

Elisabetta Bini and Igor Londero

INTRODUCTION

This book examines the history of Italy's nuclear policies during the Cold War, by placing the Italian case in an international and comparative framework. It highlights the importance the international context had in shaping the country's specific experience, and analyzes the ways in which international politics and economics, technological and scientific exchanges, as well as social and cultural movements, influenced Italian nuclear policies, both civilian and military. All the essays published in this volume assume that the history of nuclear energy should be written by adopting an international perspective. The spread of nuclear knowledge (scientific, civilian, as well as military), and the implementation of nuclear policies, have a specific international dimension that should be taken into consideration, since no nuclear program has ever had a distinctly national character, and every country pursuing a nuclear policy has been, in one way or another, deeply influenced by the international context.

Looking at the history of Italian nuclear programs through the lens of international and comparative history allows for a new understanding of the specificities – and in some ways uniqueness – of Italy's nuclear experience. The Italian case is defined by a series of distinctive traits that make its study particularly relevant. It was characterized by a strong tradition in applied nuclear physics, revolving around the so-called *via Panisperna* boys, who gathered around the charismatic figure of Enrico Fermi. While the group dispersed because of the racial laws introduced by the Fascist regime and, partly, because of the anti-Fascist activity of some of its members, the work carried out during the 1930s paved the way for post-World War II research in nuclear technology. It was immediately after the war that Italian scientists – including Edoardo Amaldi, the only member of the *via Panisperna* boys to have stayed in Italy – identified in applied scientific research a way to solve the country's secular social, political, economic and industrial problems, through the creation of a national committee for atomic energy.

During the 1950s, Italy was one of the first countries to express interest in developing civilian nuclear energy, taking advantage of the forms of assistance provided by the

United States through the Atoms for Peace program. In a context characterized by a lack of energy resources, politicians and industrialists alike embraced the idea that atomic power would offer the possibility of producing an unlimited, clean and efficient source of power. Through important figures such as Francesco Giordani – President of the Comitato Nazionale per l'Energia Nucleare (CNEN) – and Felice Ippolito – Secretary General of the Comitato Nazionale per le Ricerche Nucleari (CNRN, later renamed CNEN) –, Italy was at the vanguard of nuclear research and technology. The CNRN/CNEN directed all advanced research programs toward specific goals (like the building of the Frascati synchrotron and the first nuclear power plants), and advanced a specific vision of the role nuclear programs should have in promoting the country's modernization, through forms of state-led planning. It also served to develop an Italian scientific foreign policy, playing a leading role in establishing relations with the United States – the largest exporter of nuclear technology at the time – and participating in the building of a unified Europe through Euratom.

Despite the fact that in the mid-1960s Italy was one of the most advanced countries in terms of nuclear research, it was also one of the first nations to abandon nuclear power. Ippolito's indictment in the summer of 1963, and his subsequent imprisonment, were in many ways the result of a political decision about the modernization of Italy's economy, society and administration, which had deep consequences on the country's research policies and institutions, as well as on its long-term energy strategies. While much has been written about the so-called "Ippolito affair" and the decline of Italy's nuclear programs in the 1960s, we still know too little about how the Italian case differs from other European cases, and the ways in which Italian actors interacted with, and were influenced by, an international context characterized by debates about non-proliferation and by access to large quantities of cheap oil.

By placing the Italian case in a larger international and comparative framework, this volume draws on a growing literature about the history of nuclear policies during the twentieth century, which represents one of the most original fields of research in contemporary history. These studies use new methodological tools and incorporate a variety of approaches coming from different disciplines, such as the history of science, Science and Technology Studies, international relations, business history, literature and media studies, and the history of social movements, fields that often lie at the intersection of national, international and global history. With few important exceptions, the Italian case has remained on the margins of this scholarship, focusing on aspects of military power, or adopting a national perspective to the study of its subject matter. By using an interdisciplinary approach, this volume seeks to challenge existing barriers between the humanities and the hard sciences, thus contributing to the long-term debate about the "two cultures".

This book stems from a conference held in Trieste in November 2014, titled *Nuclear Italy. Storia internazionale del nucleare italiano* (Nuclear Italy. An International History of Italian Nuclear Policies), which drew together scholars from a range of different disciplines (history, physics, international relations, literature, and economics), all carrying out original research on the history of Italian nuclear policies. The conference was promoted and organized by Elettra Sincrotrone Trieste S.C.p.A. and the Humanities Department of the University of Trieste, alongside the Department of Political Sciences of the University of Roma Tre, and the Department of Documentary, Linguistic-Philological and Geographic Sciences of the University of Rome “La Sapienza”. It was based on an international call for papers, and saw the presence of discussants selected from among the most important scholars in the field.

The 2014 conference built upon a previous one, organized by Elettra Sincrotrone Trieste S.C.p.A. and by the Graduate School of Humanities (SDiSU) of the University of Trieste in 2012, titled *Il nucleare in Italia nel secondo dopoguerra – ricerca, cultura, politica* (Nuclear Energy in Italy after World War II – Research, Culture, Politics). The conference examined Italy’s nuclear experience by looking at the role played by Ippolito between the end of World War II and the mid-1960s. One of the results of the conference was the decision to create a research group working on the history of Italy’s nuclear policies from a variety of different perspectives and through the lens of international history, which led to the establishment of the Nuclear Italy Research Group (Nireg).¹

This volume is divided into four sections. The first section, “Civilian Uses of Nuclear Energy”, examines Italy’s use of nuclear energy for civilian purposes. The essays consider the country’s relations with the United States and highlight the ways in which American policies such as the Marshall Plan, the Atoms for Peace program, and US military and corporate involvement in Western Europe, influenced Italian projects and strategies. They highlight the relationship between research institutions, the business world and the state in what was a very specific and peculiar case of post-World War II modernization, across the Atlantic and beyond. They analyze the role Italy had in shaping European nuclear policies, through forms of cooperation between Italian scientists and Euratom. These essays open up new venues of research on the importance scientific research had in promoting European integration, through men like Ippolito, who represents the prototype of a European technocrat involved in building a unified Europe. Despite the fact that many of Euratom’s projects never saw the light, the agency gave life to a range of scientific programs that deserve to be studied, since they testify to the forms of international and European collaboration that characterized a whole era of nuclear research.

1 Nuclear Italy Research Group, <https://niregblog.wordpress.com>.

The second section, “Military Aspects of Nuclear Power”, examines the importance the military dimension of nuclear policies had in shaping Italy’s specific experience, particularly in the context of the signing of the Non-Proliferation Treaty (NPT) and the Euromissiles Crisis. By emphasizing the relationship between civilian and military uses of nuclear power, the essays in this section analyze the importance the nuclear arms race had in the creation of a “balance of terror”, which kept international politics in checkmate for more than half a century. From the US policy of secrecy, to President Eisenhower’s program Atoms for Peace, to the difficult compromises that led to the signing of the NPT, the question of nuclear arms dominated a whole era.

The third section, “Public Opinion and Anti-nuclear Movements”, analyzes the different cultural and political meanings intellectuals, scientists and the media assigned to nuclear energy in Italy, at a time when nuclear power symbolized both the promise of unlimited growth and the threat of global annihilation. The essays examine the forms of communication that were carried out in support of or against nuclear energy, and how they intersected with wider changes in Italian society, symbolized by the spread of mass consumption, the emergence of a transnational public opinion, and new forms of grassroots democracy. They investigate the ways in which different groups critiqued and opposed the use of nuclear energy for military, civilian and research purposes. Compared to other countries, where anti-nuclear movements emerged during the 1950s and 1960s, in Italy they were initially a rather elitist initiative – albeit an influential one. It was only in the second half of the 1970s, and increasingly during the Euromissiles Crisis and the 1987 referendum, that they established themselves as a significant political force.

The fourth section, “The Role of Scientists and Scientific Research”, examines the importance scientists and research institutes had in shaping Italy’s nuclear experience. The essays focus on the relationship between scientists, the state, firms and society, and the specific contribution Italian researchers gave to the development of nuclear technologies. They show the complexity that characterized post-war research in nuclear physics, and the role scientists had in debates about the political, economic and ethical implications of nuclear power since World War II. These essays shed new light, and open up new questions, on the relationship between scientific research and ethical issues, which was so central in the thinking of scientists such as Albert Einstein and Robert Oppenheimer, but also Amaldi, reflecting on their responsibility in the context of the Manhattan Project. While the nuclear era led scientists to be increasingly influenced by large-scale industries and the state, it also brought about a new definition of the role they should have in society. Especially among those who were traumatized by the destructive power of the technology they had helped develop, scientists advanced the idea that they should be involved in public debates and assert their position. Investigating these aspects means

highlighting the delicate relationship between intellectuals and researchers on the one hand, and society on the other, a topic which is particularly crucial today.

ACKNOWLEDGMENTS

The organization of the conference *Nuclear Italy. Storia internazionale del nucleare italiano* and the publication of this volume would not have been possible without the contribution of many institutions and individuals. Our greatest thanks goes to Carlo Rizzuto, former President of Elettra Sincrotrone Trieste S.C.p.A., who from the very beginning supported this project with enthusiasm, and encouraged us to think outside disciplinary boundaries. Without his constant input, this volume – and the conference and networking behind it – would not have been possible. We also wish to express our gratitude to Elisabetta Vezzosi for her generosity, and for believing that the work we as academics carry out in groups is far better than what we produce as single individuals.

We would like to thank Elettra Sincrotrone Trieste S.C.p.A. for providing generous funding for the conference and the volume, as well as the Humanities Department of the University of Trieste, the Department of Political Sciences of the University of Roma Tre, and the Department of Documentary, Linguistic-Philological and Geographic Sciences of the University of Rome “La Sapienza”, for their financial support. The administrative staff of Elettra Sincrotrone Trieste S.C.p.A. and of the Humanities Department of the University of Trieste gave us important assistance before, during and after the conference, and we would like to thank in particular Roberto Pugliese, Roberta Saccon, and Gloria Norio.

Our thanks goes also to our colleagues who, at different stages, supported our efforts, in particular Guido Abbattista, and the chairs and discussants who came from close and far away: Giovanni Battimelli, Alain Beltran, Matthew Evangelista, Gianrossano Gianini, Georg Meyr, Benoît Pelopidas, and Claudio Tuniz. This volume would not see the light without the work of the scientific committee that initially selected the papers presented at the conference. Heartfelt thanks to Giovanni Battimelli, Leopoldo Nuti, Giovanni Paoloni, Carlo Rizzuto, and Elisabetta Vezzosi. And many thanks to Terrence Chamberlain for revising the English language of the essays published here.

Last, but certainly not least, we wish to express our deep gratitude to Giulia Iannuzzi for her invaluable contribution in organizing the conference and editing this volume in a superb way.