Fascist Pigs
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Fascist Pigs

Technoscientific Organisms and the History of Fascism

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In 1935 Georges Canguilhem published a pamphlet titled Fascism and the Peasants, which he had written for the Vigilance Committee of Antifascist Intellectuals, a group formed by the Parisian intelligentsia in reaction to the fascist attempt of seizing political power in France one year earlier. That early work by one of the most distinguished figures in the venerable French tradition of historical epistemology warned against the fascist agrarian ideology represented in France by the Greenshirts, whose ideologue was Marcel Braibant. It made explicit that the Greenshirts’ back-to-the-land project—with its slogan “D’abord la terre!” (“The land first!”)—was in fact a very modern project that essentialized peasant culture and replaced the multiplicity of living things that thrived in the French countryside with normalized entities. Canguilhem denounced the Greenshirts as a fascist move to control peasants’ lives and subordinate them to a centralized state.

Michel Foucault, perhaps Canguilhem’s most influential commentator, noticed that it was no coincidence that several epistemologists were active antifascists and members of the French Resistance after Hitler’s invasion of the country in 1940. Jean Cavaillé (the philosopher who founded the resistance network Libération), shot by the Nazis in 1944, was later celebrated by his colleague and friend Canguilhem as a “philosopher-mathematician loaded with explosives.” Canguilhem himself joined Libération in 1943 and fought as a partisan in the mountains of Auvergne. The continuity between secluded theoretical scholarly work and armed resistance against fascism was clear to Foucault: epistemologists, through their questioning of modes of reasoning, had a privileged understanding of fascism as a totalitarian attempt to control every dimension of life, an extreme case of biopolitics. If Canguilhem dealt with rationality through concepts such as “the pathological” and “resistance,” he could not avoid being on the front line against political regimes that promised to totally eliminate the chance of error, which, according to his views, constituted the possibility of life.
Introduction

itself. The confrontation with fascism was thus central in establishing an epistemological tradition that questioned forms of thinking about and tinkering with life.

This book takes up that tradition to explore fascism as biopolitics. Building on Canguilhem’s and Foucault’s conviction that management and control of life were central to fascism, it follows an alternative track. It investigates the making and growing of animals and plants embodying fascism. It details how technoscientific organisms designed to feed the national community envisaged by fascists became important elements in the institutionalization and expansion of the regimes of Mussolini, Salazar, and Hitler. The point is not to replace humans with non-humans in explanations of historical change, but to extend the notion of biopolitics and suggest that we must seriously integrate the latter in history to be able to understand how social collectives came into being and how they evolved. Fascist collectives were not only formed through the interventions in human life identified by Foucault and his disciples—hygiene, reproduction, and race. They also included organisms that breeders of plants and animals produced through new practices of the sciences of heredity—life forms as important as human bodies in making fascism.

For such purposes Canguilhem’s pamphlet holds a few more precious insights. First, it deals simultaneously with the agricultural policies of the fascist regimes in Italy and Germany, emphasizing the continuities between those two regimes and the ideology of French Greenshirts, led by Henri Dorgères. Second, and perhaps more important, it includes in its discussion of fascism the new varieties of wheat that increased yields at the expense of milling properties. Canguilhem establishes a direct relation between large farmers’ interests in increasing productivity through new strains of wheat and the appearance of a generic fascist discourse promising the nation’s attachment to the land while ignoring the diverse concrete situations that constituted the peasant world. This book builds on Canguilhem’s attention to specific technoscientific organisms to explore the historical dynamics of fascism. In part I, wheat, potatoes, and pigs will guide us through the early stages of the institutionalization of fascism in Italy, Portugal, and Germany. In part II, sheep, cotton, coffee, and rubber will take us into the violent colonial expansion of the three regimes in Africa and in eastern Europe.

Hans-Jörg Rheinberger has recently revisited Canguilhem’s work and has disclosed far-reaching consequences of Canguilhem’s apparently limited considerations on the object of history of science. Canguilhem’s recognition that “there can be no history of truth that is exclusively a history of truth, nor a history of science that is exclusively a history of science”
demands, according to Rheinberger, a focus on the social and technological concerns from which the sciences arise. Canguilhem’s discussion of Claude Bernard’s experimental medicine is particularly illuminating in this respect in that it invokes “the demiurgic dream dreamed by all industrial societies in the mid-nineteenth century, the period when the sciences, thanks to the applications of them, became a social force.” The claim thus goes beyond accepting that one must know the social and economic contexts to understand the history of science. One should also recognize the creative power of the experimental sciences and their ability to blur the distinction between knowledge and creation: new things are brought into existence changing those contexts; they constitute a “social force” in themselves. That was what Canguilhem hinted at when connecting the production of new strains of wheat with the rise of fascism in the French countryside. But only in that early pamphlet did he specify the concrete ways in which scientific and technological things changed major political contexts.

This book recovers that early engagement by Canguilhem and aims at understanding how new strains of wheat and potatoes, new pig breeds, and artificially inseminated sheep contributed in significant ways to materialize fascist ideology. These organisms are taken as “technoscientific thick things” that, in contrast to the thin scientific objects isolated from society of traditional accounts, bond science, technology, and politics together in a continuum. This is not a study about what happened to scientists under fascism, but one that, by following the historical trajectories of technoscientific things, reveals how new forms of life intervened in the formation and the expansion of fascist regimes. It doesn’t take fascism as the historical context in which certain scientific undertakings have place, preferring instead to focus on the ways technoscientific organisms became constitutive of fascism.

Fascism as Alternative Modernity

In spite of the long and respectable pedigree of historical studies that have explored the relation between science and Nazism, to my knowledge there is no single work in history of science dealing with science and fascism more broadly. When the word ‘fascism’ shows up in narratives produced by historians of science, it refers to singular fascist regimes (Hitler’s, Mussolini’s, or Franco’s), always taken separately. This is surprising when we consider the large literature in European history that discusses fascism as a widespread phenomenon and as a historical concept in its own right.
“the major political doctrine of world-historical significance created during the twentieth century,” fascism is undoubtedly an essential part of European modern history. If every developed nation in the world with some degree of political democracy had some kind of fascist movement in the interwar years, the vast majority of European countries went a step further in their relation with fascism. Adding to the two canonical cases of Italy and Germany, where fascist movements seized power, we can’t avoid fascism when dealing with the political regimes of Dolfüss in Austria, Horthy in Hungary, Antonescu in Romania, Metaxas in Greece, Pétain in France, Franco in Spain, and Salazar in Portugal. There is, of course, no consensus in the historiography on the proper typology of all these different regimes. But independent of labeling them as fascist or not, historians agree that they all had significant fascist dimensions, forming what Roger Griffin describes as “para-fascism” and Michael Mann calls “hyphenated fascist regimes”: Metaxas’ “monarcho-fascism,” Dolfüss’ “clerico-fascism,” and so on. Not only does the inclusion of the Portuguese case in this book present a national context normally absent from the history of science and the history of technology; in addition, it has the advantage of placing the argument in this wider context of Europe’s experience with fascism. The Portuguese fascist regime is in many ways exemplary of dynamics common to those hyphenated or para-fascist cases. Also, the longevity of the Portuguese dictatorship (1926–1974) and the imperial dimensions of Salazar’s New State contribute decisively to make it a historical object to consider side by side with Nazi Germany and Fascist Italy. Historians of science and technology commonly argue for more attention to their disciplines from those interested in general history, but historians of science and technology have been largely absent from the significant debates concerning the history of fascism. This book seeks to overcome that limitation by considering the connected experiences with fascism of three different countries.

In thinking about science and fascism it is worth considering how, in the last few decades, the historiographical status of fascism has changed from a temporal hiatus in which irrationality reigned into an integral part of the human experience with modernity. Roger Griffin is the author who has most consistently argued for the need to perceive fascism as a modernist political ideology promising to counter the unsettling effects of modernization in which, as Marx put it, “all that is solid melts into the air.” Taking fascist talk seriously, as Griffin does, makes it possible to identify a coherent political project of national rebirth promising a sense of transcendence and purpose to societies allegedly under the modern menaces of individualism, social anomy, alienation, and instability. Breaking with the past,
manufacturing new historical traditions, and imagining alternative futures were not gestures limited to the modernist artistic avant-garde. Fascists also deserve to be counted among the modernists due to their radical and revolutionary commitment to national renewal, aimed at countervailing the acute sense of crisis of interwar Europe. Whereas Mussolini insisted that “all the political experiments of the contemporary world are anti-Liberal,” Salazar predicted that, having considered “the great laboratory of the world today” (that is, in 1934), he was “convinced that within twenty years, if there is not some retrograde movement in political evolution, there will be no legislative assemblies left in Europe.”

In this view of fascism as modernism, fascism is much more than a radicalized version of old-fashioned conservatism; it is an all-encompassing modernist social experiment with the purpose of inventing a new national community. Fascists were not reactionaries struggling to freeze history; they were radical experimenters in political conformations. The past certainly played a role, but it was a new, streamlined past invented by the propagandists of the different regimes. Roman legionaries, Teutonic knights, and Portuguese sailors of the Age of Discovery were brought to life in exhibitions, radio broadcasts, and films. But no one thought of actually adopting their lifestyles; they served as modern myths binding the collective together. Mass cultural rituals, eugenic measures, urban planning, welfare policies, censorship, transportation networks, and military power were all elements of the modernist experimental gesture of forming a new national community, an alternative modernity to Bolshevism and liberal democracy.

It is hard to avoid discomfort when applying the notion of “alternative modernity” to fascism—all the more so when considering that many of those who use that term do it with emancipatory intentions, highlighting the multiple forms modernity may assume in the global South, beyond the Western versions of modernization theory. Nevertheless, as S. N. Eisenstadt has convincingly shown when discussing the modern features of current religious fundamentalism, there is no necessary goodness attached to “alternative modernity” (he actually prefers “multiple modernities”). There is also no goodness in a fascist alternative modernity and its totalistic attempt of transforming man and society—an attempt in which the authority of the dictator replaced political democracy and those who because of race or politics were not considered to belong to the national community were deprived of citizenship and eventually eliminated.

But if we take this notion of fascism as alternative modernity as valid, as I think we should, the role of historians of science and technology in producing a better understanding of the phenomenon becomes clearer.
Their engagement with the “detail, ambiguity, and variety” of practices and objects of scientists and engineers may contribute decisively to overcoming the limits of accounts of modernity based on naïve notions of how science and technology interact with society.30 In fact, Michael Thad Allen and Thomas Zeller have already demonstrated the advantages of looking in depth at technology when describing the particular version of modernity associated with Nazis. Whereas Allen, focusing on labor management techniques, replaced Hannah Arendt’s figure of the perpetrator of genocide as a personification of the banality of evil with the SS member as a modernist bureaucrat driven by his enthusiasm for efficiency and racial utopian visions, Zeller detailed the contested process of making Hitler’s Autobahnen fit the larger project of shaping a “Volk community that claimed to equalize social differences, smooth out distinctions of class and estate, and be racially homogeneous.”31 In both cases, the old paradox of reactionary modernism that suggested an unsolved problematic contradiction at the heart of Nazi ideology between romanticism and technical rationality gave way to an image of technologies embodying fascist alternative modernity.32 More recently, Lino Camprubí has made an important addition to this literature by looking at the co-evolution of engineering and the Francoist regime and showing how typical fascist notions of Spanish national redemption were embodied in technological undertakings.33 Moreover, such approaches resonate nicely with the important trend in history of science of overcoming the traditional opposition between romanticism and scientific knowledge, a trend that emphasizes how machines were historically able to materialize romantic social utopias, or (to stick to the vocabulary) how scientific instruments and technology embodied romantic alternative modernity.34

In the same vein, this book delves into the alternative fascist world that science produced, not the alternative science that fascism produced.

Food and the Fascist Organic Nation

Feeding the organic nation played a decisive role in fascist alternative modernity. For fascists, the nation deserved all sacrifices and made allegiances to class or ideology irrelevant.35 Social and cultural historians have detailed how imagined national communities came into being in the nineteenth century through the invention of a national culture and its dissemination in classrooms, in the press, in world exhibitions, or in army barracks.36 Building on the different local nationalistic ideologies thus formed, fascists all across Europe developed a radicalized integral form of nationalism by adhering to a biological conception of the nation as organ,
body, or race. Liberal regimes were accused of failing in their duties toward the nation and of having led it to the verge of extinction in World War I. Once the conflict ended, veterans were quick to call for a constant mobilization to defend this menaced national body, eliminating the traditional distinctions between reserve and action and between peace and war. And if not every fascist regime put as much emphasis as the Nazis did on the dangerous intrusion of inferior races, none ignored the alleged menace of food scarcity. Hunger, experienced throughout Europe during World War I, made plausible depictions of the nation through the figure of the endangered body. As Nazi propaganda emphatically put it, Germans were “the children of the potato,” having had their existence menaced in World War I as much by the epidemics of late blight that afflicted the potato crop as by enemy weapons.

Though questions of race have traditionally contributed to establishing differences between fascist regimes, with Germany as an outlier, food points instead at the many commonalities of fascist experiences. In other words, in fascist studies food is a lumper whereas race is a splitter. This is important for the present book, since the narrative not only makes comparisons between the three countries but also insists on the importance of following concrete trans-national historical dynamics connecting the three fascist regimes under study.

Indeed, as is detailed in part I, every fascist regime of the interwar period became obsessed with projects for making the national soil feed the national body. Food was central to translating the fascist ideology of the organic nation into concrete policies. National independence from the vagaries of international markets was to be achieved through campaigns for food production such as the Battaglia del Grano (Battle of Wheat), the first mass mobilization of fascist Italy launched in 1925, which was soon reproduced in Portugal (1929) and later in Germany (1934). The notion of total mobilization, which in the early 1930s Ernst Jünger transferred from the trenches of World War I to the whole of society, had its most obvious manifestation in these inaugural fascist campaigns. Peasants, chemical industries, machine builders, agricultural scientists, radio broadcasters, and fascist intellectuals were all mobilized to protect the national community. The Portuguese Wheat Campaign’s revealingly martial slogan proclaimed “Our land’s bread is the border that best protect us!” This book argues that it hasn’t been sufficiently appreciated that one of the first steps in the fascist experiment of forming an organic community was to put in place campaigns for the production of food and raw materials to guarantee the survival and growth of the national body.
It may be argued that thinking about the biological nation through food rather than through race projects a more acceptable version of fascism, ignoring its more violent aspects. After all, food-supply issues, in contrast to racial degeneration, constituted real problems challenging all European societies in the interwar years. But food was also crucially linked to ambitions of territorial expansion, with colonization taken as the only long-term solution for survival and growth of the national body in a world dominated by imperial blocs. Counter-intuitively, the fascist nationalistic obsession with self-reliance, first expressed in internal production campaigns, also naturalized the need to grab land. In the hostile world of the fascist credo, only imperial nations could be considered truly independent. This expansionist drive constitutes the framing of part II of the book.

Fascism was responsible for the last large colonial land grab by European nations: while Italy invaded Ethiopia and strengthened its presence in Libya, Germany transformed eastern Europe into a Continental version of *Heart of Darkness*.43 Portugal had already secured its empire in the nineteenth-century scramble for Africa, but the new fascist regime would greatly intensify its colonial presence. Focusing on food and land will thus also lead us into the violent features of fascism that justify much of the enduring scholarly and popular interest in the phenomenon. Hitler’s visions of Germany’s expansion into the east were, from the beginning, articulated in terms of guaranteeing new soil for “pure stock” German peasants, making agriculture a central dimension of the dynamics that would lead to the Holocaust.44 Italy and Portugal’s imperial experiences didn’t have the same combination of racial policy and territorial expansion as Nazi Germany’s. Race certainly played a role, but in neither case can one identify an explicit decision to eliminate a “race” comparable to that made at the infamous Wannsee Conference.45 But, similarly to the Nazi example, it is also in the colonies that one stumbles into both regimes darkest stories. As we will see in part II, agriculture is key to understand the genocides perpetrated in Africa under Mussolini and Salazar dictatorships.

There are, to be sure, a number of volumes dedicated to the agricultural policies of the different fascist regimes.46 But agriculture’s lower cultural status, associated with misperception of its low-tech nature, has apparently inhibited the more ambitious historians of generic fascism from including it in their discussions.47 Who wants to deal with pigs and potatoes when one can explore film, sports, and architecture? Historians of agriculture haven’t helped. Gustavo Corni and Horst Gies’s still-canonical study of the food policies of the Third Reich, for example, teaches us more about the many flaws of Nazi agricultural bureaucracy and its repeated broken...
promises than about the importance of food for the institutionalization and dynamics of the regime. In common with many other authors, Corni and Gies emphasize the apparent contradiction between fascist praise of traditional peasant culture and modern demands for productivity, ignoring that what was at stake was a single modernist project of inventing a new organic national community. This book intends to overcome the common perception among fascist studies that talk of soil and peasantry is atavistic and in conflict with more modern sensibilities. I suggest that the “ideology of the land” already present in the very first formulations of the fascist credo, and famously summarized by the Nazi dictum “Blut und Boden” (“Blood and soil”) and the slogan “Bisogna ruralizzare l’Italia” (“Italy must be ruralized”), was as modernist as the aviation craze of fascist Italy or the smooth lines of the German Autobahn.

Model Organisms, Industrialized Organisms, and Fascism

The bulk of my narrative is concerned with examining the modernist nature of the fascist “back to the land” movement by following the new organisms that promised to root Italians, Portuguese, and Germans in their respective national soils and to sustain them in their imperial possessions. It emphasizes the fact that such organisms were technoscientific organisms—modern products of scientific breeding operations. The Ardito strain of wheat with which Mussolini fought his Battaglia del Grano was a new variety developed by Italian geneticists that promised Italy self-sufficiency in grain. The sheep that bolstered Heinrich Himmler’s dreams of thriving German settler communities in eastern Europe’s steppes were standardized animals coming from the Institute of Animal Breeding of the University of Halle. And the same goes for the pigs, potatoes, cotton, and coffee gathered in the text.

We already know how plant breeding thrived as scientific field in the context of the Nazi political economy and how it earned generous support from Hitler’s regime. But the more significant studies on this topic either dismiss the relation between “Blut und Boden” ideology and breeders’ activities or consider modernization efforts in agriculture only as a matter of preparedness for war. Taking agriculture as seriously as fascist ideologues—Nazis included—actually did, and placing it at the center of their modernist experiment of inventing a national community instead of just seeing it as a proxy for other projects, make the importance of breeders’ new organisms more obvious. Technoscientific organisms were to embody the fascist response to the major problem of how European societies should live in the new global economy of food. When fascists came to power, as
we shall see, breeders were happy to tailor their creations to serve fascist ideology. But before that, breeders’ organisms were already making fascist radical visions of the national body thriving on the national soil into plausible policies. Breeders’ animals and plants were not just tools of fascism; they were major elements in imagining a fascist alternative modernity.

Since the 1990s, historians of science have been exploring standardized life forms in order to understand processes of production of biological knowledge. Widespread circulation of standardized model organisms has been significantly identified with the expansion of communities of researchers built around them. Robert Kohler’s fruit flies, Karen Rader’s mice, and Angela Creager’s Tobacco Mosaic Virus are now common elements in historians’ accounts of the development of the biological sciences.54 Hans-Jörg Rheinberger, with his “epistemology of the concrete,” has been exceptionally productive in revealing how work on model organisms has led to new epistemic things.55 These model organisms constitute “future generating machines” whose manipulation, Rheinberger writes, “can generate insights into the constitution, functioning, development, or evolution of an entire class of organisms.”56 Rheinberger’s work points not only at the relevance of such organisms as crucial objects for historians of the life sciences but also at a way of writing history of science as organism-centered narratives. The structure of the present book, with its chapters organized around different domesticated plants and animals, owes much to Rheinberger’s collection of model organisms.57

As the expanding literature on the “cultural history of heredity” has eloquently demonstrated, focusing on organisms doesn’t imply a narrowing of historians’ perspectives, having led instead to an appreciation of the “economic and social preconditions for the coming into being of genetics, such as the beginning of agro-industrial mass production of organic raw materials and foodstuffs, as well as of drugs and vaccines, toward the end of the nineteenth century.”58 This body of scholarship suggests that the history of model organisms and that of industrialized organisms go hand in hand.59 To illustrate this, it suffices to point out that two basic concepts of the new science of genetics at the beginning of the twentieth century, the “pure line” and the “clone,” were direct products of practical breeders’ practices.60 The “pure line” will have a prominent presence throughout the present book because of its role in forming the modernist belief in the unlimited human ability to tinker with life.

By the late nineteenth century, a growing number of breeders were rambling around farmers’ fields, identifying interesting plants, and reproducing them through self-fertilization, carefully documenting the characteristics of
the progeny.⁶¹ Through this so-called pedigree selection, breeders produced what Wilhelm Johannsen would famously call “pure lines”—alleged homozygotic stable varieties selected for some important feature such as pest resistance, early ripening, or milling properties.⁶² They then combined different properties by crossing different pure lines to obtain the hybrids that made them famous in the seed market. Whereas chemists demonstrated their demiurgic power by creatively combining elements to produce new compounds, breeders promised endless innovation in the production of living things by hybridizing pure lines.⁶³

A significant point that comes out of the history of breeders’ practices is the problematic relation they entail in different contexts for the historical actors in question.⁶⁴ The gives and take (intermediated by market dynamics) between scientific experts equipped with the modern tools of genetics and practical breeders basing their decisions in allegedly traditional modes of classification has been particular prominent in the literature.⁶⁵ All the organisms I deal with in this book were domesticated animals and plants, and I will follow the processes through which they became scientific objects, mainly through the extended use of recording practices by academic breeders, and how these processes contributed to their industrialization. In the case of Karakul sheep, the blurring of the scientific and the technical was more evident. As sheep were being standardized for the production of fur coats, scientists also used them to illuminate more general properties in development genetics: they were simultaneously industrialized organisms and model organisms. The notion of technoscientific organisms tries to capture all these nuances: technologies of organism production that were changed through scientific practices, or science-based technologies; scientific practices that built on non-academic breeding techniques, or technology-based sciences; and plants and animals that were both industrialized and model organisms, or technoscience.

This book draws heavily on previous histories of the breeding of plants and animals in taking seriously the “complex interplay of social and biological considerations in organismal design.”⁶⁶ But, again, it insists that it is not enough to talk of a generic process of modernizing life production, because to do so misses the particular forms modernity assumed in different historical contexts. Pure lines and hybridization demanded recording practices first associated with seed companies and later with state-funded agriculture experiment stations. The need for a meticulous track of progeny, central to the new science of heredity, has thus been rightly associated with such general trends as bureaucratization, standardization, industrialization, and commercialization—in one word, modernization.⁶⁷ Less noticed
are the alternative modernities that standardized forms of life have helped constitute. To put it bluntly, it would be misleading to treat as residual effects the contributions of breeders’ creatures to capitalist relations of American liberal democracy, to sustaining communist forms of production in Soviet Russia, or, as this book argues, to informing fascist sociability across Europe. If above I called attention to the somewhat naive accounts of science and technology in general historians’ discussions of modernity, here I am pointing at the need to complicate the notions of modernity used by historians of science and technology. A persistent notion that permeates most narratives is that the rise of Mendelian genetics in the early twentieth century went hand in hand with the industrialization and commodification of organisms, leading to corporate or state control of life—something that alienated people in general and peasants in particular. In such grand narratives, concrete political regimes are minor details of a more general process of modernization. This reminder is particularly important in a text dealing with fascism. Adorno and Horkheimer had famously equated capitalism and fascism through their analysis of instrumental reason in *Dialectic of Enlightenment*. In California the two exiled philosophers from Hitler’s regime not only denounced the totalitarian dimensions of the Enlightenment tradition, scandalously perceiving in the French revolution a precursor to Nazism; they also urged intellectuals to uncover how fascism was present at the heart of Western democracies, including the United States. Since then, scholars inspired by critical theory have been justifiably eager to denounce the dangers associated with biopolitics in democratic societies. But it is not because both fascist and liberal democratic regimes undertook biopolitics that they became indistinguishable. It is not because both standardized life that they became identical. The thesis I put forth in this book is actually the opposite: that the increasing ability to tinker with plant and animal life—my extended version of biopolitics—enabled the materialization of different political projects, alternative modernities, good and bad, fascism being clearly among the bad ones.

Differences are erased in ahistorical analyses limited to signaling the occurrence of biopolitics. One has to engage with the actual history of technoscientific organisms in order to understand the different nature of the newly formed social collectives. As a case in point, as this book details, animal performance records developed by academic breeders were being used in the 1930s in New Deal America and in Nazi Germany to make decisions about pig breeding, but while these practices led to leaner animals in the United States, they led to fatter ones in Germany. Leaner American hogs increased the market value of farmers’ produce through their higher
protein content, thus avoiding the growing competition with cheap fats from vegetable origin. American standards measured the value of animals in a capitalist society, saving farmers from the Depression. Fatter German animals were to contribute to the Nazi autarky effort by reducing the need to import vegetable oils and by producing fat from national sources. German standards measured the contribution of animals to the national community. And pigs were not only expected to cover the German national fat deficit; they also had to be fed on potatoes and beets from the national soil. They had to be bodenständig (rooted in the soil)—a major concept guiding animal breeders in the Nazi regime, “Blood and Soil” ideologues, and Martin Heidegger, the philosopher who infamously asserted that rootedness in the soil distinguished the German Volk from uprooted Jewry.74 In the years after World War I, scientists’ new standards allowed fascist ideologues to imagine a national community thriving on the productivity of the national soil and settling new territories—a bodenständig community. After seizing power in 1933, the Nazis would put in place a mammoth state structure—the Reichsnährstand—to see to it that only animals and plants complying with bodenständig standards were to be reproduced. Pigs not contributing to the feeding of the national body through the national soil were to be eliminated, as in fact progressively happened in the Nazi years. Only fat bodenständig pigs were fascist pigs, and they were the only ones that deserved to be part of the new fascist collective.

Fascist Ontology and the Structure of the Book

This book is more concerned with the historical importance of organisms for fascist regimes than with the alleged specific characteristics of doing science under fascism. Fascism is not taken as a pre-given context in which some scientists operated, but as a historical context to which scientists’ practices and objects contributed; the argument is less about fascist epistemology than about fascist ontology.

Such a formulation is a direct reference to the alleged recent ontological turn in Science and Technology Studies (STS) and the increased interest in studying the being of entities (ontology) at the expense of inquiring about modes of knowing entities (epistemology).75 STS scholars, building on their sensitivity toward the multiple ways that science and technology bring new things into being, seem particularly well equipped to follow the entanglements between humans and nonhumans producing new social collectives. The literature is now full of boundary objects, assemblages, and biosocialities, all signaling such entanglements and the variable ontologies,
multiple natures, or multiverse thus formed. In contrast to older studies that showed how pre-given social contexts shaped scientific objects, we have a myriad of ontological investigations focused on world-making practices. The above-mentioned remarks by Canguilhem on the continuity between knowing and creation, already suggest that the strict separation between epistemology and ontology is hard to maintain; an overlapping that characterizes Canguilhem’s work and that one finds in many of the works forming the canon in history of science. The very same notion of technoscience, pointing at knowledge production more as a mode of intervention than as revelation or discovery, leads to a conflation of epistemology and ontology.

The simple point here is to take the arguments about the generative power of science and technology and apply it to the formation of fascist collectives, counting pigs and sheep among their members. I parallel the modernist design of a fascist organic collective with the world-making processes one lately finds described in STS literature. Mass mobilizations, new state structures, organic communities, and imperial expansionism—important parts of the fascist world—were imagined and enacted through the breeders’ new organisms: wheat, potatoes, pigs, sheep, coffee, rubber, and cotton. The study of the making and growing of such organisms can thus been described as a study in fascist ontology.

Part I of the book follows a traditional division by country: Italy, Portugal, and Germany. The order corresponds loosely to the chronological succession of the seizures of power by Mussolini, Salazar, and Hitler. Chapters 1–4 describe the intertwining of geneticists’ work with efforts to institutionalize the new regimes by rooting national communities in the countries’ soils. Chapters 1 and 2 highlight the role of new strains of wheat in the Battle of Wheat in Italy and the Wheat Campaign in Portugal, the first mass mobilizations in both regimes. By following the trajectory of the Ardito wheat, the geneticist Nazareno Strampelli’s most famous creation, it is possible not only to reveal how the fascist state reached different parts of Italy but also to reveal how Mussolini’s first campaign traveled to Portugal. When examining the Portuguese case, the narrative explores how new standardized forms of wheat contributed to the development of all-embracing corporatist state agencies, a critical subject in the new fascist social order: corporatism promised a society built on organic units and “economic solidarities” in contrast to the alleged artificiality of liberal ideology based on individuals as well as to the Bolshevik obsession with social classes.

Corporatism also figures in chapters 3 and 4, which deal with the German Battle of Production and the activities of the Reichsnährstand, the
institutional form of the ideology of Blut und Boden and the organization responsible for organizing the peasant world with a policy declaration on every issue related to food production. The technoscientific organisms structuring the narrative are potatoes in chapter 3 and pigs in chapter 4. The research dynamics at the Imperial Biological Institute (Biologische Reichsanstalt für Land- und Forstwirtschaft, abbreviated BRA) coping with the multiple pests afflicting German potato fields (wart, Colorado beetle, late blight, viruses) is put in relation with the growing infrastructure of the Reichsnährstand in an exemplary case of co-production of science and the state: each new experimental system at the BRA corresponded to an expansion of the power and reach of the Reichsnährstand. As for pigs, the subject of chapter 4, the development by academic animal breeders of performance records allows us to follow their transformation into organisms embodying fascism through standards measuring their Bodenständigkeit (rootedness in the soil)—a major concept in Nazi ideology.

Part II of the book deals with the expansionist ambitions of the three regimes, placing Germany’s brutal invasion of eastern Europe in a continuum with European colonial history. Chapter 5 considers coffee, rubber, and cotton, three typical elements of colonial plantation stories, and delves into Italian occupation of Ethiopia, German imperial rule in eastern Europe, and Portuguese colonialism in northern Mozambique. The plantation schemes, which had plant breeders’ artifacts as their material basis, made massive use of forced labor to serve the imperial economy. Without ignoring the different levels of violence unleashed by the three fascisms, the text suggests that we can gain significant insight into the history of fascism by considering their empires together. I take seriously Heinrich Himmler’s intention of making Auschwitz the Agriculture Experiment Station for the colonization of the east, and I compare the work done there on a rubber substitute with the work done at the Portuguese Cotton Research Center in Mozambique and the work done at Italian coffee experiment stations in Ethiopia.

Chapter 6 is the most original in terms of methodology, for it takes a single technoscientific organism—Karakul sheep—and follows that organism’s role in the settlement of the frontier for the three fascist empires. As we shall see, the Karakul sheep’s ability to thrive under harsh environmental conditions and its high value in the fur market made it a perfect companion species for white settler’s imperial expansion. The Animal Breeding Institute at the University of Halle is dealt with as a center of circulation, establishing standards and producing the rams to be used not only in white settlers farms in German possessions in eastern Europe but also in Italian
settlement schemes in Libya and Ethiopia, and in Portuguese colonization of Southwestern Angola. The various local Karakul sheep experiment stations located in frontier spaces are treated as experiments in colonial sociability, revealing the connections between sheep breeding and the genocides perpetrated by the three regimes.

It is, of course, possible to produce other fascist ontologies. Here is another one: horses, mice, dogs, birds, reindeer, and flies. This was precisely the ontology devised by Curzio Malaparte in *Kaputt* (1944) to describe the hunger, slaughter, and devastation that occurred across eastern Europe in World War II.\(^8^1\) The contradictory and controversial novelist, an early enthusiast of the fascist movement who took part in Mussolini’s March on Rome in 1922 and who after falling from grace with the Duce was sent into internal exile from 1933 to 1938, found in nonhuman animals a literary way to deal with the apocalyptic reality unleashed by Nazi imperial expansion. Animals weaved together Jewish ghettos, mass executions, battle scenes, Nazi leaders’ lavish courts, and bombed cities in a text that blended journalism, history, and fiction. For his many readers, Malaparte’s cynical style and fantastic compositions—the white marble sheet of the iced Lake Ladoga in northwestern Russia, from which emerged hundreds of dead horses’ heads; the “anti-armored-car” dogs that terrified German Panzer divisions in the Ukrainian steppe; the Naples flies thriving on heat and corpses multiplied by a never-ending war—captured the scandal of the Third Reich more accurately than the works of conventional writers did. And it was through animals (mice) that Malaparte produced one of the first accounts of the systematic character of Nazi persecution of Jews across Europe.\(^8^2\)

Mimicking Malaparte’s gesture, I have opted to bring into the narrative organisms with the power to exemplify different dimensions of fascism. The choice of technoscientific animals and plants was determined by their historical significance in constituting a fascist alternative modernity, by their ability to embody fascism. They form a bestiary combining historians of science and technology and STS scholars’ organism-centered narratives with political and cultural historians’ more general concerns with the historical nature of fascism.