



CULTURAL SOCIOLOGY



# Science under Siege

Contesting the Secular Religion  
of Scientism

*Edited by*  
Dick Houtman  
Stef Aupers  
Rudi Laermans

palgrave  
macmillan

Dick Houtman · Stef Aupers · Rudi Laermans  
Editors

# Science under Siege

Contesting the Secular Religion of Scientism

palgrave  
macmillan

*Editors*

Dick Houtman  
Center for Sociological Research  
University of Leuven  
Leuven, Belgium

Stef Aupers  
Institute for Media Studies  
University of Leuven  
Leuven, Belgium

Rudi Laermans  
Center for Sociological Research  
University of Leuven  
Leuven, Belgium

Cultural Sociology

ISBN 978-3-030-69648-1

ISBN 978-3-030-69649-8 (eBook)

<https://doi.org/10.1007/978-3-030-69649-8>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer  
Nature Switzerland AG 2021

This work is subject to copyright. All rights are solely and exclusively licensed by the  
Publisher, whether the whole or part of the material is concerned, specifically the rights  
of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on  
microfilms or in any other physical way, and transmission or information storage and  
retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology  
now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc.  
in this publication does not imply, even in the absence of a specific statement, that such  
names are exempt from the relevant protective laws and regulations and therefore free for  
general use.

The publisher, the authors and the editors are safe to assume that the advice and informa-  
tion in this book are believed to be true and accurate at the date of publication. Neither  
the publisher nor the authors or the editors give a warranty, expressed or implied, with  
respect to the material contained herein or for any errors or omissions that may have been  
made. The publisher remains neutral with regard to jurisdictional claims in published maps  
and institutional affiliations.

Cover illustration: Baac3nes, Getty Images

This Palgrave Macmillan imprint is published by the registered company Springer Nature  
Switzerland AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland



# Introduction: A Cultural Sociology of the Authority of Science

*Dick Houtman, Stef Aupers, and Rudi Laermans*

An institution under attack must reexamine its foundations, restate its objectives, seek out its rationale (Merton 1973 [1942], 267)

## I MARCHING FOR SCIENCE

On April 22, 2017, tens of thousands of people, scientists and concerned citizens alike, marched for science in Washington, DC. In the pouring rain, media personality and science popularizer Bill Nye (‘the Science Guy’) addressed the crowd: ‘We are marching today to remind people

---

D. Houtman (✉)

Center for Sociological Research, University of Leuven, Leuven, Belgium  
e-mail: [dick.houtman@kuleuven.be](mailto:dick.houtman@kuleuven.be)

S. Aupers

Institute for Media Studies, University of Leuven, Leuven, Belgium  
e-mail: [stef.aupers@kuleuven.be](mailto:stef.aupers@kuleuven.be)

R. Laermans

Faculty of Social Sciences, University of Leuven, Leuven, Belgium  
e-mail: [rudi.laermans@kuleuven.be](mailto:rudi.laermans@kuleuven.be)

everywhere, our lawmakers especially, of the significance of science for our health and prosperity.’ In the shadow of the National Monument, close to the White House, he warned against political elites ‘deliberately ignoring and actively suppressing science.’ A participant interviewed by CNN pointed out the sea change in just half a century: ‘John F. Kennedy promised this nation that by the end of the sixties we’d land on the moon. Now, almost fifty years later, we have an American president disparaging the facts, denigrating science. And we are here to tell him that science matters.’

Washington’s March for Science coincided with more than 600 satellite marches in a wide range of American and Canadian cities, but also in Australia (e.g., Canberra, Melbourne, Sydney) and all over Europe (e.g., Berlin, Stockholm, London, Brussels, Amsterdam, Budapest, Warsaw, Belgrade, Bucharest). The protests did not remain confined to the West either, as testified by marches in Asia (e.g., Ho Chi Minh City, Taipei, Hong Kong, Hyderabad, Dhaka, Seoul, Quezon), Africa (e.g., Accra, Abuja, Kampala), South America (e.g., Rio de Janeiro, Bogotá, Santiago, Buenos Aires), and even Antarctica. Pointing out the promise of science in overcoming many of the problems that plague humanity, banners and placards called upon politicians to take science more seriously: ‘Got polio? Me neither. Thanks, science!’; ‘Science saves lives’; ‘Science is magic that works’; ‘Science: It works, bitches’; ‘Society should worry when geeks have to demonstrate’; ‘Physics makes the world go round.’ Even granting the occasional placard voicing support for the humanities (‘Humanities: Enlightening the world since the 4th century’), one cannot help but being struck by the preoccupation with natural science, its technological accomplishments, and its further promises.

Participants not only marched for science, though. They also did so against president Donald Trump, who no longer prioritized funds for scientific research (‘Make America smart again’; ‘Trust scientific facts, not alternative facts’; ‘You can’t grab science by the pussy!’; ‘Next NASA mission: launch Trump to Uranus’); who relied on weird notions like ‘alternative facts’; and who considered climate change a hoax by the Chinese government (‘Mother nature trumps alternative facts’; ‘Ice has no agenda, it just melts’; ‘We’ve lost our patience: the oceans are rising and so are we’; ‘Climate change is real’; ‘There is no planet B’). Indeed, the profiles of the participants in the March for Science resembled those of the Women’s March and the People’s Climate March, two earlier anti-Trump protests in Washington, DC. The March for Science did not

even mobilize any more scientists than either of these, indicating that it indeed entailed anti-Trump protest as much as pro-science advocacy (Fisher 2018).

Yet, the event took place against the backdrop of increased conservative contestations of the authority of science across the period 1974–2014 (Gauchat 2012). The resulting anti-science climate entails a major source of concern and disagreement in academia. Some academics dismiss the politicization of science as producing a ‘never-ending pseudo-scientific debate’ (Brulle 2018, 256) or ‘nonsense debate’ (idem, 257), pointing out how ‘politically naïve’ (idem, 257) it is to believe that protests like the March for Science can actually improve the situation. Others oppose those who ‘naïvely advocate value-free science’ (Kinchy 2020, 78) and do instead call upon their colleagues in Science and Technology Studies to do ‘engaged STS scholarship,’ emphasizing how important it is that ‘as STS scholars [...] we not just observe these changes, but also oppose them, in our words and actions’ (idem, 76). Yet, data collected briefly before and briefly after the March for Science suggest that the event has not been able to counter the anti-science climate in conservative circles, but has only increased liberal-conservative polarization about the authority of science (Motta 2018).

The polarization has not declined since then either, as became particularly clear when the United States was hit hard by the COVID-19 pandemic in 2020. Dr. Anthony Fauci, prominent member of the White House Coronavirus Task Force, director of the National Institute of Allergy and Infectious Diseases (NIAID), and world-leading expert in infectious disease, felt forced to disagree with the American president during White House press briefings about the unfolding crisis. By then Fauci had already advised five consecutive presidents before Trump, starting with Ronald Reagan during the AIDS epidemic, and boasted an immaculate reputation as a publicly trusted medical figure. Yet, all this could not prevent that his disagreement with the president triggered massive protests from politically rightist groups, even amounting to death threats and harassment of himself and his family. Startled Democrats felt forced to rally to Fauci’s defense, exemplifying once again how politically contested the authority of science has meanwhile become.

Many academics frame conflicts about the authority of science in the moral terms of good and evil, construing trust in science as good and condemning its counterpart as morally wrong and socially detrimental. This moralizing tendency typically coincides with forcing the matter into

the political binaries of ‘right’ versus ‘left,’ ‘conservative’ versus ‘liberal,’ or ‘authoritarian’ versus ‘democratic.’ In this book, we seek to neither condemn nor praise the headwind faced by contemporary science. We rather approach the issue from a sober cultural-sociological perspective to dig into the cultural mechanisms that account for the acceptance or denial of the authority of science. We do so not only because self-justifying political responses do so easily backfire, but even more so because construals of contestations of the authority of science as ‘morally reprehensible,’ ‘rightist,’ or ‘authoritarian’ conceal many an inconvenient fact. For cultural and intellectual history provide abundant evidence that such contestations are not at all necessarily authoritarian and politically rightist. Not only are they deeply embedded in the philosophy of science, but left-libertarian critics have massively contested the authority of science, too, arguing that its mindless acceptance poses a threat to liberty and democracy.

In this introductory chapter we trace these arguments in intellectual discourse and cultural history to argue that contestations of the authority of science entail rejections of science as a sort of secular religion. This notion of science as religion—scientism—is fully consistent with Durkheim’s classical sociology of religion (Durkheim 1995 [1912]). For the latter does not define religion conventionally in terms of a nexus between human beings and the supernatural that defines a path to salvation from suffering, but rather as a cultural distinction between what is sacred and what is profane, a distinction that may or may not involve supernatural beings. In Durkheim’s hands the sacred is thus that which is extraordinary in the sense that it is set apart as deserving special respect and veneration, and that is as such surrounded by taboos aimed at protecting it from pollution by the ordinary and the mundane—the profane, i.e., that which does not deserve any special veneration or authority. Indeed, one of the cultural mainstays of modernity is the endowment of science with a sacred status, which degrades religion as conventionally understood to a profane source of pollution against which it needs to be protected (Bloor 1976, 46–54). The competing claims to sacredness resulting from this give rise to the quintessential modern cultural conflict, i.e., the ‘religion/science conflict’ (Sappington 1991), or even ‘warfare of science with theology’ (White 1960).

The modern sacralization of science implies that contestations of its authority entail processes of profanation that dismiss its threefold claim to authority, i.e., that (1) it entails a way of understanding the world that

is superior to alternatives like religion, politics, or art (Part I of the book), that (2) unlike the ‘perceptions’ of laypersons, its claims about the world do ‘neutrally’ and ‘objectively’ represent ‘the world as it really is’ (Part II of the book), and that (3) scientific institutions and scientists deserve authority for the scientific work they do (Part III of the book).

## 2 SCIENTISM: SCIENCE AS SECULAR RELIGION

### 2.1 *Modern Science and Its Critics*

Modern science emerged in the period from the fifteenth through the seventeenth centuries, coinciding with major scientific breakthroughs associated with the work of natural scientists like Copernicus, Kepler, Galileo, and Newton (Dijksterhuis 1961; Toulmin 1990, 5–44). It understood scientific truth as resulting from the combination of logical reasoning and systematic empirical observation. This point of view was popularized in the eighteenth century by Enlightenment thinkers like Voltaire, Condorcet, Hume, and Montesquieu. They paved the way for nineteenth-century pioneers of social science like Comte, Marx, Spencer, and Freud, who connected the quest for scientific knowledge about the foundations of human society with reformist political agendas. In that era, the modern scientific worldview was in effect transformed into a major cultural and political force as part of ‘a struggle by new social and cultural elites to undermine aspects of the religious culture that underpinned the institutions of the church, monarchy, and the ruling aristocratic elite’ (Seidman 1994, 10). So it is here that the modern cultural conflict between science and religion originates.

Central to eighteenth- and nineteenth-century Enlightenment thought was indeed a systematic critique of religion, tradition, and belief as sources of ignorance and tutelage, with science conceived as their superior successor, promising material and moral progress (Seidman 1994, 20–26). In this Enlightenment understanding, scientific knowledge differs drastically from other types of knowledge and meaning in that it does not stem from the human imagination, but from the careful and systematic study of the world itself. This notion became one of the mainstays of the modern self-image, which embraced science, rationality and technology as superior modes of relating to the world that would increasingly marginalize tradition, religion and belief.



The March for Science testifies that this modern self-understanding still exists today, even though science has become increasingly contested. This is of course not to suggest that it has ever been completely uncontested. For since the heydays of the Enlightenment in the eighteenth century, it has always been viewed with suspicion, not least from within religious circles, as Enlightenment critiques of religion would lead one to expect. From the eighteenth century onwards, Romanticist critiques of science have been equally significant and appear even more important nowadays than religious ones, if only because the authority of religion is no longer what it used to be, especially so in Western Europe.

European Romantics like Jean-Jacques Rousseau (1712–1778), Samuel Taylor Coleridge (1772–1834), and William Wordsworth (1770–1850) have since the end of the eighteenth century defended the significance of the human imagination in tandem with feelings, experiences and emotions against the imperatives of science and reason. At the other side of the Atlantic, American Transcendentalists like Ralph Waldo Emerson (1803–1882) and Henry David Thoreau (1817–1862) similarly foregrounded the significance of subjectivity, intuition, and imagination. European Romanticism and American Transcendentalism do as such understand truth as neither rooted in divine revelation, which would make it a matter of religious belief, nor as resulting from logical reasoning and empirical observation, which would make it a matter of scientific reason. Both contrasting options are dismissed in favor of imagination and experience.

## 2.2 *Contesting the Authority of Science*

In such a climate of clashes between Romanticism and the scientific worldview, Max Weber crafted his *Wissenschaftslehre* at the beginning of the twentieth century in Germany. It understands the scientific quest for truth as just one particular way of relating to the world, the superiority of which over religion, politics, morality, or aesthetics cannot be justified on strictly intellectual grounds. Weber rather observes that ‘the belief in the value of scientific truth is the product of certain cultures and is not a product of man’s original nature’ (Weber 2014 [1904], 137), so that ‘scientific truth’ is not universally valid and binding to everyone, but entails just ‘that which *claims* validity for all who *seek* truth’ (idem, 121; emphasis in original, DH/SA/RL).

Invoking his well-known distinction between ‘how the world is’ and ‘how it should be,’ Weber limits the authority of science to claims about the former, so that it cannot answer questions of meaning and purpose. Science cannot tell what is good from what is bad and cannot tell what courses of action ought to be pursued or rather abstained from. Answers to moral questions like these can only be answered on the basis of the moral worldviews that lie at the heart of religion and politics. Rather than asserting the superiority of science over religion and politics, then, Weber aims to ‘adjudicate the tensions between two vital Western traditions: between reason and faith, between knowledge and feeling, between classicism and romanticism, between the head and the heart’ (Gouldner 1962, 212–213), ‘attempting to guard the autonomy of both spheres’ (idem, 211). Acknowledging their incompatibility, but refusing to order them in terms of superiority and inferiority, Weber thus robs science of its status of be-all and end-all, dismissing scientific understandings of science. The Weberian account of science is as such not so much critical about religion and its cultural significance, but rather about the endowment of science with an authority that makes it superior to it, as in Comtean-style positivism. Indeed, as Alvin Gouldner has observed (idem, 211; see also 1973), ‘(Weber’s) main campaign here is waged against science and reason and is aimed at confining their influence. To Weber, even reason must submit when conscience declares, Here I stand; I can do no other.’

In tandem with this modesty about the authority of science Weber addresses the role of culture and values in the conduct of scientific research. His principal point is not that values can and should be banned from science, but indeed precisely the opposite. For scientific research aims to address ‘issues that matter’ and ‘what matters’ is inevitably informed by values and is as such a normative moral issue. The implication is that in this Weberian understanding scientific research cannot and should not collect ‘the’ facts. It cannot do so, because ‘the’ facts do not exist: due to the endless complexity of reality ‘the’ facts always and inevitably entail an intellectually arbitrary yet culturally meaningful selection from a much wider set of potential facts. It should not do so, because ‘Any knowledge of infinite reality acquired by the finite human mind is [...] based on the tacit assumption that, in any given instance, only a finite *part* of [that reality] should be the object of scientific comprehension – should be “important” (in the sense of “worth knowing about”)’ (Weber 2014 [1904], 114). This is what Weber calls the ‘value relatedness’ (*Wertbeziehung*) of scientific research.

In Weber's hands the conduct of scientific research thus comes to resemble value-informed social action by non-scientists, even though after having normatively defined what is 'worth knowing' methodological craftsmanship and conformity to standards of intellectual integrity take over. Yet, this guiding role of values in directing empirical research does inevitably make research findings partial and one-sided. Even though the researcher herself surely finds the registered facts 'meaningful' and 'relevant,' they are logically speaking only so for those who share her value priorities. For all others they are less culturally significant than a series of potential alternative facts that the researcher has decided to bypass. The implication is that accusations of research being 'one-sided' are intellectually meaningless, because it always and necessarily is: 'The belief that scientific work, as it progresses, should assume the task of overcoming [...] "one-sidedness" [...] is flawed' (Weber 2014 [1904], 111). Critical reproaches invoking the 'one-sidedness' of a scientific study do as such merely assert a critic's own value priorities ('What about power/inequality/race/class/gender/culture?'). These are normative issues of moral or political taste that can be neither dismissed nor justified on strictly intellectual grounds.

A simple example demonstrates how neither normative standpoints nor policy preferences can be defended by invoking 'the' facts. It is for instance not too difficult to demonstrate in a methodologically sound fashion that condom use protects against HIV/AIDS, but it is quite another to invoke this 'fact' to defend the claim that condom use needs to be encouraged and unprotected sex discouraged. For the study's value-informed definition of sex as a health risk is clearly one-sided. An equally one-sided study that instead construes sex as a source of pleasure will arguably produce a different 'fact,' i.e., that both men and women prefer sex without condoms. While the former study thus makes reasons to abstain from condom use invisible, the latter does the same with reasons to protect oneself. Clearly, then, none of these studies can inform 'policy implications' on strictly logical and empirical grounds.<sup>1</sup>

The most upfront public issue since early 2020, the COVID-19 pandemic, provides another example. For closures of retail stores, bars, and restaurants to limit social contact cannot simply be justified by epidemiological studies that demonstrate that such measures do effectively help contain the pandemic. For it is of course not far-fetched to believe that economic research can just as easily come up with evidence about the detrimental economic effects of such measures, like increasing numbers

of bankruptcies and cases of unemployment. Neither is it hard to imagine that sociologists could come up with research that shows such epidemiologically informed measures to negatively affect the quality of social life, e.g., by impeding contact opportunities between family members, friends, and co-workers. So here we have three types of studies that foreground three different sets of scientifically informed facts; three types of facts that suggest very different policy implications; and three sets of policy implications that—to put it in the terms of policy analysis—each create their own ‘side effects,’ the latter all the more ‘undesirable’ if the one-sided problem definition that invokes them is dismissed. The question is not whether one of these sets of findings is any more ‘true’ than the others, because obviously none of them is. The question is rather which of them is most relevant, i.e., how health issues, economic issues, and social issues need to be prioritized, which is a moral and political problem that science cannot solve.

In Weber’s understanding, in short, it is inevitable that data are collected and facts arrived at on the basis of intellectually arbitrary values that define the ‘real’ problem, so that ‘the facts’ do not speak for themselves and do not have logically compelling implications for policies either. So while science can surely produce facts, these facts can only inform policies after the conditions they refer to have been interpreted as either ‘good’ or ‘bad’; a ‘pleasure’ or a ‘nuisance’; a ‘healthy’ condition or an ‘unhealthy’ one; a ‘social problem’ to be wiped out or a ‘blessing’ to be cherished. Empirically established facts have no ‘intrinsic’ meaning, because there is no such thing as a strictly ‘neutral,’ ‘scientific,’ or ‘logical’ path from such facts to their moral evaluation, let alone to policy measures.

Critics of scientism have time and again invoked similar arguments since Weber’s days, albeit more often than not without observing the marked continuity with the Weberian account of science. That science is not a ‘mirror of nature’ (Rorty 1979) is meanwhile a mainstay in philosophy of science, while the idea of ‘pure’ and ‘autonomous’ science, driven by nothing but a disinterested passion for Truth has been deconstructed by pointing out how racial and gender stereotypes impact scientific research. Donna Haraway (1989) has for instance argued that studies of primates’ reproductive and sexual behavior had traditionally unreflectively reproduced gender stereotypes about aggressive males and receptive females, a tendency that only came to be questioned after the discipline had opened up to increasing numbers of female primatologists. Haraway’s

(1988) more general argument is that scientific research inevitably generates ‘situated knowledge,’ marked by a ‘partial perspective’ that precludes the God’s eye point of view assumed by absolute notions of Objectivity and Truth. In making this argument Haraway has re-situated Sandra Harding’s ‘standpoint theory,’ which has meanwhile sprawled a diversity of standpoints on standpoint theory itself (Harding 2004). Science, this postmodern feminist scholarship points out much like Weber did long before, does not simply represent the world as it ‘really’ is, i.e., in a strictly ‘neutral,’ ‘objective,’ and culturally unmediated fashion.

### 2.3 *The Counter Culture of the 1960s and the Postmodern Turn*

This notion that science cannot represent the world in a strictly ‘neutral,’ ‘objective,’ and culturally unmediated fashion was one of the mainstays of the so-called ‘counter culture’ of the 1960s and 1970s. The latter critiqued not only religion and tradition for standing in the way of personal liberty and dreams of a better world, but reason and science, too. Budding young academics and students with middle-class backgrounds and leftist-liberal political profiles back then accused science of being basically conservative politics in disguise. They critiqued science as the handmaiden of ‘technocracy’ or ‘the system,’ both understood as forcing people into slave-like existences as futile cogs in the rationalized modern machine (see Marwick 1998; Roszak 1969; Musgrove 1974; Zijderfeld 1970).

The young critics found much of their intellectual ammunition in the works of the philosophers and sociologists of the Frankfurt School. Adding sizable doses of Weber and Freud to Marxism, and no longer seeing the cultural sphere as a mere superstructure that reflects an economic infrastructure based on class power, authors like Fromm (1941), Horkheimer and Adorno (2002 [1944]) and Marcuse (1964) exchanged faith in an inevitable socialist revolution for the necessity of liberation from ideological indoctrination. This entailed a profound transformation of the old-school Marxism that claimed an objective scientific status for itself. Whereas the latter ‘scientific Marxism’ charged its bourgeois critics with betraying ideals of objectivity and impartiality and with legitimizing the existing order and its reigning interests, the Frankfurters rejected ‘the cult of objective fact as such, and not merely its alleged misapplications’ (Gellner 1992, 33).

Thus, in *Dialectic of Enlightenment* (2002 [1944]), indeed a telling title, Horkheimer and Adorno argued that reason had changed from an emancipatory force into an oppressive one because it had gradually been reduced to pure instrumentality and calculability. This had gone hand in hand with the scientific reduction of ‘the world’ to a mere ensemble of facts, studied by a positivism that equates ‘reality’ with ‘that what is’ and as such excludes the dimension of possibility or ‘that what could be.’ Marcuse (1964) unfolds a similar argument in *One-Dimensional Man*, also critiquing the confinement of science, reason and truth to ‘that what is’ and underscoring the importance of a thinking that dares to speculate and open up new, emancipatory vistas. With this emphasis on the necessity of conceiving attainable utopias that counter the weight of seemingly neutral descriptions of existing reality, the Frankfurters targeted empirical science’s ‘fact fetishism’ and gave a social twist to Romanticism’s belief in the blessings of the faculty of imagination.

In line with this, the Frankfurters felt that those living in the West people did not at all live free and happy lives in tolerant and democratic societies, but were merely made to believe that they did. Hence Marcuse’s (1964) argument that consciousness-raising and freeing one’s mind are the conditions as much the goals of genuine political action. Horkheimer and Adorno (2002 [1944]) similarly critiqued the ‘culture industries’ for keeping people in a shiftless, complacent, and uncritical state of half sleep that veils harsh realities and seduces them into mistaking their alienation for a state of satisfaction and happiness. These are indeed Romantic notions that differ profoundly from old-school Marxism (Campbell 2007, 294–295; Josephson-Storm 2017, 209–239). They sounded like music to the young countercultural protesters’ ears, witness slogans like ‘Power to the imagination!’ and ‘If the theory doesn’t fit the facts, then that’s too bad for the facts!’ Slogans like this still sound familiar today, even though they now tend to come from the Trumpean right (Duncombe 2007).

The period from the 1980s onward then witnessed a cross-fertilization of the heritage of the Frankfurt School with newly emerged French post-structuralism (Derrida, Foucault, Lacan, Deleuze, Baudrillard, etcetera). This produced the so-called postmodern turn in the humanities and social sciences, meanwhile firmly institutionalized in the new transdisciplinary field of cultural studies (Inglis 2007). This postmodernism also rejects the epistemic authority of science. It underscores that there is no way to ‘neutrally’ or ‘objectively’ decide on the validity of competing knowledge

claims because the latter are inextricably bound up with incommensurable cultural frames. Postmodernism does as such entail ‘the dissipation of objectivity,’ as Zygmunt Bauman (1992, 35) puts it: ‘The element most conspicuously absent is a reference to the supracommunal, “extraterritorial” grounds of truth and meaning.’ Or in the words of Aronowitz (1992, 258): ‘Postmodern thought [...] is bound to discourse, literally narratives about the world that are admittedly partial. Indeed, one of the crucial features of discourse is the intimate tie between knowledge and interest, the latter being understood as a “standpoint” from which to grasp “reality”.’ Culture is here hence regarded as consisting of heterogeneous ‘language games’ (Lyotard 1984) or incommensurable ‘vocabularies’ (Rorty 1979; 1989) that compete and clash with each other without the possibility of a fair and neutral settlement. ‘Once the veil of epistemic privilege is torn away [...], science appears as a social force enmeshed in particular cultural and power struggles. The claim to truth, as Foucault has proposed, is inextricably an act of power—a will to form humanity,’ as Seidman (1991, 134–135) summarizes the postmodern position.

This postmodern account of the inescapability of cultural pluralism and of the impotence of science in overcoming it through a strictly ‘neutral’ or ‘objective’ representation of ‘reality as it really is’ echoes Weber’s *Wissenschaftslehre*. Yet, while Weber crafted his doctrine of value neutrality to protect science against the politicization this so easily gives rise to, the latter is precisely what postmodernists encourage and celebrate. For postmodernism conceives itself as a ‘philosophy of difference’ that aims to defend subaltern groups against the totalizing claims of scientific ‘meta-narratives’ that claim epistemological authority in the name of social progress (through technology) or individual emancipation (through Enlightenment) (Lyotard 1984). This postmodern defense of difference by what its critics call ‘the academic left’ (Gross and Levitt 1994) informs political engagements with the identity politics of new social movements, especially the women’s, gay and lesbian and Black Lives Matter movements.

Now such postmodern identity politics may be overwhelmingly leftist, but it has despite obvious differences much in common with today’s rightist populist, nationalist, and authoritarian identity politics, be it in Europe, the United States, or elsewhere. The latter’s dreams of ethnic and cultural sameness are similarly informed by notions of insurmountable

cultural difference, and it similarly invokes the utopian cultural imagination in its struggles to overcome the injustices of actually existing society (Canovan 1999). Also like its leftist counterpart it contests the authority of science by hawking the superiority of direct personal experience, in this case by celebrating the practical insight of ‘the common people,’ i.e., ‘what every person with just a modicum of common sense knows’ (Taggart 2000, 95–98). The new populist right, in short, has much in common with the postmodern identity politics of the left, with the left-libertarian counter culture of the 1960s and 1970s, and with the Romantic movement from the late-eighteenth century onwards. The basic stance vis-à-vis science is much the same: that it is intellectually misguided and morally wrong to conceive it as superior to non-scientific ways of understanding the world. Contestations about the authority of science are as such neither new nor necessarily ‘rightist’ and ‘authoritarian.’

### 3 SOCIOLOGY OF SCIENCE AND SOCIOLOGY OF RELIGION

Authority cannot simply be claimed or asserted, because it is ultimately endorsed, assigned, dismissed, or withdrawn by those assumed, or just hoped, to obey to it.<sup>2</sup> Sociological studies of the authority of science therefore need to give culture and meaning their full due, which is why this book seeks theoretical inspiration from sociology of religion rather than from Science and Technology Studies (STS). For while culture has of course never been absent in the sociological study of science (Callon 1995), the latter has nonetheless always treated it step-motherly, certainly in comparison to the sociology of religion. This is exemplified by Merton’s (1973 [1942]) classical account of the normative ethos of science, which remains limited to the norms that guarantee the production of objective and true knowledge and bypasses how culture influences researchers’ problem selections, their theorizing, and their interpretations of their research findings. Merton’s account thus sticks firmly to the positivist premise of science as the producer of objective and true knowledge that basically mirrors a reality ‘out there.’

Without doubt, Thomas Kuhn’s *The Structure of Scientific Revolutions* (1962) entails the most influential break with this logic. For its argument is that the truth-value of empirical evidence is never simply ‘given,’ but always informed by a ‘paradigm’ (e.g., Newtonian physics). Such a paradigm entails a sort of worldview that defines a series of



taken-for-granted premises about the nature of reality and operates as a regulatory framework in science. It as such delineates meaningful research problems and provides coherent interpretations for research findings. In their research training young scientists are taught to take its quasi-metaphysical assumptions for granted, are familiarized with exemplars of ‘good science’ informed by it, and learn how to define and solve ‘good’ research problems. This results in practices of ‘normal science,’ with scientists engaging in ‘puzzle-solving,’ typically without being reflexively aware of the paradigm’s influence. Things start to change when research findings start accumulating that the ruling paradigm cannot really make sense of. Then a new paradigm that can do so replaces the old one, without any guarantee that history will not repeat itself later on. Highlighting the role of worldviews in the conduct of science and underscoring the incommensurability of paradigms, Kuhn refers to such shifts as ‘scientific revolutions.’

The work of the Edinburgh School in the Sociology of Scientific Knowledge (SSK) has similarly much to offer to a cultural sociology of science (e.g., Barnes 1974; Bloor 1976; Barnes, Bloor and Henry 1996). More than that: it has inspired the influential ‘strong program in cultural sociology,’ which does not necessarily remain limited to the study of science (Alexander and Smith 2003). Bloor’s (1976) major contribution lies in bringing scientific knowledge under the aegis of the sociology of knowledge, which had traditionally confined itself to the study of non-scientific knowledge like folk wisdoms and religious cosmologies. To explain this remarkable and problematic self-limitation Bloor (1976, 46–54) invoked the Durkheimian notion of the sacred, pointing out that treating scientific and non-scientific knowledge on equal footing comes down to defiling the sacred: ‘Science is sacred, so it must be kept apart [...] (to protect) it from pollution which would destroy its efficacy, authority and strength as a source of knowledge’ (idem, 49). Precisely such a profanation of science defines Bloor’s (1976, 7) ‘strong programme in the sociology of knowledge.’ For the latter is informed by the principle of ‘symmetry,’ according to which sociology should remain ‘impartial with respect to truth and falsity, rationality or irrationality, success or failure’ and should be ‘symmetrical in its style of explanation,’ in the sense that ‘the same types of cause would explain, say, true and false beliefs’ (idem, 7). This principle of symmetry defines the actual truth status of scientific truth claims as a sociological non-issue, which paves the

way for a less timid and more intellectually mature sociology of science, not least a cultural sociology of science.

The Edinburgh School has however also stimulated studies about the ways in which scientific, economic, and political interests influence the production of scientific knowledge and technology (e.g., Barnes 1977) that laid the foundations for Science and Technology Studies (STS) (e.g., Jasanoff et al. 1995). The latter has a marked interest in ‘science in action’ (Latour 1987), i.e., ethnographic studies of positive and medical scientists at work in their laboratories, constructing scientific facts and technologies (Latour and Woolgar 1979). Such studies in STS have also pointed out that scientific knowledge does not represent or mirror the world directly and objectively, because in practice the process is much more messy, involving a wide range of human and non-human ‘entities that all contribute to scientific production: electrons and chromatographers, the president of the United States and Einstein, physicians with their assistants, the cancer research campaign, electron microscopes and their manufactures’ (Callon 1995, 54). This insight has given rise to Actor-Network-Theory (ANT) as a strictly symmetrical approach of networks of human and non-human ‘actants’ (Latour 2005; see also Law 1987). All this is however hardly useful for a cultural-sociological analysis of the authority of science.<sup>3</sup>

Sociology of religion has indeed more to offer to the study of the authority of science than Science and Technology Studies (STS), also due to scientism’s status as religion’s secular counterpart. This is why we seek our principal theoretical inspiration in this book from sociological theories about the authority of religion. It is indeed often overlooked that religion and science have more in common than typically acknowledged, because ‘the [...] cognitive ethic of the Enlightenment [...] shares with monotheistic exclusive scriptural religion the belief in the existence of a unique truth, instead of an endless plurality of meaning-systems’ (Gellner 1992, 84). Religion and science do thus both assume the existence of culturally unmediated truth, unpolluted by human understandings and prejudices—‘real’ truth, binding to everyone. This does of course not mean that the two are identical, because they are obviously not, neither ontologically (a supernatural reality is not the same as an empirically observable reality), nor epistemologically (belief is not the same as reason). Contrary to religion, in other words, science ‘repudiates the idea that [truth] is related to a privileged Source, and could even be definitive’ (idem, 84).

The commonality of religion and science invokes a shared urge to authoritatively assess the validity of lay beliefs. In science this pertains to the latter's rationality or irrationality, i.e., their truth or falsity according to scientific standards; in religion it is their conformity to orthodoxy as defined by God-revealed truth.<sup>4</sup> This similarity between science and religion informs the special sensitivity in Science and Technology Studies (STS) and sociology of religion alike to the problem of 'going native,' i.e., researchers blindly accepting and reproducing emic understandings of truth and falsity. Both fields deal with this problem by refusing to privilege particular truth claims, while discrediting others as 'false.' Science and Technology Studies (STS) bracket issues of ('real') truth by invoking the abovementioned principle of 'symmetry.' Sociology of religion insists on the principle of 'methodological agnosticism' (Furseth and Repstad 2006, 197–198), according to which sociology cannot and should not evaluate the truth or falsity of religious doctrines (e.g., about the existence or ontological qualities of the sacred) (see also Wilson 1982, 1–26).

In what follows we introduce three sociological theories about the authority of religion and explain how they inform this book's contributions about the authority of science vis-à-vis other social fields or realms (Part I), the authority of scientific truth claims (Part II), and the authority of scientific institutions (Part III).

## 4 SECULARIZATION AND THE AUTHORITY OF RELIGION AND SCIENCE

### 4.1 *Secularization and Pluralism*

The secularization theory that became dominant in postwar sociology is not one single and unitary thing, but not a hopelessly unstructured mess either (Casanova 1994; Dobbelaere 1981; 2016; Tschannen 1991; Wallis and Bruce 1992). It consists of theses about religious decline and religious privatization. The thesis of religious decline holds that secularization unfolds as a process in which more and more people become less and less religious (e.g., Norris and Inglehart 2004). According to the thesis of religious privatization, religiousness ceases to be the societal default option, so that individuals become increasingly free to make their own decisions about being religious or not, and if so, how exactly (e.g.,

Luckmann 1967; Taylor 2007). Religious decline and religious privatization themselves are attributed to a more general process of structural differentiation that coincides with an increase in pluralism.

Structural differentiation and cultural pluralization do as such entail the virtually uncontested backbone of the theory of secularization. Religion, or so the argument goes, loses its authority to morally overarch all of society as a sort of ‘sacred canopy,’ as Peter Berger (1967) has influentially put it. A situation in which religion permeates basically all of society, ranging from art to politics and from education to health care, gives way to one in which these realms have become largely independent from religion. Examples are the separation of church and state; science becoming a strictly secular endeavor, free of religious interference; and responsibilities in health care and education shifting from religious orders to professionally trained experts. This results in a society with a range of ‘subsystems’ (or ‘fields’ if one prefers) that all follow their own particular institutional logic, independent of religion. While medieval art was still basically religious art, and while religion and science were still inextricably intertwined before the Renaissance, art and science alike have meanwhile increasingly got rid of religious interference (e.g., Dobbelaere 2016; Wilson 1976; 1982). According to the theory of secularization, then, due to structural differentiation and concomitant cultural pluralism ‘religion becomes a subsystem alongside other subsystems, losing in this process its overarching claims over those other subsystems [...] [so that] the religious influence is increasingly confined to the religious subsystem itself’ (Dobbelaere 2016, 2).

Secularization comes with an increased role of professional knowledge and expertise, technology, and science, which has often been taken to imply a concomitant increase in the authority of science (e.g., Iannaccone, Stark and Finke 1998; Stark and Finke 2000). People in the modern West are as such held to act ‘more and more in terms of insight, knowledge, controllability, planning and technique [...]’ (Dobbelaere 1993, 15; translated from Dutch), because ‘(f)or many young people, problems of any kind have technical and rational solutions’ (Wilson 1982, 136). No matter how much this notion is enshrined in the modern self-image and in theories of modernization alike, however, an increased social significance of science does not logically necessitate a concomitant increase in the authority of science. For just like religion science does of course also find itself confronted with a range of subsystems with competing logics and the theory of secularization lacks compelling arguments why it

would unlike religion end up in the privileged and authoritative position of providing an overarching ‘meta-logic.’

Whether authority of religion does in the course of the secularization process give way to authority of science is in fact an open question, and indeed a pivotal one, even though sociologists of religion have almost consistently overlooked it by taking the affirmative answer for granted. Yet, modern conditions of pluralism may erode the authority of science even more than that of religion. For a science that actively claims an authoritative status sits uneasily with the notion that it is bound to the ‘truth imperative’ (Goudsblom 1980), which confines its authority to nothing but strictly empirical and logical analysis (Weber 2014 [1904]). This imperative moreover prescribes a firm commitment to doubt, critique, and debate, which rules out unassailable truth claims and dogmas (Gellner 1992, 84). While this makes it less likely that science will actually claim the privileged status of a new overarching ‘meta-logic’ in the first place, its openness to doubt, critique, and debate moreover suggests that even if it does, it will face major difficulties in defending itself against competitors vying for its authority. Indeed, as Colin Campbell (2002 [1972], 24) has observed:

while the decline in power of organized ethical religion appears to have removed the most effective control over heretical religious beliefs, a growth in the prestige of science results in the absence of control of the beliefs of non-scientists and in an increase in quasi-scientific beliefs.

This does indeed resemble the situation that contemporary science finds itself in, plagued by ‘quasi-scientific beliefs’ that question its authority.

#### *4.2 Part I: Scientific Authority in the Face of Pluralism*

The first part of this book, ‘Scientific Authority in the Face of Pluralism,’ addresses the authority of science vis-à-vis other fields. Dick Houtman (Chapter 2) argues that disenchantment in the classical sense of Max Weber transforms the intellectual realm as much as the religious one. Discussing changes since the 1960s within sociology itself, he demonstrates how the process has eroded much of its former pretension of being able to ‘discover’ the truth about human society—the ‘real’ truth, solidly and reliably grounded beyond the cultural imagination. This has liberated culture from its subaltern status as a realm of mere ‘perceptions,’

amenable to correction by sociological knowledge about how things ‘really’ stand. Discarding such inflated claims to scientific authority, sociology has instead come to understand culture as a vital aspect of social life in and of itself that does as such demand serious research attention. The discipline has in the process ended up in a position that is strikingly similar to the one secularization theory has always envisaged for religion, i.e., as lacking any special authority beyond its own realm.

Stef Aupers and Lars de Wildt (Chapter 3) point out that the orthodoxies of modern science have always been challenged by their heterodox counterparts. Yet, while heterodox science was traditionally an endeavor by intellectual counter elites, the rise of the Internet has made it possible for the public at large to join in, which has happened on a large scale. The relevant web forums and online communities boast radical distrust vis-à-vis established science and spark ‘truth wars’ between trained scientific experts representing orthodox science and their heterodox amateur counterparts. Now while orthodox science has always faced the need to defend itself against heterodox challengers, discrediting today’s critics by branding them ‘irrational pseudo-scientists’ is far from easy. For today’s web forums and online communities are not only hotbeds where heterodox science is actively discussed, developed, and disseminated, but they are also environments where deviant scientific ideas are powerfully socially and algorithmically consolidated and sustained, even to the extent that radicalization becomes likely.

Rudi Laermans (Chapter 4) addresses how the universities have meanwhile opened up to arts-based research, which produces a type of knowledge that differs profoundly from traditional scientific knowledge. As a manifestation of the arts’ ‘regime of singularity’ this knowledge is unavoidably experience- and practice-based and informed by the personal experiences and subjectivity of the artist. Such knowledge cannot be reconciled with the standards that traditionally underpin the authority of science, i.e., non-singular conceptual rationalism, methodological rigor, replication and peer control, and contribution to the accumulation of knowledge. Advocates of arts-based research do therefore emphasize the particularity and distinct epistemic nature of artistic knowledge to endow it with an epistemic status that differs from science, yet does meet generic academic—not: scientific—standards. They do as such not straightforwardly reject the authority of science, yet repudiate the notion that it has a monopoly on worthwhile knowledge. In doing so, they invoke more broadly defined academic standards that enable them to neither give in

on the particularity of art nor dismiss the authority of science. That the resulting ‘academization of the arts’ has occurred without much opposition from adherents of the traditional epistemic ideals of science testifies to the relativization of the authority of science in academia.

## 5 CULTURAL WORLDVIEWS AND THE AUTHORITY OF SCIENTIFIC TRUTH CLAIMS

### 5.1 *Max Weber and Emile Durkheim on Religion and Meaning*

Despite their otherwise major differences, not least their understandings of what religion ‘is’ and ‘does,’ the classical sociologies of religion of Max Weber and Emile Durkheim do both address the significance of religion beyond a strictly defined religious realm. More specifically, they both foreground the role of religious worldviews in endowing the world with meaning, i.e., in distinguishing between what is ‘good’ and what is ‘bad,’ and in pointing out the action repertoires that the religiously pious should pursue or rather stay away from.<sup>5</sup> Unlike the theory of secularization discussed above, this second theory can as such not account for the endorsement or rejection of the authority of science as a field in and of itself, but rather for why religiously (or more generally: culturally) defined groups differ as to the types of truth claims they tend to accept as unbiased and valid or reject as false and invalid.

Weber’s comparative and historical analysis of the world religions aims to demonstrate that, and explain why, the inner-worldly asceticism of sixteenth-century Puritan Protestantism, especially Calvinism, contributed to the breakthrough of rationalized modernity in the West, especially modern entrepreneurship and capitalism. This is so, Weber argues, because a sort of positive cultural resonance (*Wahlverwandtschaft*, typically translated as ‘elective affinity’) exists between the Protestant ideal of a sober, disciplined and economically active lifestyle on the one hand and on the other hand the spirit of modern capitalist entrepreneurship, defined by its incessant goal-rational handling of capital and other production factors. Other world religions, like Buddhism, Hinduism and Confucianism, had very different consequences, because they were either mystical rather than ascetic and/or other-worldly rather than inner-worldly. They as such discouraged rather than stimulated mundane economic activities (Weber 1946 [1921]; 1963 [1922]). Weber’s most famous study, *The Protestant Ethic and the Spirit of Capitalism* (2005

[1904/05]), hence addresses just one single link within a much more extensive account of the economic consequences of the world religions (Collins 2007).

In *The Elementary Forms of Religious Life* (1995 [1912]) the late, cultural-sociological Durkheim similarly addresses religion's consequences beyond a strictly defined religious realm. In doing so, Durkheim came back full circle to the position that he had initially dismissed in *The Division of Labor in Society* (1964 [1893]). For this early, positivist Durkheim still argued that religion could only provide cultural cohesion and solidarity in pre-modern society ('mechanical solidarity'), so that its modern counterpart could only be based on 'organic solidarity,' brought about by an awareness of the interdependencies that come with the modern division of labor. The late Durkheim, however, maintains that all societies, pre-modern and modern alike, are held together by a common religion, understood as a group-based 'unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden' (1995 [1912], 44). In this understanding religion does hence not necessarily refer to supernatural beings, but rather to something deemed so special and important that it needs to be set apart, celebrated, and protected against pollution by the mundane and the everyday. In Durkheim's hands religion thus pertains to collectively held beliefs about what sets 'the sacred' apart from 'the profane' and to ritual practices aimed at protecting the former from pollution by the latter.

Even though the Weberian and Durkheimian accounts of religion are often counterposed, or even portrayed as excluding each other, then, they do both bring out that religious worldviews have implications that stretch beyond a narrowly defined religious realm. This is because religious worldviews are in both instances held to tell the pious what is good or pure and what is bad or impure, and to inform them about the action repertoires they are expected to pursue and abstain from. Religious worldviews (or more generally: cultural ones) do as such also define distinctions between those scientific truth claims that sustain the good, the pure, and the sacred, and those that rather pose a profane threat to it. Cultural worldviews thus lead the former to be embraced and cherished and the latter to be neglected, discarded, and dismissed. Whereas Weber's and Durkheim's sociologies of culture and religion differ profoundly in other respects, in short, they do nonetheless both suggest that cultural worldviews matter a lot when it comes to the acceptance or dismissal of scientific truth claims.



Contemporary theories about ‘post-truth,’ i.e., truth claims accepted without reference to scientific evidence, lead to much the same expectation for basically the same reasons. The best known of these theories address ‘confirmation bias’ (Nickerson 1998), ‘motivated reasoning’ (Kunda 1990), and ‘avoidance of cognitive dissonance’ (Festinger 1962). ‘Confirmation bias’ and ‘motivated reasoning’ do like Weberian positive elective affinity and Durkheimian celebration of the sacred refer to the tendency to positively appreciate information that is compatible with pre-existing beliefs. ‘Avoidance of cognitive dissonance,’ on the other hand, entails the logical counterpart of confirmation bias and motivated reasoning, i.e., the tendency to try and avoid feelings of discomfort invoked by information that appears to challenge one’s pre-existing beliefs (see, e.g., Manjoo 2008). This can as such also be understood in terms of either negative elective affinity (Weber) or preventing the profane from polluting the sacred (Durkheim).<sup>6</sup>

## 5.2 *Part II: Cultural Worldviews and the Authority of Scientific Truth Claims*

The second part of this book addresses how cultural worldviews evoke or discourage interest in and affinity with particular types of scientific truth claims, leading to the latter’s acceptance or dismissal. Liza Cortois and Anneke Pons-de Wit (Chapter 5) demonstrate that the contrasting religious worldviews of mindfulness and conservative Protestantism do both spark an interest in neuroscientific research about the plasticity of the brain. Yet, their different elective affinities with neuroscience direct their adherents toward different types of neuroscientific insights. Whereas mindfulness aficionados gravitate toward insights according to which the brain can be ‘improved’ through meditation, conservative Protestants are primarily interested in how modern digital media can ‘damage’ the brain.

Paul Tromp and Peter Achterberg (Chapter 6) then present evidence of the role of political worldviews in lay understandings of truth and falsity. Following in the footsteps of Douglas and Wildavsky (1982) they demonstrate firstly that those with rightist-conservative political profiles are less likely to believe in the actual occurrence of global warming than their leftist-progressive counterparts. Using experimentally manipulated news reports about research findings that appear to contradict climate change, they then show that those with leftist-progressive political profiles do with both hands seize evidence that these findings may be compatible with the

scientific consensus of actually occurring climate change after all. This means that not only the authority assigned to research findings, but even the interpretation of the scientific consensus within which these findings are launched, is informed by political worldviews.

Like those reported in the previous chapter, then, these findings demonstrate that cultural worldviews matter a lot when it comes to endowing scientific truth claims with authority rather than neglecting or dismissing them. The findings of this chapter do in fact even go a step further than those of the previous one, because they demonstrate that people with different worldviews do not only have their own particular pet research findings, but do even evaluate the truth status of the very same facts on the basis of their cultural worldview.

## 6 CONTESTATIONS OF THE AUTHORITY OF SCIENTIFIC INSTITUTIONS

### 6.1 *The Spiritual Turn in Religion*

Since the end of the twentieth century sociology of religion has witnessed the emergence of a theory about a ‘spiritual turn’ in religion. It does not so much posit a decline of religion per se as part of a more general process of secularization, but rather that religious institutions have lost much of their former authority (e.g., Davie 1994; Heelas and Woodhead 2005; Houtman and Mascini 2002; Houtman and Aupers 2007; Tromp, Pless and Houtman 2020). This theory accounts for the increasing numbers of Westerners who self-identify as ‘spiritual but not religious,’ producing utterances like, ‘No, I am not religious; I want to follow my personal spiritual path’ or ‘I do not believe in God, but I do believe that there is “something”.’ On the basis of such evidence Heelas and Woodhead (2005) have suggested that a ‘spiritual revolution’ may be underway, consisting of a major transition from ‘religion’ to ‘spirituality,’ while Campbell (2007, 41) even goes so far as to observe ‘a fundamental revolution in Western civilisation, one that can be compared in significance to the Renaissance, the Reformation, or the Enlightenment.’

This spiritual turn entails the dissemination of a specific type of religious discourse that dismisses religion’s traditional organizational-institutional entrapments. It posits that the sacred cannot be captured in human-made institutions, because the latter are ultimately profane; i.e., false, shoddy, mundane, human-made, and ‘invented’ side issues

that distract from what religion is (or rather: should be) ‘really’ about: engaging in personal contact with the sacred (Roeland et al. 2010). Religious institutions are as such accused of placing too much emphasis on institutional and ritual side issues and of wrongly conceiving the religious traditions they embody as different from, conflicting with, and superior to others. This critique informs the spiritual notion of ‘polymorphism’ (Campbell 1978, 149) or more typically ‘perennialism,’ which holds that what religious traditions have in common is more important than what sets them apart (‘There are many paths, but there is just one truth’).

Today’s spiritual discourse thus rests on a binary distinction between ‘spirituality’ and ‘institutional religion,’ conceived as ‘real’ respectively ‘false’ religion, a distinction that is basically uncontested among those who self-identify as ‘spiritual, but not religious.’ Spirituality does as such entail a type of religion that dismisses institutions, foregrounds a personal connection with the divine, and underscores the significance of personal spiritual experience. All this gives rise to the practices of personal bricolage, syncretism, and spiritual seeking that have since Thomas Luckmann’s *The Invisible Religion* (1967) more often than not been misconstrued as strictly privatized (see for critiques: Aupers and Houtman 2006; Besecke 2005; Woodhead 2010). For in fact contemporary spirituality entails an excellent illustration of religion in the classical Durkheimian sense, i.e., religion as a shared cultural discourse that is organized around a binary distinction between ‘the sacred’ and ‘the profane’ (here: religious institutions) (Alexander 1988; Durkheim 1995 [1912]).

## 6.2 *Part III: Contesting the Authority of Scientific Institutions*

Such contestations of institutions do not remain confined to religion, as can for instance be seen in populist critiques of party-centered politics and neglect of what ought to be central to democratic politics, i.e., the interests of ‘the people’ (e.g., Canovan 1999; Houtman, Laermans and Simons 2021). Critiques of the institutional bulwarks of science should similarly not be mistaken for contestations of the authority of science per se. For universities and research institutes are often critiqued for giving up on ‘real’ science, for betraying scientific ideals of democratic and critical openness, for engaging in submissive ‘Big Science’ and selling out to ‘Big Corporations’ and ‘Big Government.’<sup>7</sup> Part III of this book thus demonstrates that today’s contestations of the authority of scientific institutions should not be confused with contestations of the authority of science per

se. Indeed, the former are often informed by normative ideals of ‘real’ science, i.e., ‘science as it should be.’

Massimiliano Simons (Chapter 7) discusses the Do-It-Yourself biology movement, also known as ‘garage biology,’ ‘kitchen biology,’ ‘bio-hacking,’ or ‘biopunk.’ It engages in biological research outside scientific institutions, even though many of those concerned have academic credentials. DIY biology is not at all ‘against’ science, but profoundly dislikes the ways in which authoritarian, routinized scientific institutions with their stifling bureaucracy and disturbing office politics straightjacket science in close collaboration with multinational corporations and state actors. Informed by the anti-institutional ethos of the countercultural computer hacker movement it boasts ideals of democratic openness, open source, sharing of resources, and decentralization. It dreams of liberating science from its institutional entrapments, of democratizing research by making it accessible to everyone, and of reawakening the sheer spirit of pleasure, fun, and creativity held to lie at the heart of science. The dream of DiY biology is one of ‘science without scientists.’

Jaron Harambam and Stef Aupers (Chapter 8) then present findings from an ethnographic study of conspiracy theorists, who are vociferously present among today’s critics of science. Typically branded by scientists as dangerous, irrational and deluded loonies, they do however not reject the scientific endeavor per se either, but rather accuse modern universities, research institutes, and the scientists they employ of being insufficiently scientific. They feel that science lacks a skeptical, open-minded, and critical edge and pride themselves on being less dogmatic and more critical than the typical academic scientist or scientific expert. Much like DIY biology, then, they accuse the universities of having degenerated into dull, routinized research factories that stand in the way of the free spirit of science: lost in bureaucratic and economic side issues, enlisted by powerful states and corporations, and in effect no longer hospitable to ‘real’ science, driven by open-mindedness and curiosity.

Finally, Peter Achterberg, Willem de Koster, and Jeroen van der Waal (Chapter 9) analyze survey data to demonstrate that, unlike what is often believed, the lower educated embrace ideals of unbiased scientific research as much as the higher educated do. They also show, however, that those concerned are more skeptical than the higher educated are about whether everyday scientific practices do actually live up to these ideals. Distrust of science among the lower educated does as such not entail a rejection of

the scientific endeavor per se. It remains limited to the institutional side of science and does moreover stem from their well-documented lack of trust in institutions in general, so certainly not only scientific ones.

## 7 CONCLUSION: SCIENCE UNDER SIEGE

Today's contestations of the authority of science are too interesting and too intellectually significant to be merely mourned and protested against. For it is clear that they sit quite uneasily with the long-standing notions of a fundamental dissimilarity and conflict between religion and science (Evans and Evans 2008) and of social change as resulting from a 'warfare of science with theology' (White 1960) or a 'religion/science conflict' (Sappington 1991). According to such understandings, the unfolding of modernity results in a displacement of religion by science, i.e., a transition from authority of religion to authority of science, a notion that informs sociological theories of modernization.

Today's contestations of the authority of science suggest that sociologists need to be more skeptical about such claims than they have traditionally been. The authority of religion has since the 1960s surely declined significantly in most Western-European countries (e.g., Brown 2001; Bruce 2002; Norris and Inglehart 2004), and also—though less typically acknowledged—in the United States (Voas and Chaves 2016). Sociologists have however tended to accept the notion that this process has coincided with an increase in the authority of science as an article of faith rather than a scientific hypothesis in need of critical empirical testing. For the sobering fact is that as yet hardly any research has systematically addressed this pivotal question (see for an exception Gauchat 2012).

Today's contestations of the authority of science may indeed indicate that accounts of a declining authority of religion tell only half the story. What may have eroded instead is something more general and more fundamental, i.e., the acceptance of universally binding truth claims, be they religiously or scientifically informed. Such a dual decline of the authorities of religion and science alike does not signal a process of 'modernization,' but rather one of 'postmodernization,' with religion and science alike losing their former authority (e.g., Bauman 1987; 1992; Inglehart 1997). Precisely because such a process entails a major rupture with how the modern West has traditionally understood itself and its further development, there is ample reason to open up this issue for systematic empirical study.

Yet, as we have seen, lamentation, disapproval, and political protest are the more typical responses, with scientists, politicians, and journalists bemoaning ‘anti-intellectual’ currents and critiquing those who ‘irrationally’ refuse to accept the authority of science. These are textbook examples of ‘boundary work’ (Gieryn 1983; 1999): they create an asymmetrical divide between ‘us’ and ‘them’ and in so doing re-assert precisely the pretensions of modern science that are so heavily contested nowadays.<sup>8</sup> Such boundary work moreover obscures that similar critiques of science are expressed from within academia itself, too, not least from within the humanities and the social sciences, and not least about the instrumentalization of science and its subordination to vested political and economic interests. A more fundamental reflection thus appears called for.

Unlike academic prophets of doom have it, eradicating misplaced pretensions of strictly objective and unmediated truth may not so much lead to the end of science, but rather open the door to a better science—a science that is more critical of long-standing scientific practices and self-understandings that impede the quest for truth. Indeed, as one of the sociological pioneers of the study of science already pointed out amidst World War II, long before the unrest that would break out at the academic front in the 1960s: ‘An institution under attack must reexamine its foundations, restate its objectives, seek out its rationale. Crisis invites self-appraisal’ (Merton 1973 [1942], 267).

## NOTES

1. The picture does of course become even more complex if one realizes that there are likely to be many other reasons for (non-)use of contraceptives than sexual pleasure and avoidance of sexually transmitted diseases. Men may for instance define condom use as ‘un-manly’ and deny women’s right to go against their male wishes and desires, perhaps especially so in non-Western settings.
2. Needless to say, we here follow Max Weber’s (1978 [1921/22], 215) classical conceptualization of authority as ‘legitimate domination,’ according to which ‘the validity of [...] claims to legitimacy’ does inevitably rest on either ‘belief’ (legal and traditional authority) or ‘devotion’ (charismatic authority).
3. The sociological study of science does of course not discard culture altogether, as can be seen from Donna Haraway’s work on the situatedness of knowledge (Haraway 1988) and Sandra Harding’s standpoint theory (2004) cited above (see also Callon 1995). Karin Knorr-Cetina also takes

culture much more seriously than STS generally, and ANT in particular. Her work about ‘epistemic cultures’ that drive knowledge production in fields like molecular biology and particle physics does indeed entail an elaboration of Kuhn’s classical work on the role of paradigms in science (Knorr-Cetina 1999). Another good example is Sheila Jasanoff’s work about how distinct national risk cultures affect the regulation of genetic engineering and medicine research in the USA and Europe (2012, 23–41, 133–149) and about ‘sociotechnical imaginaries,’ i.e., ‘collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’ (Jasanoff 2015, 4).

4. This similarity between religion and science applies especially to the more orthodox strains of western-style Abrahamic revelation religions like Judaism, Christianity, and Islam on the one hand and the natural sciences (and varieties of social science modeled after the latter) on the other (Furseth and Repstad 2006, 197–208).
5. Precisely this common notion that religion informs people’s cultural understandings of the world, and in effect drives their lifestyles, too, makes the classical sociologies of religion of Weber and Durkheim such valuable blueprints for cultural sociology (e.g., Alexander 1988; Houtman and Achterberg 2016).
6. Despite these marked convergences between Weber’s and Durkheim’s classical accounts and these three modern theories, the latter are positivist theories, informed by distinctions between knowledge about ‘reality as it really is’ and ‘culture and belief.’ They do as such entail moral condemnations of deviations from rationalism and assume the possibility and superiority of strictly ‘unbiased,’ ‘non-motivated’ reasoning and ‘objective’ knowledge. The cultural-sociological Weberian and Durkheimian accounts do not imply such moralism, as for these this is simply how social life inevitably works, whether one likes it or not.
7. Note that such critiques are not only voiced by external critics of contemporary universities and research institutes, but are also expressed within the academy itself as discontents about the ways in which neoliberal evaluation and funding regimes straightjacket, trivialize, and commodify scientific research.
8. There are indeed good reasons to be skeptical about such un-reflexive moralistic dismissals of public discontents about science and about lukewarm attempts at restoring public trust in science. The latter typically take shape as ‘citizen science,’ with universities and governmental bodies involving citizens in scientific research (e.g., Riesch and Potter 2014). For despite the aura of democratic and participatory ideals, it is hard to see how the deployment of citizens in unpaid data collection could unsettle

misplaced scientific pretensions of science entailing a superior way of relating to the world that provides strictly neutral, objective, and culturally unmediated truth.

## REFERENCES

- Alexander, Jeffrey C. 1988. "Introduction: Durkheimian Sociology and Cultural Studies Today." In *Durkheimian Sociology: Cultural Studies*, by Jeffrey C. Alexander, 1–21. Cambridge: Cambridge University Press.
- Alexander, Jeffrey C., and Philip Smith. 2003. "The Strong Program in Cultural Sociology: Elements of a Structural Hermeneutics." In *The Meanings of Social Life: A Cultural Sociology*, by Jeffrey C. Alexander, 11–26. New York: Oxford University Press.
- Aronowitz, Stanley. 1992. *The Politics of Identity: Class, Culture, Social Movements*. London: Routledge.
- Aupers, Stef, and Dick Houtman. 2006. "Beyond the Spiritual Supermarket: The Social and Public Significance of New Age Spirituality." *Journal of Contemporary Religion* 21 (2): 201–22.
- Barnes, Barry. 1974. *Scientific Knowledge and Sociological Theory*. London: Routledge.
- Barnes, Barry. 1977. *Interests and the Growth of Knowledge*. London: Routledge and Kegan Paul.
- Barnes, Barry, David Bloor, and John Henry. 1996. *Scientific Knowledge: A Sociological Analysis*. Chicago: Chicago University Press.
- Bauman, Zygmunt. 1987. *Legislators and Interpreters: On Modernity, Postmodernity and Intellectuals*. Cambridge: Polity.
- Bauman, Zygmunt. 1992. "Introduction: The Re-Enchantment of the World, or, How Can One Narrate Postmodernity?" In *Intimations of Postmodernity*, vii–xvii. London: Routledge.
- Berger, Peter L. 1967. *The Sacred Canopy: Elements of a Sociology of Religion*. New York: Doubleday.
- Besecke, Kelly. 2005. "Seeing Invisible Religion: Religion as a Societal Conversation about Transcendent Meaning." *Sociological Theory* 23 (2): 179–96.
- Bloor, David. 1976. *Science and Social Imagery*. Chicago: University of Chicago Press.
- Brown, Callum G. 2001. *The Death of Christian Britain: Understanding Secularisation, 1800–2000*. London: Routledge.
- Bruce, Steve. 2002. *God Is Dead: Secularisation in the West*. Oxford: Blackwell.
- Brulle, Robert J. 2018. "Critical Reflections on the March for Science." *Sociological Forum* 33 (1): 255–8.



- Callon, Michel. 1995. "Four Models for the Dynamics of Science." In *Handbook of Science and Technology Studies*, edited by Sheila Jasanoff, Gerald E. Markle, James C. Petersen, and Trevor Pinch, 29–63. Thousand Oaks: Sage.
- Campbell, Colin. 1978. "The Secret Religion of the Educated Classes." *Sociological Analysis* 39 (2): 146–56.
- Campbell, Colin. 2002 [1972]. "The Cult, the Cultic Milieu and Secularization." In *The Cultic Milieu: Oppositional Subcultures in an Age of Globalization*, edited by Jeffrey Kaplan and Heléne Lööv, 12–25. Walnut Creek: Altamira Press.
- Campbell, Colin. 2007. *The Easternization of the West: A Thematic Account of Cultural Change in the Modern Era*. Boulder, CO: Paradigm.
- Canovan, Margaret. 1999. "Trust the People! Populism and the Two Faces of Democracy." *Political Studies* 47 (1): 2–16.
- Casanova, José. 1994. *Public Religions in the Modern World*. Chicago: University of Chicago Press.
- Collins, Randall. 2007. "The Classical Tradition in Sociology of Religion." In *The Sage Handbook of the Sociology of Religion*, edited by James A. Beckford and N.J. Demerath III, 19–38. Los Angeles: Sage.
- Davie, Grace. 1994. *Religion in Britain since 1945: Believing without Belonging*. Oxford: Blackwell.
- Dijksterhuis, E.J. 1961. *The Mechanization of the World Picture*. New York: Oxford University Press.
- Dobbelaere, Karel. 1981. *Secularization: A Multi-Dimensional Concept*. London: Sage.
- Dobbelaere, Karel. 1993. "Individuele godsdienstigheid in een gesecculariseerde samenleving." [Individual Religiousness in a Secularized Society]. *Tijdschrift voor Sociologie* 14 (1): 5–29.
- Dobbelaere, Karel. 2016. "Secularization." In *The Blackwell Encyclopedia of Sociology*, edited by George Ritzer. Hoboken, NJ: John Wiley & Sons. <https://doi.org/10.1002/9781405165518.wbeoss064.pub2>.
- Douglas, Mary, and Aaron Wildavsky. 1982. *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers*. Berkeley and Los Angeles, CA: University of California Press.
- Duncombe, Stephen. 2007. *Dream: Re-imagining Progressive Politics in an Age of Fantasy*. New York: New Press.
- Durkheim, Emile. 1964 [1893]. *The Division of Labor in Society*. New York: Free Press.
- Durkheim, Emile. 1995 [1912]. *The Elementary Forms of Religious Life*. New York: Free Press.
- Evans, John H., and Michael S. Evans. 2008. "Religion and Science: Beyond the Epistemological Conflict Narrative." *Annual Review of Sociology* 34: 87–105.

- Festinger, Leon. 1962. "Cognitive Dissonance." *Scientific American* 207 (4): 93–106.
- Fisher, Dana R. 2018. "Scientists in the Resistance." *Sociological Forum* 33 (1): 247–50.
- Fromm, Erich. 1941. *Escape from Freedom*. New York: Rinehart.
- Furseth, Inger, and Pål Repstad. 2006. *An Introduction to the Sociology of Religion: Classical and Contemporary Perspectives*. Aldershot: Ashgate.
- Gauchat, Gordon. 2012. "Politicization of Science in the Public Sphere: A Study of Public Trust in the United States, 1974 to 2010." *American Sociological Review* 77 (2): 167–87.
- Gellner, Ernest. 1992. *Postmodernism, Reason and Religion*. London: Routledge.
- Gieryn, Thomas F. 1983. "Boundary-work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists." *American Sociological Review* 48 (December): 781–95.
- Gieryn, Thomas F. 1999. *Cultural Boundaries of Science: Credibility on the Line*. Chicago: University of Chicago Press.
- Goudsblom, Johan. 1980. *Nihilism and Culture*. Totowa, NJ: Rowman and Littlefield.
- Gouldner, Alvin W. 1962. "Anti-Minotaur: The Myth of a Value-Free Sociology." *Social Problems* 9 (Winter): 199–213.
- Gouldner, Alvin W. 1973. "Romanticism and Classicism: Deep Structures in Social Science." In *For Sociology: Renewal and Critique in Sociology Today*, by Alvin W. Gouldner, 323–66. Harmondsworth: Penguin.
- Gross, Paul R., and Norman Levitt. 1994. *Higher Superstition: The Academic Left and Its Quarrels with Science*. Baltimore: Johns Hopkins University Press.
- Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14 (3): 575–99.
- Haraway, Donna. 1989. *Primate Visions: Gender, Race, and Nature in the World of Modern Science*. New York: Routledge.
- Harding, Sandra, ed. 2004. *Feminist Standpoint Theory: Intellectual and Political Controversies*. New York: Routledge.
- Heelas, Paul, and Linda Woodhead. 2005. *The Spiritual Revolution: Why Religion Is Giving Way to Spirituality*. Oxford: Blackwell.
- Horkheimer, Max, and Theodor W. Adorno. 2002 [1944]. *Dialectic of Enlightenment: Philosophical Fragments*. Stanford: Stanford University Press.
- Houtman, Dick, and Peter Achterberg. 2016. "Quantitative Analysis in Cultural Sociology: Why It Should Be Done, How It Can Be Done." In *Sage Handbook of Cultural Sociology*, edited by David Inglis and Anna-Mari Almila, 225–36. London: Sage.
- Houtman, Dick, and Stef Aupers. 2007. "The Spiritual Turn and the Decline of Tradition: The Spread of Post-Christian Spirituality in Fourteen Western

- Countries (1981–2000).” *Journal for the Scientific Study of Religion* 46 (3): 305–20.
- Houtman, Dick, and Peter Mascini. 2002. “Why Do Churches Become Empty, While New Age Grows? Secularization and Religious Change in the Netherlands.” *Journal for the Scientific Study of Religion* 41 (3): 455–73.
- Houtman, Dick, Rudi Laermans, and Massimiliano Simons. 2021. “Salvaging Cultural Wheat from Institutional Chaff: Anti-Institutionalism in Religion, Politics and Science.” Paper under revision.
- Iannaccone, Laurence, Rodney Stark, and Roger Finke. 1998. “Rationality and the ‘Religious Mind’.” *Economic Inquiry* 36 (3): 373–89.
- Inglehart, Ronald. 1997. *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Countries*. Princeton, NJ: Princeton University Press.
- Inglis, David. 2007. “The Warring Twins: Sociology, Cultural Studies, Alterity and Sameness.” *History of the Human Sciences* 20 (2): 99–122.
- Jasonoff, Sheila. 2012. *Science and Public Reason*. London: Routledge.
- Jasonoff, Sheila. 2015. “Future Imperfect: Science, Technology, and the Imaginations of Modernity.” In *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, edited by Sheila Jasonoff and Sang-Hyun Kim, 1–33. Chicago: Chicago University Press.
- Jasonoff, Sheila, Gerald E. Markle, James C. Petersen, and Trevor Pinch, eds. 1995. *Handbook of Science and Technology Studies*. Thousand Oaks: Sage.
- Josephson-Storm, Jason A. 2017. *The Myth of Disenchantment: Magic, Modernity, and the Birth of the Human Sciences*. Chicago: University of Chicago Press.
- Kinchy, Abby J. 2020. “STS Currents against the ‘Anti-Science’ Tide.” *Engaging Science, Technology, and Society* 6 (2020): 76–80.
- Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.
- Kuhn, Thomas S. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Kunda, Ziva. 1990. “The Case for Motivated Reasoning.” *Psychological Bulletin* 108 (3): 480–98.
- Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Latour, Bruno, and Steven Woolgar. 1979. *Laboratory Life: The Social Construction of Scientific Facts*. Princeton: Princeton University Press.
- Law, John. 1987. “Technology and Heterogeneous Engineering: The Case of Portuguese Expansion.” In *The Social Construction of Technological Systems: New Directions in Sociology and History of Technology*, edited by Wiebe E.

- Bijker, Thomas Parke Hughes, and Trevor Pinch, 105–27. Cambridge, MA: MIT Press.
- Luckmann, Thomas. 1967. *The Invisible Religion*. London: MacMillan.
- Lyotard, Jean-François. 1984. *The Postmodern Condition: A Report on Knowledge*. Minneapolis, MN: University of Minnesota Press.
- Manjoo, Farhad. 2008. *True Enough: Learning to Live in a Post-Fact Society*. Hoboken, NJ: Wiley.
- Marcuse, Herbert. 1964. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Boston: Beacon Press.
- Marwick, Arthur. 1998. *The Sixties: Cultural Revolution in Britain, France, Italy, and the United States, c. 1958–c. 1974*. New York: Oxford University Press.
- Merton, Robert K. 1973 [1942]. “The Normative Structure of Science.” In *The Sociology of Science: Theoretical and Empirical Investigations*, by Robert K. Merton, 267–80. Chicago: University of Chicago Press.
- Motta, Matthew. 2018. “The Polarizing Effect of the March for Science on Attitudes toward Scientists.” *PS: Political Science & Politics* 51 (4): 782–88.
- Musgrove, Frank. 1974. *Ecstasy and Holiness: Counter Culture and the Open Society*. London: Routledge.
- Nickerson, Raymond S. 1998. “Confirmation Bias: A Ubiquitous Phenomenon in Many Guises.” *Review of General Psychology* 2 (2): 175–220.
- Norris, Pippa, and Ronald Inglehart. 2004. *Sacred and Secular: Religion and Politics Worldwide*. Cambridge: Cambridge University Press.
- Riesch, Hauke, and Clive Potter. 2014. “Citizen Science as Seen by Scientists: Methodological, Epistemological and Ethical Dimensions.” *Public Understanding of Science* 23 (1): 107–20.
- Roeland, Johan, Stef Aupers, Dick Houtman, Martijn de Koning, and Ineke Noomen. 2010. “The Quest for Religious Purity in New Age, Evangelicalism and Islam: Religious Renditions of Dutch Youth and the Luckmann Legacy.” In *Annual Review of the Sociology of Religion, Volume 1: Youth and Religion*, edited by Giuseppe Giordan, 289–306. Leiden: Brill.
- Rorty, Richard. 1979. *Philosophy and the Mirror of Nature*. Princeton, NJ: Princeton University Press.
- Rorty, Richard. 1989. *Contingency, Irony, and Solidarity*. Cambridge: Cambridge University Press.
- Rozak, Theodore. 1969. *The Making of a Counter Culture: Reflections on the Technocratic Society and Its Youthful Opposition*. Garden City, NY: Doubleday.
- Sappington, A.A. 1991. “The Religion/Science Conflict.” *Journal for the Scientific Study of Religion* 30 (1): 114–20.
- Seidman, Steven. 1991. “The End of Sociological Theory: The Postmodern Hope.” *Sociological Theory* 9 (2): 131–46.
- Seidman, Steven. 1994. *Contested Knowledge: Social Theory in the Postmodern Era*. Cambridge: Blackwell.

- Stark, Rodney, and Roger Finke. 2000. *Acts of Faith: Explaining the Human Side of Religion*. Berkeley, CA: University of California Press.
- Taggart, Paul. 2000. *Populism*. Buckingham: Open University Press.
- Taylor, Charles. 2007. *A Secular Age*. Cambridge, MA: Harvard University Press.
- Toulmin, Stephen. 1990. *Cosmopolis: The Hidden Agenda of Modernity*. Chicago: University of Chicago Press.
- Tromp, Paul, Anna Pless, and Dick Houtman. 2020. “‘Believing without Belonging’ in Twenty European Countries (1981–2008): De-institutionalization of Christianity or Spiritualization of Religion?” *Review of Religious Research* 62 (4): 509–31.
- Tschannen, Olivier. 1991. “The Secularization Paradigm: A Systematization.” *Journal for the Scientific Study of Religion* 30 (4): 395–415.
- Voas, David, and Mark Chaves. 2016. “Is the United States a Counterexample to the Secularization Thesis?” *American Journal of Sociology* 121 (5): 1517–56.
- Wallis, Roy, and Steve Bruce. 1992. “Secularization: The Orthodox Model.” In *Religion and Modernization: Sociologists and Historians Debate the Secularization Thesis*, edited by Steve Bruce, 8–30. Oxford: Clarendon.
- Weber, Max. 1946 [1921]. “The Social Psychology of the World Religions.” In *From Max Weber: Essays in Sociology*, edited by Hans H. Gerth and C. Wright Mills, 267–301. New York: Oxford University Press.
- Weber, Max. 1963 [1922]. *The Sociology of Religion*. Boston: Beacon Press.
- Weber, Max. 1978 [1921/22]. *Economy and Society: An Outline of Interpretive Sociology (Two Volumes)*, edited by Guenther Roth and Claus Wittich. Berkeley, CA: University of California Press.
- Weber, Max. 2005 [1904/05]. *The Protestant Ethic and the Spirit of Capitalism*. London: Routledge.
- Weber, Max. 2014 [1904]. “The ‘Objectivity’ of Knowledge in Social Science and Social Policy.” In *Max Weber: Collected Methodological Writings*, edited by Hans Henrik Bruun and Sam Whimster, 100–38. New York: Routledge.
- White, Andrew Dickson. 1960. *A History of the Warfare of Science with Theology in Christendom (Two Volumes)*. New York: Dover Publications.
- Wilson, Bryan. 1976. *Contemporary Transformations of Religion*. Oxford: Oxford University Press.
- Wilson, Bryan. 1982. *Religion in Sociological Perspective*. Oxford: Oxford University Press.
- Woodhead, Linda. 2010. “Real Religion and Fuzzy Spirituality? Taking Sides in the Sociology of Religion.” In *Religions of Modernity: Relocating the Sacred to the Self and the Digital*, edited by Stef Aupers and Dick Houtman, 31–48. Leiden: Brill.
- Zijderveld, Anton C. 1970. *The Abstract Society: A Cultural Analysis of Our Time*. New York: Doubleday.