public health controversies " . In terms of climate science , the authors ' leave " little doubt about their disdain for what they regard as the misuse and abuse of science by a small cabal of scientists they see as largely lacking in requisite climate science expertise " .

Phil England writes in *The Ecologist* that the strength of the book is the rigour of the research and the detailed focus on key incidents . He said , however , that the climate change chapter is only 50 pages long , and recommends several other books for readers who want to get a broader picture of this aspect : Jim Hoggan ' s *Climate Cover @-@ Up* , George Monbiot ' s *Heat : How to Stop the Planet Burning* and Ross Gelbspan ' s *The Heat is On and Boiling Point* . England also said that there is little coverage about the millions of dollars which Exxon Mobil has put into funding groups actively involved in promoting climate change denial and doubt .

A review in *The Economist* calls this a powerful book which articulates the politics involved and the degree to which scientists have sometimes manufactured and exaggerated environmental uncertainties , but opines that the authors fail to fully explain how environmental action has still often proved possible despite countervailing factors .

Robert N. Proctor , who coined the term " agnotology " to describe the study of culturally induced ignorance or doubt , wrote in *American Scientist* that *Merchants of Doubt* is a detailed and artfully written book . He set it in the context of other books which cover the " history of manufactured ignorance " : David Michaels ' s *Doubt is their Product* ( 2008 ) , Chris Mooney ' s *The Republican War on Science* ( 2009 ) , David Rosner and Gerald Markowitz ' s *Deceit and Denial* ( 2002 ) , and his own book *Cancer Wars* ( 1995 ) .

Robin McKie in *The Guardian* states that Oreskes and Conway deserve considerable praise for exposing the influence of a small group of Cold War ideologues . Their tactic of spreading doubt has confused the public about a series of key scientific issues such as global warming , even though scientists have actually become more certain about their research results . McKie says that *Merchants of Doubt* includes detailed notes on all sources used , is carefully paced , and is " my runaway contender for best science book of the year " .

Sociologist Reiner Grundmann ' s review in *BioSocieties* journal , acknowledges that the book is well researched and factually based , but criticizes the book as being written in a black and white manner whereas historians should write a more nuanced description . The book depicts special interests and contrarians misleading the public as being mainly responsible for stopping action on policy . He says this shows a lack of basic understanding of the political process and the mechanisms of knowledge policy , because the authors assume that public policy would follow on from an understanding of the science . While the book provides all the ( formal ) hallmarks of science , Grundmann sees it less as

a scholarly work than a passionate attack and overall as a problematic book .

William O ' Keefe and Jeff Kueter from the George C. Marshall Institute , which was founded by Seitz , say that although Merchants of Doubt has the appearance of a scholarly work , it discredits and undermines the reputations of people who in their lifetime contributed greatly to the American nation . They say that it does this by questioning their integrity , impugning their character , and questioning their judgement .

= = Authors = =

Naomi Oreskes is Professor of History and Science Studies at Harvard University . She has degrees in geological science and a Ph.D. in Geological Research and the History of Science . Her work came to public attention in 2004 with the publication of " The Scientific Consensus on Climate Change , " in Science , in which she wrote that there was no significant disagreement in the scientific community about the reality of global warming from human causes . Erik M. Conway is the historian at NASA 's Jet Propulsion Laboratory at the California Institute of Technology in Pasadena .