



Introduction

After the 1986 nuclear disaster in Chernobyl, the name of this Ukrainian town became synonymous with *the worst accident ever to have occurred in the civil use of nuclear energy*. Chernobyl has retained this status ever since, that is, until 11 March 2011, when an earthquake and the resulting tsunami partially destroyed the Japanese nuclear power plant at Fukushima. The meltdown of the core at Chernobyl, classified as category 7 on the International Nuclear and Radiological Event Scale, was indeed considered the worst accident that could happen at a nuclear power plant. Technically, the actual meltdown is over. Chernobyl is seen as an event of the past, to which a start and an end were attributed by the technical evaluations following the evolution of the incident. However, its consequences are far from over. As with war, the scars of a nuclear catastrophe run deep; the aftermath is engraved in the environment, in people's bodies and in their memories. Signing a peace treaty does not bring an end to suffering; burying a destroyed reactor core under tons of concrete does not mean the evacuees can come home and simply forget what happened.

Comparing the Chernobyl disaster to a war scene is not just the result of a creative thinking process too strongly conditioned by my research. Many Ukrainian and Belarusian accounts narrate and interpret the struggle endured by firefighters and rescue workers as a battle against an enemy: the burning reactor. The victims, destruction and displacements provoked by this burning reactor have been linked to those caused by the Second World War. The asymmetry of such an equation may seem obvious when we recall the millions killed on the battlefields and murdered in the concentration camps, and this comparison might even seem inappropriate. But these narrations of Chernobyl do indeed exist, as does the metaphor of the *nuclear holocaust*. Chernobyl, however, is also described as a moderately serious industrial accident that caused a few deaths and slightly increased the probability that lethal cancers would occur in the exposed population, in other words a minor health impact compared to the annual number of deaths from road accidents or smoking cigarettes.

So, what does this phrase *worst accident ever to have occurred in the civil use of nuclear energy* actually mean? For some, Chernobyl is proof that this

technology must be abandoned, sooner rather than later. Yet, for others, Chernobyl proves this technology is among the best that mankind has invented to date. How is it possible that the same event can be interpreted in such different ways? Precisely this question is the topic of this book. Some might argue: what is so surprising about the fact that a person in Belarus, having lost not only loved ones but also their home, and whose birthplace has been wiped off the map, would frame the event in a different light than a technocratic engineer in Vienna, tasked with calculating the probability that exactly the same accident will happen in a different nuclear power plant? It is hardly surprising at all that these two people give a different meaning to Chernobyl. Such an observation is scarcely enough to build a whole argument for a book. But what if we find these divergent interpretations in societies considered to be detached from the event, geographically as well as politically? What if we hear completely different narratives and interpretations of the causes and consequences of the accident, even among different groups within these societies? Would this constitute valid grounds for investigating the origin of these different narratives and interpretations, and for seeking explanations for how they came about and are constructed? I think so, which is why I aim to clarify the processes that led to these competing 'truths' circulating in public debates on Chernobyl.

My approach here to concepts such as narratives, interpretations and constructions is discourse analytical. I do not aim to add my own 'truth' to the many already circulating about Chernobyl. What is more, I am not in a position to judge which 'truth' is the most valid. Undoubtedly, many criteria could justify such a judgement: the scientific or political authority of the person or institution to deliver a given statement, or the number of people or institutions that quote this statement. But judging these competing 'truths' in such a manner would be like skimming the surface instead of investigating the discourse. Therefore, I do not ask: is this statement valid? but rather: why was a certain narrative disseminated at a certain time by a certain person or institution, and what is the meaning and significance of this narrative?

Why Compare France and Britain?

France and Britain¹ have a common history in that since the twentieth century, they have been the only nuclear powers in Western Europe. This factor, attributed the role of *tertium comparationis* in the comparison, not only shaped each country's technological history of the military use of the atom, but also strongly shaped both nations' civil nuclear engineering developments. As an offshoot of its military application, the civil use of nuclear energy was similarly governed by classified policies and surrounded in secrecy. Furthermore, nuclear power plants were never simply power plants, in France or in Britain. The

inauguration of the first plants went hand in hand with intensive demonstrations of national pride; pride that they had been able to master this technology, that these genius engineers were citizens of their nation. The nuclear powers' shared status not only reflected the specific role attributed early on to the civil use of nuclear energy, it also meant they encountered criticism from sections of their respective societies questioning this technology. Although this critique differed between the two countries – in France it was directed at the civil use of nuclear energy, and in Britain the military use – important environmental and anti-nuclear movements sprang up in both, shaping their national discourse on nuclear technology. Public and political support for the civil use of nuclear energy has since fluctuated over time in both countries. Although their respective developments did not begin at the same time nor evolve identically, both countries have demonstrated strong political support for a *nuclear renaissance* since the early 2000s.

With so many similarities, we might expect their direct reactions to the 1986 disaster and the ensuing debates on its impact would be similar, too. Yet, this is only true for one aspect: the direct reactions in 1986, particularly from official sources like government or radiation protection agencies. However, the debates regarding the impact of Chernobyl that would unfold in the years to come could hardly have progressed more differently. Having been hit by comparable levels of radioactive fallout,² the people in both countries were assured there would be no health repercussions. Official statements released at the time specified: the accident had occurred too far away for there to be any effects, and even if a minimal quantity of airborne radionuclides had reached the countries, the associated risk levels would be marginal. Furthermore, according to these official statements, there were no grounds for questioning the safety of the national nuclear programme because the accident was due to a combination of very particular elements: the Soviet (hence inferior) technology, the faulty design of the reactor and the plant workers' human errors. In the following chapters, I will analyse these statements, how they were communicated and how the public, certain groups and individuals reacted to them. I should point out here, that despite France's and Britain's similar point of departure in 1986, their debates on the impact of Chernobyl developed in very different ways. In France, Chernobyl was assigned the role of a *lieu de mémoire*³ (site of memory, which signifies a symbolic element of a community's memorial heritage) and became a common reference point in nuclear energy debates as well as wider public policy arguments. In Britain, on the other hand, Chernobyl was practically almost forgotten.

How is it possible that Chernobyl was allocated two diametrically opposed positions in French and British collective memory? What influential factors enabled the memory of Chernobyl to be kept alive in France, yet buried in Britain? Who were the stakeholders in this process? And what are the overar-

ching frames of these developments, so essential for our understanding of the symbolic meanings of the two national Chernobyl debates? These questions and my research attempts to answer them form the core of this book. As this book ventures into generally un-researched terrain, sometimes I will have to raise new questions instead of providing answers. But I am sure that raising new questions will also contribute to a better understanding of the contested ‘truths’ surrounding Chernobyl.

Until recently, Chernobyl’s impact on the collective memory of Western European societies was practically overlooked. Historians had held on to the idea that a history of Chernobyl only existed in those countries most (directly) affected by the radioactive fallout: Belarus, Ukraine and the Russian Federation. Some attention turned towards West Germany, where the anti-nuclear movement had just reached its peak shortly before Chernobyl; news of the accident inevitably evoked a very strong reaction there. However, even though several Western European governments and radiation protection agencies were quick to state that their countries had not been affected by any considerable radioactive fallout – whether true or not, does not concern us here – Western Europe experienced an intensive debate over Chernobyl’s potential impact. Chernobyl has thus become a historical European event and we cannot equate its discursive impact just with its physical impact. But if it was not the amount of radioactive fallout that determined a specific country’s views on Chernobyl’s impact, what contextual factors shaped the national Chernobyl debates? I intend to answer precisely this question by comparing the French and British Chernobyl debates.

The Levels of Comparison

My comparative research occurs on several levels. Firstly, I compare the various narratives within each national⁴ Chernobyl debate. Secondly, I compare the different debates in Britain and France. Finally, my comparison of these debates on several anniversaries of the accident reveals the changes and continuities over time.

To compare the narratives within national contexts, I focus on the categories of personal affectedness, radiophobia/apocalypse and anti-East European/anti-Soviet stereotypes. These categories are very much interdependent – a certain belief in one, directly influences statements on the others. As each category refers to a different issue addressed within the Chernobyl debate, I explain them separately. The three narrative elements I compare relate to: national nuclear politics (personal affectedness), general debates on the health impact of low-level radiation (radiophobia/apocalypse) and the Cold War setting (anti-East European/anti-Soviet stereotypes).

Firstly, the category of *personal affectedness* as used here, is the way actors consider themselves or their direct environment being impacted by the accident. This impact is either physical in terms of the radioactive fallout or has a less physical connotation in that the perceived impact can transfer the accident's scenario to national nuclear plants. The fear of eating contaminated vegetables bought at the local market or the fear that a similar accident could happen in a nearby nuclear plant, are the direct result of personal affectedness. Personal affectedness concerns the local, regional and national context. A strong perception of personal affectedness could cause an actor to call for a certain policy at national level, such as: banning certain foodstuffs, increasing control of radiation levels in the air and soil, instigating safety checks at national nuclear power plants, or even shutting down national plants. On the other hand, if an actor perceived low personal affectedness or even none at all, they considered these claims to be the product of panic or exaggerated fear and saw no reason why the accident in Chernobyl should influence national nuclear policies.

Secondly, the category of *radiophobia/apocalypse* tackles the different evaluations of the situation in Eastern Europe's regions most impacted by the radioactive fallout. The two extremes at either end of the evaluation scale are the explanatory concepts of radiophobia and apocalypse.⁵ The radiophobia concept implies that the increase in illnesses observed in these regions is not actually down to the radiation itself; it is a result of the exaggerated fear of radiation and the psychological stress provoked by the resettlements and the rapidly changing political situation in Eastern Europe in the late 1980s and early 1990s. The concept implies furthermore that this stress was reinforced by distrust in the medical and political authorities, resulting in people's increased uncertainties and worries about their own health and that of their children. To avoid saying 'radiophobia' because this term was discredited in the early 1990s, sources often re-termed these assumptions as 'stress-induced illnesses'.⁶ From a radiophobia point of view, the best cure for the illnesses would be to bring these regions back to normal and give the resettled populations incentives to move back to their home regions. The other end of the evaluation scale is an apocalyptic image.⁷ This reading of the situation considers that the worst is yet to come: due to genetic mutations in humans, plants and animals, the true impact of the accident will only come to light very gradually, and there is nothing anyone can do to stop this process. From this perspective, measures must be taken to resettle even larger sections of the affected populations. These evaluations of the situation in Eastern Europe are, of course, closely linked to an actor's perception of personal affectedness: if people believe that exaggerated fear is the source of increasing illnesses in Belarus, they would not consider it even possible that the fallout in Western Europe had an impact on health there. At any rate, the frames of reference differ. Personal affectedness refers to

the (Western European) actor's direct environment, whereas radiophobia and apocalypse focus on Eastern Europe.

Thirdly, the category of *anti-East European/anti-Soviet stereotypes* considers the way an actor draws on anti-East European or anti-Soviet stereotypes to describe the accident scenario. Using a kind of Cold War rhetoric, many narratives about Chernobyl comment on alcohol consumption and a generally imprudent handling of dangerous technologies within the USSR, contrasting them with statements on the good behaviour modelled in the West. Yet other actors outright dismiss these accusations, considering them as propaganda aimed to cover up problems in the West's nuclear initiatives. Thereby, Chernobyl narratives became a statement against the political opposition in the East–West discourse. Again, instead of judging which of these viewpoints is more or less 'true'⁸ I here concentrate on how the legacy of Cold War propaganda and side-taking prevails in the Chernobyl debates and influenced interpretations of the accident. Compared to the two other categories of comparison, the aspect of anti-East European/anti-Soviet stereotypes plays a less prominent role in more recent sources. It featured primarily in accounts published in 1986 and 1987, addressing the acute phase of the accident: the event as it unfolded and the immediate aftermath. When my research focus switched from the technicalities to the debate surrounding the health impact of the fallout, the other two categories of comparison became more central to my analysis.

However, in March 2011, the issue of cultural stereotypes and reactions to nuclear plant accidents gained new momentum. Many actors whom I had researched regarding the Chernobyl debate initially narrated and framed Fukushima similarly to Chernobyl.⁹ But one decisive element did not apply in 2011: the Cold War. This gap in the narrative structure, however, was quickly filled with something resembling the anti-East European/anti-Soviet element: the Japanese hierarchy bondage stereotype.¹⁰ What now came under fire instead of 'Eastern European carefreeness', was the 'Japanese authoritative culture', which was held responsible for the course of events. This alternative explanation for the occurrence of a large-scale nuclear accident highly influenced the other discursive categories of personal affectedness and radiophobia/apocalypse in the Fukushima narratives. As stated above, a conviction regarding one variable directly influences the statements made about the others. In Western Europe, the perception of personal affectedness (in terms of how the accident's scenario is transferred to national nuclear plants) was even stronger in the case of Fukushima. The very fact that *stress tests* (safety assessments) were conducted on all the reactors in the European Union (EU), is telling evidence of this perception. The destroyed reactors in Chernobyl and Fukushima did indeed have very different technical features. Thus, tech-

nical considerations played a decisive role in implementing stress tests after Fukushima but not after Chernobyl. However, the fact that the Fukushima Daiichi reactor design was more like the Western European plants than the Chernobyl RBMK reactor, was not the main issue triggering Europeans' sudden safety concerns. The reasoning was rather: if such an accident can happen in a well-organized country like Japan, then a severe nuclear accident might very well be possible in the Western world too. With Chernobyl, the reasoning had been the opposite: since the accident happened in the USSR, it is impossible that a similar disaster could strike in the West. Contemplating this crucial difference in perceived Western European personal affectedness between Chernobyl and Fukushima directed my focus to the anti-East European/anti-Soviet stereotypes in the Chernobyl narratives. The events of 2011 have thus slightly changed one aspect of my research perspective but not my project as such. Although many people suggested I should switch to comparing the Chernobyl and Fukushima debates in one country rather than the Chernobyl debates in different countries, I persevered with my initial project. This decision was based on two factors: on the one hand, I think the Fukushima debate is still unfolding, which makes it difficult to achieve an accurate analysis of the narratives and interpretations. On the other hand, the constant and often not very well-informed references to Chernobyl within the Fukushima discourse have proved that the Chernobyl debate still crucially requires research.

Although I do not provide a general theory of how to analyse discourses on nuclear accidents, my analytic categories, findings and hypotheses can prove useful for researchers dealing with other (nuclear) disasters.¹¹ Both Fukushima and Chernobyl have demonstrated that, regardless of where an accident occurs, large-scale nuclear accidents are approached technically, socially and discursively in many parallel ways. However, my research is not just about Chernobyl and nuclear accidents. This book also sheds light on important aspects of the social and cultural history of France and Britain. The following section introduces the aspects I used as categories for comparing the two nations.

Why should we research national entities in relation to a nuclear power plant accident – an unsurpassed transnational event – whose fallout completely disregarded every border, even an Iron Curtain? Because it is the nation state's framework that mostly determines the debates on nuclear power in a society and consequently the related debates on Chernobyl. Transnational aspects clearly play an important role, especially regarding the exchange of information, expert evaluation, anti-nuclear activist networks, globally acting companies or lobby groups and international organizations.¹² However, how all these influences interact and impact a debate on a specific political topic such as nuclear energy, is very much dominated by legal and institutional aspects, and therefore by the nation state. The field of nuclear politics is a par-

ticularly good example. Although many aspects of this field are regulated at an international level, for example through the International Atomic Energy Agency (IAEA), the International Commission on Radiological Protection, or Euratom, the decision to build or close down nuclear plants is taken at national level. Neighbouring states might express concerns, like Austria in the debate over the Czech power plant Temelín. National authorities, however, make the ultimate decision – whether it is the German Bundesrat and Bundestag in the 2010–11 debate on *Laufzeitverlängerung* (extending the active lifespan of German nuclear power plants); the French President, Prime Minister and certain technocrats with the 1974 *Plan Messmer*; or the Austrian people, in the form of a referendum against activating the Zwentendorf power plant.

As stated above, comparing the national case studies of France and Britain is particularly fruitful thanks to their shared history as nuclear powers.¹³ With so many similarities in their social and cultural nuclear past, it is even more interesting to question why the trajectory of the Chernobyl debates in these two countries has been so different; why did Chernobyl become a *lieu de mémoire* in France, but not in Britain? To answer this question, I compared the discursive frameworks surrounding these debates. I was interested to see whether different reference points shaped the various narratives in the two national contexts. Having identified the reference points and arguments in the debates, I researched their historical and political contexts to discover why a certain reference worked or was needed for narratives in one national context but not in another. I identified what I consider the key aspects that have influenced the different development of the Chernobyl debates in France and the UK: the formation, role and status of nuclear experts and ‘counter experts’; the (changes to) national nuclear politics, policies and polities as well as their pro-nuclear or anti-nuclear orientations; the anti-nuclear movement’s structure, political role and protest culture; the (issues with) national nuclear plants; and the importance of charitable organizations. I will return to all these aspects in due course, to analyse and contextualize the sources. I mention them here shortly to indicate my lines of comparison. For the historical and political context, I must introduce a term that features prominently in my arguments: *techno-political regime*. Gabrielle Hecht used this term in her book *The Radiance of France* to explain the different approaches pursued by the Commissariat à l’énergie atomique (CEA) and Electricité de France (EDF) to nuclear policies in the post-war period. My use of the term differs because I do not distinguish different regimes within one state. Nevertheless, I describe the same ‘linked sets of individuals, practices, artefacts, programs, and ideologies’.¹⁴ As *techno-political regimes* play an essential role in the historical and political context of the two countries, I use this term to cluster the above-mentioned aspects linked to a country’s nuclear complex.

State of the Art in Chernobyl Research

The Chernobyl accident has only recently become a topic of historical research. Historians are therefore on the cusp of defining their role in Chernobyl studies. This role will not be limited to finding out what really happened on 26 April 1986, once the archives are opened. Historians can primarily contribute by adopting a critical approach to sources, that is to say questioning how a certain narrative developed and not just taking it for granted, or by investigating a narrative's impact on a society's collective memory. Historicizing Chernobyl does not mean this event must be banished to the past, denying that its radioactive, social and political fallout still has an impact today and might continue to do so for a long time. Historicizing Chernobyl not only implies that Chernobyl is considered an event whose meaning changes over time; it also asks why these changes occur, in which context, and who is instigating them.

The history and anthropology of Eastern Europe is surely a field that has addressed Chernobyl more than any other. In this field, Adriana Petryna's work has received the most attention internationally.¹⁵ Recently, a research group based at the Centre for Contemporary History in Potsdam (Germany),¹⁶ headed by Melanie Arndt, has made significant contributions.¹⁷ There are too many important works in this field of research to mention here in detail.¹⁸ Widening the close links between Chernobyl and Eastern European history is a very slow process. The 2016 international conference *Chernobyl – Turning Point or Catalyst? Changing Practices, Structures and Perceptions in Environmental Policy and Politics (1970s–1990s)*, organized by the Heinrich-Böll-Stiftung in Berlin, was an important step towards investigating Chernobyl's social and political impact across Europe.¹⁹ Within wider Western European nuclear history, Chernobyl does not yet play a central role.²⁰ For my research on French and British Chernobyl debates, works by Gabrielle Hecht,²¹ Sezin Topçu²² and Brian Wynne²³ were therefore of utmost importance.

Other humanities and social sciences disciplines have of course researched Chernobyl. In particular, political scientists have from the outset investigated the direct impact of the accident on politics and policies. Angela Liberatore's work stands out as she did not limit her research to a single country, but compared Italy, Germany, France and even included the European Community and international organizations.²⁴ Sociologists have also focussed on Chernobyl, using the social dynamics surrounding the accident to underpin their theories with empirical evidence.²⁵ Chernobyl has been associated with Ulrich Beck's work in particular; not only because his famous book *Risk Society*²⁶ came out the month immediately after the accident, but also because in Beck's later article, directly connecting his theory to the event, he coined a term used ever since to denote Chernobyl: *anthropological shock*.²⁷ Sociol-

ogists have long been greatly interested in researching and theorising risk. Wolfgang Bonß identified the very foundation of risk sociology in the debates on nuclear technology.²⁸ Considered an incarnation of a risky technology, the nuclear complex has been an illustrative example of risk sociologists' arguments.²⁹ Social philosophers have also concerned themselves with the specific social implications of nuclear technology.³⁰ The public perception of nuclear risk is yet another field researched intensively by sociologists³¹ and one that Christoph Hohenemser and Ortwin Renn have examined in the case of Chernobyl.³² What has proved problematic is that some researchers take a very normative stance when investigating people's so-called overreactions or irrational behaviour and fail to reflect on the basis of their own judgements and the scientific facts they rely on.

Researchers in literature and media studies have also focussed on Chernobyl, investigating the visualization and artistic narration³³ for example in the successful video game *S.T.A.L.K.E.R.*³⁴ – the highly successful HBO miniseries *Chernobyl* will very likely give a boost to this research. In recent years, a growing body of academic work has emerged, looking at how people experience and visualize their visits to the forbidden zone. These visits are probably the result of marketing campaigns promoting the Chernobyl plant as a tourist attraction.³⁵ Since the 2011 nuclear accident in Fukushima,³⁶ scholars have been investigating Chernobyl in connection with other nuclear accidents,³⁷ and within the broader context of disaster studies.³⁸

The research in the humanities and social sciences represents the minority of academic texts about Chernobyl. Numerous disciplines within the natural sciences and engineering have contributed more: nuclear physics, civil engineering, meteorology, geology, biology and nuclear medicine all focus on different aspects of this nuclear accident. Research projects range from analysing the physical reactions in the reactor and the movements of the airborne radionuclides, to the deposition of radionuclides in different geological settings and the uptake of radionuclides in plants and animals. Intensive research has of course studied the effects of Chernobyl radiation on the human body. Simply the list of journal articles featuring Chernobyl in the title would fill an entire book. International governmental and non-governmental organizations have condensed this multitude of Chernobyl studies into reports on the health and environmental effects and calculated the Chernobyl death toll.³⁹ These reports are crucial in international nuclear politics.⁴⁰ Assessing the health impact of Chernobyl automatically implies stating the health effects of reprocessing plants, nuclear power plants, uranium mines and of course, other nuclear accidents. Assuming a certain number of Chernobyl victims from the released levels of radionuclides in 1986 implies a certain number of Fukushima victims from the released levels of radionuclides in 2011.⁴¹

The Methodology

When I began studying Chernobyl in 2006, I was particularly interested in how its twentieth anniversary had been used to underpin political arguments regarding energy policies. Applying a ‘politics of history’⁴² approach, I considered what commemorative activities the various actors in the debate had carried out and thereby how the accident had been instrumentalized as a political argument. The actors discursively constructed a specific narrative of the historical event that corroborated their nuclear political claims. While tracing the French Chernobyl debate and its evolution from 1986 to 2006, I focussed on the accident’s anniversary, as accounts of Chernobyl were not published on random dates. They mostly appeared on the date of the accident, 26 April. My search for primary sources began with the years 1986–87 (for immediate interpretations of the event’s occurrence), and then the years 1996 and 2006; I was thus able to cover a broad time span and identify changes and continuities in the narratives. I applied the same research strategy to Britain.

In practice, adopting this research strategy meant I had to find all kinds of material containing a narrative of Chernobyl and aiming at a wide audience⁴³ in 1986–87 or on the accident’s tenth or twentieth anniversaries. This approach had two major implications. Firstly, I did not consult any institutional archives. I was not interested in internal discussions within the governmental agencies or anti-nuclear groups involved; this would have been a different project. The main criterion for including a source in my research was its public availability.⁴⁴ Secondly, I researched a broad variety of actors communicating their Chernobyl narratives through an even broader variety of material: books, newspaper articles, leaflets, websites, films, documentaries, songs, photos, art exhibitions, speeches and more. Thus, my sources were often a combination of textual and visual elements: books and leaflets are illustrated with graphs, photographs, or artwork; a CD has an illustrated cover and an explanatory booklet. When analysing a source, I always considered these various elements and their interaction. My research does not include a comprehensive quantitative analysis of media content.⁴⁵ However, I did look into British and French news reporting to see what level of importance was attributed to Chernobyl compared to other topics, and which aspects were covered in 1986–87 as well as on the accident’s anniversaries.

I applied the method of hermeneutical source analysis, involving three steps. First, I investigated a specific source’s background: who was the author? When was the item published? Were the various authors linked at a personal or institutional level? The second step was analysing the narrative presented in the source. I queried: how are the causes and consequences of Chernobyl described? What kind of metaphors, references and explanatory frameworks do

the authors use? What statements and wider interpretations are implied? After this analysis, I located each narrative within the wider context of the Chernobyl debate. I discovered that most narratives had an underlying structure consisting of three key elements that can be described as variables. Depending on an author's perspective of these three aspects, the Chernobyl narrative took on a certain form. I was thus able not only to compare the narratives, but also to map the discursive field in which the Chernobyl debate was embedded. Elements from other debates had entered this discursive field, making it possible to assign meaning to Chernobyl within a wider reference frame. The key elements I identified for any given Chernobyl narrative are: personal affectedness, radiophobia/apocalypse and anti-East European/anti-Soviet stereotypes. I introduced these three key elements earlier when discussing the levels of comparison. They clearly emerged during the research process and were not applied a priori to the sources.

Every account of Chernobyl provides a particular narrative of the accident and a certain interpretation of what happened, what is still happening and what will happen in the future. No matter how objective or subjective it claims to be, each account aims to make a certain statement about Chernobyl. I refer to the way these statements differ and contest as the *Chernobyl debate*, namely the variety of and relationship between statements, interpretations and narratives on Chernobyl that have circulated in public debates over time. What turns this variety into a debate is the setting; although every statement claims to represent the reality surrounding Chernobyl, they are conflicting because they are all based on different narrative elements that they claim to be facts.

This conceptualization of the Chernobyl debate is deeply influenced by Science and Technology Studies (STS). Within this field, categories such as scientific fact/truth or expert/counter expert/layperson are not considered fixed. This is why I often put these terms in quotation marks to make clear that I am not making normative statements. Rather, I see these concepts and terms as part of a societal discourse and specific power setting. This, however, does not mean that I regard every statement ever pronounced on Chernobyl as equal to all the others or declare that one is just as valid as any other. A reviewer of my earlier book on Chernobyl and France claimed that I placed 'obscure theories about the course of the accident on a par with the relevant literature'.⁴⁶ According to the nuclear engineering scientific community's internal logic, it is certainly incorrect behaviour to dedicate equal space to both. However, my argument was not and still is not about judging these statements, my argument is about questioning the logic behind them and investigating the reasons for which they are presented.

Asking why these narratives were presented in a specific geographic location, at a specific time, brings us conveniently to the final step of the research

process: the contextualization. Contextualization implies researching to what extent the French and British cultural-historical settings and political systems affected the development of the Chernobyl debates in each country. It also implies investigating how the national Chernobyl debates interconnect with international and transnational debates regarding the civil use of nuclear energy. Yet, what I do not provide in this book is an investigation into the history of my very categories of comparison. This could be considered a limitation of my work. But as this book is primarily concerned with nuclear debates in France and Britain, it would have exceeded the scope of this text to also elaborate the historiography of medical and psychological research on radiophobia or the technical grounds for anti-Soviet stereotypes in nuclear industry debates.⁴⁷ Similarly, the book does not cover the global history of the medical discourse on low-level radiation health effects or the history of radiation protection – which form the background of the debates on the health impact of Chernobyl.⁴⁸ It is the public French and British Chernobyl discourse which lies at the heart of this book, and I invite every reader to dive deeper into the various histories to which my particular Chernobyl story is connected.

This methodological approach shapes the structure of my book: I focus on the period between 1986, the year of the accident and 2006, its twentieth anniversary. I do not include the twenty-fifth anniversary in 2011, because the memory work on Chernobyl as well as the entire nuclear discourse were then strongly influenced and overshadowed by the recent Fukushima accident.⁴⁹ With regard to the actors, I have assembled them in ‘actor clusters’. This was not only to avoid confusion and reduce the risk that the reader would get lost in an endless list of individuals and organizations; it was also a good way to highlight the similar backgrounds to the narratives emerging from these clusters. Based on the structural reasons for an actor’s involvement in the Chernobyl debate, I identified the following clusters: public authorities (governments, radiation protection agencies); the nuclear power industry (companies, associations); critical voices (anti-nuclear groups, sheep farmers, landowners); individual voices; and Chernobyl solidarity movement groups. The key narrative categories of personal affectedness, radiophobia/apocalypse and anti-East European/anti-Soviet stereotypes are the other themes in this book. Throughout the text, I interweave my explanations and hypotheses on why different narratives have developed in French and British Chernobyl debates. Each chapter highlights the context in which a certain actor cluster operates. This context refers to the formation, role and status of nuclear experts and ‘counter experts’; the (changes to) national nuclear politics, policies and polities as well as their pro-nuclear or anti-nuclear orientations; the anti-nuclear movement’s structure, political role and protest culture; the (issues with) national nuclear plants; and the importance of charitable organizations. My explanations of this context are combined throughout the book with an analysis of the sources.

I decided to devote more space to British sources than French ones, for two reasons: firstly, my book on the French Chernobyl debate already deals with the French material in detail, and secondly I considered it important to discuss the British Chernobyl debate in depth and introduce as many actors as possible since this has not yet been a topic of historical research. This is clearly evidenced by the fact that a search for the key word ‘Chernobyl’ in the Bibliography of British and Irish History in 2012, when I started my research on Britain, showed zero results. In addition, the civil use of nuclear energy in Britain has been underrepresented in nuclear history, compared to works on military use.⁵⁰ The two main British nuclear historians, Margaret Gowing and Lorna Arnold,⁵¹ have not covered the recent era and only a handful of publications analyse the British nuclear complex through a historical lens.⁵² From the humanities and social science perspectives, only Brian Wynne has written about Britain and Chernobyl, albeit with a clear STS perspective on knowledge production and experts-laypersons-relations regarding the early restrictions on sheep farms. In order to pay due credit to the wider context of the French and British debates, I have incorporated in the text information on international and transnational aspects of the Chernobyl debate – such as the influence of dissident voices from Eastern Europe, the contestation of reports such as the one delivered by the Chernobyl Forum or the theories surrounding the so-called IAEA–WHO agreement.⁵³

Notes

1. I use ‘Britain’ here to refer to The United Kingdom of Great Britain and Northern Ireland, or in short United Kingdom, or the UK.
2. For an early estimate of the levels and intensity of the radioactive fallout in both countries, see: NRPB, *Preliminary Assessment of the Radiological Impact*, Appendix, Figure 7. According to this map, French and British citizens received a similar effective dose: 10–50 μSv in most areas and 80–300 μSv in the more affected regions, specifically the south-east (France) and the north-west (Britain). Initial maps were produced by extrapolating individual measuring points (n.b. the number of points varied widely between countries). These estimates were revised and refined after 1986. Later maps were the result of a compendium of data derived for example from measuring radionuclides in soil and grass samples, rainfall or even nationwide caesium levels. In 1996, the European Commission published the comprehensive *Atlas on the Caesium Deposition across Europe*.
3. Since Pierre Nora’s classic work on French sites of memory, the application of his concept shifted from nation building processes to widely ranging settings where collective memory contributes to a specific group’s self-conception. My description of Chernobyl as a *lieu de mémoire* does not imply that Chernobyl holds a certain place in a nation’s self-conception (though this might be the case, for example in Belarus) but rather that the memory of the event contributes to the identity of a certain group. Recently, the *lieu de mémoire* concept was adopted by environmental historians, resulting in an anthol-

ogy and a special issue of *Global Environment on ecological lieux de mémoire*. I contributed to both: Kalmbach, 'Radiation and Borders'; id., 'Von Strahlen und Grenzen'. I also contributed to the anthology on *European lieux de mémoire*: Kalmbach, 'Tchernobyl – angle mort'.

4. The phrase 'national Chernobyl debate' does not imply that debates necessarily took place on a national level. Many addressed regional issues like the environmental impact in the Lake District (UK) or in Corsica (France). Some issues remained there, while others attracted wider public interest. Thus, 'national Chernobyl debate' refers to the larger contextual setting and does not judge the scale of the debate.
5. If I classify a narrative as linked to the concept of 'radiophobia', I do not automatically imply that its author advocates that radiophobia exists as a medical condition. Likewise, by classifying a narrative as 'apocalyptic', I do not mean to imply that this narrative includes mutated monsters. I use the classifications 'apocalypse' and 'radiophobia' as an *Idealtypus*.
6. As Tatiana Kasperski demonstrated in her research, the term 'radiophobia' in relation to Chernobyl was first used in a report by Ilin, president of the USSR's national radiation protection committee, and his colleague Pavlovskii. This report was published in the 1987 4th IAEA Bulletin under the title *Radiological Consequences of the Chernobyl Accident in the Soviet Union and Measures Taken to Mitigate Their Impact: Analysis of Data Confirms the Effectiveness of Large-Scale Actions to Limit the Accident's Effects*. In Belarus, the term was profoundly discredited in the 1990s, as Kasperski explains in 'La politique de la mémoire': 'The protest movements which emerged in the late 80s and early 90s and for which the Chernobyl catastrophe served as catalyst often referred to this term in order to demonstrate the Soviet authorities' cynicism vis-à-vis the dangers the inhabitants and the liquidators had encountered. The term "radiophobia" thus became widely discredited because it evoked the attempts of the communist leaders to dissimulate the harm caused by the accident by misinforming the population and the international community' (393).
7. Narrating Chernobyl as an apocalypse must be placed in the wider context of traditionally framing disasters and catastrophes with apocalyptic images and of the deep impact of depictions of the destruction of Hiroshima and Nagasaki on the imagery surrounding nuclear technology in general. For a history of nuclear images, see: Weart, *Nuclear Fear*.
8. For a well-informed account of the security culture at the Chernobyl plant, see: Schmid, 'When Safe Enough is not Good Enough'. Schmid's work also shows that the use of national and cultural stereotypes in Chernobyl narratives had yet another dimension in the Soviet Union: the government in Moscow placed the blame on Ukrainian plant workers. However, the Chernobyl debates in Western Europe featured hardly any differentiation between groups and ethnicities in Eastern Europe or within the Soviet Union. For this reason, I did not consider the differentiation in my comparison.
9. Kalmbach, 'From Chernobyl to Fukushima'.
10. The interpretation of Fukushima as a 'Japanese disaster' was certified by the *Nuclear Accident Independent Investigation Commission* executive summary report in English. In his foreword, the chairman of this Diet-appointed commission, Kiyoshi Kurokawa, called the events at Fukushima a 'disaster "Made in Japan"': The National Diet of Japan, *The Official Report*, 9.

11. This book contributes to disaster research by highlighting the enduring aftermath of Chernobyl, and the important part narratives and memory play in a society's understanding of a disaster and its meaning for that society. As a disaster does not correspond with the precise moment the emergency measures are terminated, a political process is needed to negotiate a new 'normality' of daily life that can compensate for the effects of the actual disaster.
12. For a recent publication stressing the importance of transnational approaches in nuclear history, see: Kirchhof and Meyer, 'Global Protest against Nuclear Power'.
13. In considering a *tertium comparationis* other than nuclear power status, it could be worthwhile conducting comparative research on Chernobyl debates in Sweden and Turkey, two non-USSR countries that experienced significant levels of fallout, or in Denmark and Germany, two countries where anti-nuclear convictions were particularly strong in 1986.
14. Hecht, *The Radiance of France*, 56.
15. Petryna, *Life Exposed*.
16. The project group of six scholars conducted research on *Politics and Society after Chernobyl* in Belarus, Ukraine, Russia, Lithuania and Germany: Melanie Arndt, Evgenija Ivanova, Tatjana Kasperski, Anastasija Leuchina, Andrej Stepanov and Aleksandr Dalhouski.
17. Arndt, *Politik und Gesellschaft nach Tschernobyl*.
18. For the history and anthropology of Eastern Europe relating to Chernobyl, see: Arndt, 'Memories, Commemorations, and Representations of Chernobyl'; Kuchinskaya, 'Twice Invisible'; id., *The Politics of Invisibility*; Kasperski, 'La politique de la mémoire'; Stsiapanau, 'The Chernobyl Politics in Belarus'; Phillips, 'Chernobyl's Sixth Sense'; Sahm, *Transformation im Schatten von Tschernobyl*; id., 'Und der dritte Weltkrieg heißt Tschernobyl'; Arndt, 'Von der Todeszone zum Strahlen-Mekka'; Sahm and Sapper and Weichsel, 'Tschernobyl: Vermächtnis und Verpflichtung'; Marples, *Chernobyl and Nuclear Power*; id., *The Social Impact*; Schmid, *Producing Power*.
19. The presentations were filmed and are available online: <https://www.youtube.com/watch?v=KpW5n9GVOtg> (last accessed 15 February 2020).
20. Kalmbach, 'Revisiting the Nuclear Age'. For a media history study of Chernobyl, see: Jordan, *Ausgestrahlt*.
21. Hecht, *The Radiance of France*; id., 'Nuclear Ontologies'; id., *Being Nuclear*.
22. Topçu, *La France nucléaire*; id., *L'agir contestataire*.
23. Wynne, 'Misunderstood Misunderstanding'; id., 'Sheepfarming after Chernobyl'; id., *Rationality and Ritual*.
24. Liberatore, *The Management of Uncertainty*.
25. A telling example: Bonß, *Vom Risiko*.
26. Beck, *Risikogesellschaft*.
27. Beck, 'The Anthropological Shock'.
28. Bonß, *Vom Risiko*, 9.
29. See: Perrow, *Normal Accidents*; Luhmann, *Risk*; Freudenberg, 'Perceived Risk, Real Risk'; Slovic, 'Perception of Risk'; Boudia and Jas, 'Risk and "Risk Society"'.
30. See: Anders, *Endzeit und Zeitenende*; id., *Die atomare Drohung*; Dupuy, *Pour un catastrophisme éclairé*.

31. For a classic work, see: van der Pligt, *Nuclear Energy and the Public*. For a study dealing specifically with France, see: Bouvier, 'Risques perçus et risques industriels'. For how this perception is influenced by risk communication, see: Fischhoff, 'The Nuclear Energy Industry's Communication Problem'; id., 'Risk Perception and Communication Unplugged'.
32. Hohenemser and Renn, 'Chernobyl's Other Legacy'; Renn, 'Public Responses to the Chernobyl Accident'.
33. See: Bürkner, 'Eine vollkommen neue Realität'; Zink, 'Approaching the Void'.
34. *S.T.A.L.K.E.R.: Shadow of Chernobyl* is a popular ego-shooter video game set in the restricted zone after a second severe accident at Chernobyl. It was created by a team of Ukrainian game developers and released in 2007. Thanks to widespread success in Eastern and Western Europe and the US, a sequel was released in 2010: *S.T.A.L.K.E.R.: Call of Pripjat*.
35. For an analysis of tourists' photos of Chernobyl, see: Goatcher and Brunsten, 'Chernobyl and the Sublime Tourist'. For reflections on the role of Chernobyl as tourist attraction, see: Stone, 'Dark Tourism'.
36. Hindmarsh, *Nuclear Disaster at Fukushima Daiichi*.
37. See: Bohn et al., *The Impact of Disaster*.
38. See the 2012 workshop *Historical and Contemporary Studies of Disasters: Placing Chernobyl, 9/11, Katrina, Deepwater Horizon, Fukushima and Other Events in Historical and Comparative Perspective* (Society for the History of Technology annual conference) at: <http://shotprometheans.wordpress.com/workshops/2012-workshop/> (last accessed 15 February 2020). In recent years, Science and Technology Studies scholars have made considerable efforts to establish a transnational research agenda for the new field of disaster STS: <http://fukushimaforum.wordpress.com/workshops/sts-forum-on-the-2011-fukushima-east-japan-disaster/> (last accessed 15 February 2020).
39. The major reports by international (governmental and non-governmental) organizations on the health impact of Chernobyl are: WHO, *Health Effects of the Chernobyl Accident*; UNSCEAR, *Sources and Effects of Ionizing Radiation*; UNDP and UNICEF, *The Human Consequences*; The International Chernobyl Project, *Assessment of Radiological Consequences*; The Chernobyl Forum, *Chernobyl's Legacy*; Fairlie and Sumner, *The Other Report on Chernobyl*; Greenpeace, *The Chernobyl Catastrophe*; German Affiliate of International Physicians for the Prevention of Nuclear War (IPPNW) and Gesellschaft für Strahlenschutz, *Health Effects of Chernobyl*.
40. Bauer and Kalmbach and Kasperki, 'From Pripjat to Paris'; Brown, *Manual for Survival*.
41. The film *Fukushima and Chernobyl: Myth versus Reality* is a telling example. This film was commissioned by the London-based *World Nuclear Association*, until 2001 the *Uranium Institute*. It illustrates the tremendous importance of the debate on low-level radiation health effects for the pro-nuclear side after 2011: promoting radiophobia narratives on Chernobyl was a type of armour to deflect anti-nuclear voices, who, alarmed by Fukushima, called for a reassessment of the global nuclear enterprise. For an analysis of this film, see: Kalmbach, 'The Contested Truth', 271–9.
42. My use of the phrase 'politics of history' implies the discursive usage of historical events, persons and so forth as political arguments.
43. Articles exclusively published in scientific journals are thus not included in the sources considered here.

44. Thanks to the legal deposit ruling in both France and Britain, I could directly access material in the Bibliothèque nationale de France (BNF) in Paris and the British Library (BL) in London. Both libraries have extensive collections of grey literature, government publications and audio-visual material. Moreover, the BNF (site François Mitterrand) incorporates the Institut national de l'audiovisuel (INA), where I was able to research French TV-reports on Chernobyl. With regard to newspaper reporting, I researched the various databases at the BL, and Science Po Paris' press clippings. Fondation EDF, Chernobyl solidarity groups and individual activists kindly provided me with published grey literature not available in libraries.
45. I do not consider the media as actors. I prefer to study the actions of individual journalists and how actors' statements are reflected in media reporting. The media can be actors in public debates, particularly for agenda setting. But this aspect is less relevant as I focus on the events of 1986 and anniversaries.
46. Wendland, 'Rezension zu: Kalmbach, Karena'.
47. See for these perspectives the work of Anna Veronika Wendland, for instance: Wendland, 'Reaktorsicherheit als Zukunftskommunikation'.
48. See for instance: Onaga, 'Reconstructing the Linear No-Threshold Model in Japan'.
49. For an account of the 2011 transnational Chernobyl debate, see: Kalmbach, 'The Contested Truth', 267–88.
50. For important works on Britain's military nuclear history, see: Twigge and Scott, *Planning Armageddon*; Heuser, *Nuclear Mentalities*.
51. Gowing, *Independence and Deterrence*; id., *Britain and Atomic Energy*.
52. The most recent works on British nuclear history are: Laucht, *Elemental Germans*; Hogg and Laucht, 'British Nuclear Culture'. Ian Welsh's work on British anti-nuclear movements applies a social science perspective: Welsh, *Mobilising Modernity*; id., 'The NIMBY Syndrome'.
53. Concerning actors, I use the term *international* to refer to international governmental organizations (IGOs) and *transnational* for the activities of non-governmental organizations (NGOs) and civil society initiatives that transcend national borders.