

# Experimentación humana como estrategia biopolítica: una perspectiva foucaultiana

HUMAN EXPERIMENTATION AS BIOPOLITICAL STRATEGY: A  
FOUCAULDIAN PERSPECTIVE

Fernando Hellmann<sup>1</sup>

UNESCO Chair in Bioethics and Public Health.

Federal University of Santa Catarina, Florianópolis, Brazil

[fernando.hellmann@ufsc.br](mailto:fernando.hellmann@ufsc.br)

**RESUMEN:** Este artículo analiza la experimentación humana a través del concepto de biopolítica de Michel Foucault, mostrando cómo la investigación biomédica funciona como una técnica de gobierno de la población. Se destaca el papel ambivalente de las normas éticas, que pueden operar tanto como formas de resistencia como en calidad de aparatos regulatorios que legitiman la desigualdad. A partir de las nociones foucaultianas de biopoder, racismo de Estado y dispositivo de seguridad, se argumenta que la experimentación suele dirigirse a poblaciones vulnerables y que las normas éticas, lejos de ser neutrales, pueden actuar como instrumentos de control alineados con intereses estatales y de mercado.

<sup>1</sup> <https://orcid.org/0000-0002-4692-0545>

PALABRAS CLAVE: Ética; Biopolítica; Ética de la investigación; Experimentación humana; Ética de la investigación clínica.

ABSTRACT: This article analyzes human experimentation through Michel Foucault's concept of biopolitics, showing how biomedical research functions as a technique of population governance. It highlights the ambivalent role of ethical norms, which can serve both as resistance and as a regulatory apparatus that legitimizes inequality. Drawing on Foucault's notions of biopower, state racism, and the security apparatus, it argues that experimentation often targets vulnerable populations and that ethical norms, far from neutral, may operate as instruments of control aligned with state and market interests.

KEYWORDS: Ethics; Biopolitics; Research ethics; Human experimentation; Clinical research ethics.

Biopolitics, a concept central to Michel Foucault's work (2005, 2008a, 2008b), designates the ways in which political power acts directly upon life—classifying, regulating, and optimizing bodies and populations through medical, scientific, and administrative interventions. Far from being a neutral or merely technical endeavor, the governance of life is inseparable from historical inequalities, institutional violence, and shifting notions of health, risk, and security. Foucault's analysis of the transition from sovereign power — “to make die and let live”—to biopower—“to make live and let die”—remains a cornerstone for understanding how life itself became a political object.

Building on this foundation, several contemporary thinkers have expanded, problematized, and reoriented the concept. Giorgio Agamben (2004, 2005) underscores the negative dimension of biopolitics, showing how sovereign power can reduce individuals to *bare life* within states of exception, stripping them of political and legal protections. Roberto Esposito (2008, 2013) offers a counterpoint with his theory of affirmative biopolitics, centered on the dialectic

of immunity and community, which reveals how mechanisms of protection may simultaneously safeguard and undermine collective life. Nikolas Rose (2007), meanwhile, highlights the productive and neoliberal articulations of biopolitics, examining how biomedical technologies, processes of subjectivation, and global health economies shape both individual subjectivities and population management. Together, these perspectives illuminate human experimentation in multiple dimensions: Foucault situates it within the apparatus<sup>2</sup> of life management, Agamben warns of its capacity to render subjects disposable, Esposito reveals the paradox of protective sacrifice, and Rose situates experimentation within global biomedical markets and neoliberal rationalities.

Within this conceptual framework, human experimentation emerges as a paradigmatic site of biopolitical governance. From early eugenic programs to contemporary genetic editing technologies and pandemic control policies, experimentation reveals how life is simultaneously an object of scientific inquiry and political regulation. The COVID-19 pandemic, for instance, highlighted how emergency measures—justified in the name of collective safety—produced social fatigue, intensified surveillance, and exacerbated inequality (Gäckle, 2023). Similarly, research in gene editing, embryo manipulation, and behavioral neuroscience raises pressing concerns about autonomy, informed consent, and the ethical limits of intervention (Chen & Luo, 2024; Zimmer, 2025).

Foucault's work has been widely mobilized in bioethics (Ashcroft, 2003; Donda, 2014; Finkler et al., 2010; Giraldo & Zuluaga, 2013; Guta et al., 2012; Lysaught, 2009; Tremain, 2008), particularly to problematize how medical and legal knowledge function as apparatus

<sup>2</sup> Foucault uses the term *dispositif*—here translated as “apparatus”—to designate a heterogeneous and interconnected ensemble of elements, including discourses, institutions, laws, scientific knowledge, administrative practices, and moral or philosophical propositions. It encompasses both what is explicitly articulated and what remains implicit. What characterizes an *apparatus* is precisely the network of relations established among these diverse components (Foucault, 1980).

of power. Yet, relatively few studies have directly applied his concept of biopolitics to human experimentation (Caponi, 2004; Candiotto & Salomé D'Espíndula, 2012). Doing so enables a critical perspective that moves beyond normative frameworks, revealing how science, while promising protection and progress, simultaneously produces exclusion, hierarchization, and exposure to death.

Although bioethics has traditionally positioned itself as a safeguard against the misuse of medical power, it too is entangled in biopolitical dynamics. As Arán and Peixoto Júnior (2007) and Tremain (2008) observe, bioethics can function either as a space of resistance or as an extension of the very apparatuses it seeks to regulate—especially when aligned with neoliberal discourses of efficiency, innovation, and individual responsibility.

This article builds on these debates by offering a Foucauldian analysis of human experimentation, while also engaging with Agamben's, Esposito's, and Rose's perspectives, to demonstrate how experimentation operates not only as a scientific or medical practice but also as a political technology for managing populations, legitimizing inequalities, and producing regimes of truth.

To this end, the article is structured as follows. First, it explores the conceptual intersections between bioethics and biopolitics, emphasizing the ambivalent role of ethical discourse in legitimizing or contesting scientific practices. Second, it outlines Foucault's framework of population biopolitics, focusing on his concepts of state racism and the security apparatus as mechanisms of exclusion and regulation. Third, it examines the role of medicine and biomedical knowledge as instruments of biopower, analyzing how research involving human beings has historically reproduced structural inequities under the guise of progress. Finally, it considers how normative ethics itself can function as a apparatus—a mechanism of governance that simultaneously protects and disciplines experimental populations.

By reframing human experimentation through this expanded biopolitical lens, the article advances a critical and historically

grounded understanding of contemporary biomedical practices—one that acknowledges the ethical and political tensions at the core of governing life in the 21st century.

## Biopower and the management of life: historical and contemporary strategies

To understand Foucault's concept of biopolitics (Foucault, 2005, 2008b, 2008a), it is first necessary to highlight the transformations in power structures that occurred during the transition from the Absolutist State to the Modern State. The Absolutist State—whose main characteristic, at least in Europe, was the centralization of royal power—was reshaped by the rise of the bourgeoisie in the 17th century.

Across much of the Western world, the emergence of a distinction between the State and civil society became a defining feature of Modern States, particularly liberal ones. Liberal States dismantled the hierarchical orders inherent to absolute monarchies; they broke away from privileges based on blood ties and established a new form of political authority.

As Foucault notes, “the old mechanics of sovereign power escaped many things, both from below and above, at the level of detail and at the level of the mass” (Foucault, 2005, p. 298). In modern societies, a new model of collective management emerged—one that occupied the void left by sovereign (especially royal) power, which had proven ineffective in organizing society during the 19th century.

At the level of the masses, a need emerged for the maintenance and control of risks and diseases inherent to the intensified coexistence within large urban centers and agglomerations. This form of management was carried out through a set of mechanisms that came to constitute the biopolitics of populations.

At the micro level, the State and its apparatuses—such as schools, prisons, orphanages, factories, and other institutions—began to invest

in individuals, giving rise to what Foucault called the anatomo-politics of the body. This strategy aimed to produce productive and obedient bodies through disciplinary techniques.

Foucault (2005) identified a fundamental shift in the exercise of power: from the sovereign power centered on the figure of the monarch to the modern form of State power, which no longer requires a central figure to function. Under sovereignty, the king held the power over death—defined as the authority to “make die” and “let live.” The modern State, by contrast, exercises *biopower*—a power over life—which functions through the ability to “make live” and “let die.”

Through biopower, individuals who conform to societal norms are supported and invested in—they are “made to live.” Conversely, those deemed “abnormal” are either neglected and “left to die” through systemic disinvestment or, in more extreme cases, actively “made to die” through the exercise of juridical power (Foucault, 1978, p. 144).

This process of normalization produces its counterpart: anomalies—nonstandard or deviant categories of persons—what we might call “the Other.” Depending on the dominant discourses prevalent in a given society, the identity of the Other may shift. In Western societies, for instance, the Other often includes those who do not conform to hegemonic norms: individuals who are not male, white, cisgender, able-bodied, legal citizens, middle or upper class, or law-abiding.

In this transformation of political power, various technologies responsible for “making live” succeeded one another—technologies operated by institutions such as schools, hospitals, and military barracks, supported by emergent bodies of knowledge like epidemiology, demographics, and public health. These institutional mechanisms collectively form the operational arm of *biopolitics*, targeting the optimization of life processes at the population level.

The State, in this framework, assumes the role of guardian of the social body’s homeostasis—that is, its internal balance, functionality, and survival. Consequently, issues related to mortality—its frequency, distribution, and causes—become not merely biological

or medical concerns, but *political and administrative categories*. By turning death into an object of measurement and management, the State integrates it into its logic of governance. Managing mortality becomes essential to ensuring the productivity, longevity, and vitality of the population, aligning health with the broader goals of economic and social regulation.

In this sense, Foucault himself states that “biopolitics deals with the population, and population as a political problem, as both a scientific and political problem, as a biological problem and as a problem of power” (Foucault, 2005, pp. 292–293). For the first time in history, the biological life of the human species—that which characterizes humans as living beings—enters the political register as a domain of management and control. This dimension of life, what Aristotle (1998) referred to as *zoé* (mere biological existence), as opposed to *bios* (a qualified life within a political community), becomes the very object of political strategy aimed at optimizing productivity, extending longevity, enhancing adaptability, and improving the population as a whole.

The eugenics movement was indeed a central biopolitical force in the first half of the 20th century, operating through selective breeding, sterilization, and classification of lives deemed unworthy of reproduction (Rose, 2007). These strategies exemplify how the management of life can turn into mechanisms for exclusion, elimination, or forced enhancement—all justified in the name of the common good, public health, or scientific progress.

Eugenics supported not only birth control policies but also the development of certain practices, such as IQ testing in psychology (Lewontin et al., 2003). The targets of the eugenics movement were not exclusively ethnic groups, but also the poor, orphans, the mentally ill, and criminals—in short, those considered second-class citizens. These same marginalized groups were, for a long time, routinely used as subjects of medical experimentation (Annas & Grodin, 1995; Goliszek, 2003; Lederer, 1995).

The prominence of eugenics declined after World War II, primarily because its principles and research had been co-opted into the racial policies and genocidal practices of Nazi Germany in support of the supposed supremacy of the Aryan “race” (Black, 2012). However, the biopolitical drive to identify and normalize the biological “ideal” of the human population has not disappeared—it has merely been reshaped in more subtle and scientifically sanitized forms. As Edwin Black (2012) demonstrates, even after the Nuremberg Code declared eugenics a stratagem for genocide and crimes against humanity, its core ideas went underground, rebranded, and resurfaced in biased and ethically questionable applications—often justified in the name of scientific progress and genetic discovery.

With recent advances in the life sciences, biomedicine, and biotechnology, biopolitics has undergone significant transformation in the 21st century. The contemporary imperative to “make live” is now embedded in areas such as genomic research, personalized medicine, neuropsychiatry, and other emerging biopolitical technologies. Concepts like *biological citizenship* and *genetic responsibility*, identified by Rose (2007), are key to understanding how life itself has become an object of political governance.

Today, not only traditional bioethical issues such as abortion, sterilization, and euthanasia but also newer practices like human enhancement, genetic mapping, and selective reproduction carry distinctly biopolitical dimensions. These areas are rich with potential for ethical misuse—particularly in the context of human experimentation in low- and middle-income countries, where regulatory frameworks are often weaker and populations more vulnerable.

If biopolitics is oriented toward optimizing the species and extending life expectancy, then it inevitably requires the identification—and often regulation—of what are deemed structural or biological “abnormalities” within the social body. Yet, inherent in the logic of “making live” lies its inverse: a form of power over death. Foucault (2005) described this as *State racism*—a mechanism through which



the State governs populations by producing and legitimizing inequalities. In contemporary contexts, this management of inequality is often exercised under the guise of safeguarding population security.

### Managing inequalities: from State racism to security apparatus

Michel Foucault (2008a, 2008b) demonstrates that with the emergence of modern political rationalities, the State gradually assumed the role of managing collective life—not merely governing through laws, but organizing, regulating, and producing life itself. This shift, embedded in the logic of *biopower*, entails a transformation of the State into an entity concerned with planning, predicting, and administering the conditions for life: implementing public policies, mediating conflicts, regulating risks, and optimizing population dynamics. In this sense, it becomes more accurate to speak of the State's involvement in the *production of life*, rather than its passive “making.”

However, Foucault highlights a crucial paradox: although the modern State appears to act in the name of equality and universal well-being, its operational logic is, in fact, deeply embedded in the preservation and management of inequalities. According to Foucault (2008a, p. 196), “*a social policy cannot adopt equality as its goal. On the other hand, it must let inequality act.*” This provocative statement should not be read as an endorsement of inequality, but rather as a diagnostic of the neoliberal and security-driven rationale that governs contemporary societies.

In this framework, inequality is not viewed as an anomaly to be corrected but as a functional element of political strategy. The State manages, rather than resolves, social asymmetries—allowing disparities in wealth, access, and rights to persist as a means of maintaining social order and economic productivity. This logic underpins what Foucault calls the security apparatus: a mode of governance that does not seek

to eliminate dangers or disruptions, but to control and contain them within “acceptable” limits.

Closely related to this is Foucault’s concept of State racism, which he introduces in his 1976 lectures. This form of power, intrinsic to biopolitics, allows the State to “*make live*” some populations while allowing or causing others to “*die*”—either through neglect, exclusion, or active destruction. Racism becomes the mechanism through which a biopolitical State justifies unequal treatment: by positing that some lives are biologically inferior or dangerous to the health of the social body. In this way, the management of inequalities is not simply a social fact but a strategic technology of governance.

From the 18th to the 21st century, biopolitical rationalities have continually evolved, but the principle of managing populations through inequality remains a structural constant. Whether through overt racial hierarchies, economic stratification, or the more insidious narratives of risk, threat, and security, the State’s governance has never been neutral. It is always mediated by mechanisms that differentiate, categorize, and hierarchize lives in the name of collective “welfare” and national “security.”

Until the end of the 18th century, what Foucault refers to as “*race wars*” manifested through processes of biological hierarchization—that is, the classification of human groups into superior and inferior categories based on perceived physiological or cultural differences. Although not always explicitly framed as racial in the modern sense, these dynamics often underpinned colonial conquests, slavery, and other forms of domination. In the 19th century, these forms of conflict did not disappear; instead, they were absorbed into a new mode of power that Foucault (2005) identifies as State racism.

For Foucault, State racism is not limited to skin color or phenotypic characteristics. Rather, it encompasses a broader biopolitical logic—a system that uses biological criteria, constructed through social and historical processes, to justify the differential treatment of human groups. Scientific discourses—particularly those promoted

by medicine, psychiatry, and criminology—played a central role in this process, providing the legitimacy for the State to define norms of health, intelligence, behavior, and ultimately, life itself.

This shift marked what Foucault calls the “statization of the biological”: the moment when biological life became an object of State management, especially in relation to the health and security of the population. Racism became a vital mechanism for governing—enabling the State to fragment the human species and rank its segments according to a biologized logic of value and threat.

Foucault (2005) identifies two main functions of State racism:

1. To introduce a division within the biological continuum of the species—that is, to distinguish between those deemed fit to live and those considered disposable. This division constructs “the Other” as biologically inferior and, therefore, a threat to the health and vitality of the social body.
2. To establish a paradoxical relationship between death and life—as Foucault states: “*the more you let die, the more, therefore, you will live*” (Foucault, 2005, p. 305). In this logic, the elimination or abandonment of certain populations is justified as a means to preserve or enhance the life of others.

It is within this framework that Foucault interprets the most violent regimes of the 20th century—such as Fascism, Nazism, Stalinism, and colonialism—as expressions of intensified biopolitical racism. These States did not simply kill for political reasons; they justified mass extermination through the language of biological preservation, public health, and national security.

Racism is a central element for understanding both the strategies of exclusion and the mechanisms that legitimize the taking of life in modern States. Importantly, *taking life* does not always occur through direct acts of killing. More subtle forms of exclusion operate to increase certain groups’ exposure to death: to exclude, expel, or reject are indirect yet effective techniques to purify the population,

enhance its vitality, and guarantee its security. These practices embody the biopolitical logic of “letting die”—one of the two poles of biopower as exercised by the modern State.

Within this framework, inequality becomes biologically encoded through processes of correction, elimination, and subjugation of those deemed *abnormal*, *weak*, *inferior*, or *deviant*. The logic is clear: the more these “undesirable” groups are eliminated, neglected, or exposed to premature death, the more the rest—those considered valuable, productive, or normatively acceptable—are expected to survive and thrive (Foucault, 2005). While modern States may not literally classify human groups as distinct “species,” they do, implicitly or explicitly, assign different degrees of worth to populations, privileging certain groups for investment, protection, and preservation.

State racism functions precisely through this process of biological hierarchization: it creates and sustains inequality by separating lives into those deemed worthy of maximization and those considered less deserving of being lived. In contemporary Western societies, however, this racism is not typically overt or state-declared, as in totalitarian regimes. Instead, it operates through more subtle mechanisms of governance—under the banner of public safety, national security, and population management (Foucault, 2005). These discourses obscure the discriminatory logic behind modern biopolitical strategies, while continuing to organize life and death along deeply unequal lines.

It is in the name of *security* that modern States manage phenomena related to populations—such as health, hygiene, mortality, and delinquency—within systems that simultaneously claim to uphold individual liberty and human rights (Caponi, 2012). Contemporary societies are increasingly preoccupied with anticipating and mitigating risks that threaten collective life. To this end, security apparatuses (*dispositif de sécurité*) are developed through statistical mediation and the differential calculation of risk factors across categories such as age, sex, and occupation. These data-driven frameworks allow for

the identification of “at-risk” populations and the implementation of targeted preventive strategies.

The distinguishing feature of racism in democratic societies, as compared to its more explicit expressions under totalitarian or colonial regimes, lies in the mode of governance. The security apparatuses in liberal democracies do not typically operate through coercion or open exclusion; instead, they function through regulation—subtly shaping behaviors and access through standards of normalization (Doron, 2013). In this sense, they tolerate certain deviations without necessarily eliminating them, so long as they remain within acceptable margins of calculated risk.

Yet despite these differences in modality, both forms of governance share a common foundation: the management of inequality. As Foucault suggests, modern government does not aim to eliminate inequality; rather, it integrates it into its logic of regulation and control. Equality, in this framework, is not a political objective but a variable to be managed within the broader goal of securing population health and productivity.

It is through the governance of risk that population management assumes a central role—one that was previously occupied, particularly in colonial and totalitarian regimes, by biological racism, concerned with racial degeneration. The discourse of risk—whether rooted in actual threats or constructed imaginaries—operates as a biopolitical strategy. By framing risks as threats to life that must be anticipated and mitigated, this discourse legitimizes and normalizes governmental interventions under the guise of protection.

It is no coincidence, then, that developments in neuroscience have become closely linked to national security agendas (Moreno, 2006). Increasingly, scientific studies aim to locate in the body—particularly in the brain—biological markers associated with potentially dangerous behaviors. These efforts seek to preemptively diagnose and manage deviance before it manifests, reinforcing the logic of anticipatory control that defines biopolitical governance.

Foucault's work makes clear that power is not confined to the State but operates through a dispersed network that traverses the entire social body. He coined the term “power/knowledge” to capture the idea that power is constituted through, and operates by means of, socially validated knowledge systems (*savoir*). The “regime of truth” refers to an ensemble of discourses, practices, and institutions that define what is accepted as legitimate knowledge. These regimes are deeply entwined with mechanisms of power, enabling the State—and other actors—to justify interventions in the name of life, even when such actions involve the abandonment or death of certain populations (Foucault, 1982, 1995).

Medicine, in this framework, serves as a paradigmatic form of power/knowledge. It produces scientifically authorized truths that enable the classification, regulation, and normalization of bodies. The development of medical knowledge—much of which historically has occurred through human experimentation—has been a key mechanism by which modern States have enacted population management since their very inception. Within this context, medical research ethics itself becomes part of a regime of truth: a structured discourse that delineates the boundaries of acceptable practices, while still facilitating the biopolitical governance of life.

## Medicine and experimentation as biopolitical strategy

Michel Foucault (2004a, p. 79) observed that “modern medicine is a social medicine that has as its background a certain technology of the social body.” The emergence and development of modern Western medicine are deeply rooted in the appropriation of biological life—specifically, in the framing of human beings as part of the animal species, subject to observation, categorization, and intervention. While one dimension of medicine operates at the level of individual care (notably in the doctor–patient relationship), much of its

structure and logic, particularly in capitalist societies, is grounded in population-level strategies.

Foucault challenges the assumption that capitalist development shifted medical care from collective to individualized practice. On the contrary, he argues:

My hypothesis is that with capitalism there was not the passage from collective medicine to private medicine, but just the opposite, that capitalism, developing at the end of the 18th century and beginning of the 19th century, socialized a first object that was the body as a production force, a labor force. Society's control over individuals does not operate simply through consciousness or ideology, but begins in the body, with the body. It was in the biological, the somatic, and the corporal that capitalist society invested first of all. The body is a bio-political reality. Medicine is a bio-political strategy. (Foucault, 2004a, p. 80)

Thus, medical knowledge—even when produced outside formal state structures—becomes a key instrument through which modern States exercise control over biological life. This knowledge, focused on health, risk, and the optimization of bodily functions, informs public policies and interventions that align with broader biopolitical goals. It serves as a legitimizing discourse for state action on the population as a biological and economic resource.

Foucault (2004a) identifies three key historical models in the emergence of what he calls *social medicine*: (1) State medicine and medical police in 18th-century Germany, focused on regulating population health through administrative mechanisms; (2) urban medicine in late 18th-century France, which linked health management to spatial and environmental organization; and (3) industrial or labor-force medicine in 19th-century England, which targeted poor workers to maximize productivity and reduce social disruption. These models laid the groundwork for the rise of scientific medicine in the 19th century, later refined in the 20th century through increasing reliance

on empirical methods and, critically, experimentation on human subjects.

Human experimentation thus appears not as a purely scientific endeavor, but as a biopolitical technique—a mode of governance that operates through life itself. Although it is not a form of military violence per se, it often adopts the rhetoric and logic of war. As Foucault (2004b, p. 176) famously stated, “Power is war, war continued by other means.” Medical experimentation echoes this paradigm: patients are often metaphorically “recruited,” as if enlisted in a battlefield, to test new interventions “in the fight” against disease. This language frames experimentation as a noble sacrifice for collective benefit, masking the asymmetries of power, risk, and vulnerability that underpin such practices.

## Colonial and domestic human experimentation as biopolitical practice

Self-experimentation by physicians was indeed common in the 19th century and persisted into the early 20th century, alongside experimentation on sick or institutionalized populations (Altman, 1998). However, the biopolitical nature of medical research became particularly evident in the context of colonial expeditions to the tropics, where bodies in colonized territories were frequently used as experimental material in the name of scientific progress and public health.

For example, British doctors conducted experiments in India between 1894 and 1899 to determine the role of the *Anopheles* mosquito in the transmission of malaria (Caponi, 2004). Similarly, French researchers from the Pasteur Institute, under the auspices of the Minister of Colonies, carried out studies on yellow fever in French colonies and in Rio de Janeiro between 1902 and 1905 (Löwy, 2013). These cases reveal the darker side of medical experimentation in colonial settings: research subjects were exposed to risk, illness, and even death, with unsuccessful or ethically problematic experiments



often omitted from official records and disguised within what Löwy (2013) calls the “heroic and aseptic history of medicine.”

Yet experimentation on human beings was not limited to colonial territories. It also took place within the colonizing nations themselves, typically targeting populations deemed socially or biologically inferior—those constructed as “the Other.” Before, during, and after World War II, several countries—notably the United States and the Soviet Union—engaged in ethically questionable research that exhibited clear biopolitical and sometimes eugenic overtones.

These experiments ranged from testing lethal poisons and subjecting prisoners to radiation in the name of national defense, to the deliberate infection of institutionalized children with hepatitis. Such practices reflect a form of scientific experimentation that justified itself as necessary for the protection or improvement of the population, while exploiting marginalized groups (Goliszek, 2003; Lederer, 1995, 2007; Moreno, 2011; Yudin, 2004). In all cases, the use of human subjects was governed by logics of risk distribution, utility, and disposability—hallmarks of a biopolitical rationality that prioritizes some lives over others.

The eugenics movement of the early 20th century operated in tandem with a prevailing theoretical framework for understanding the health-disease process: the *natural history of disease* model. Developed primarily in the United States in the early decades of the century, this model became hegemonic in the post–World War II era. It conceptualized disease progression as a predictable biological process, detached from social determinants, and provided a scientific rationale that could be—and often was—appropriated for biopolitical purposes.

One of the most infamous examples where this model intersected with racial ideology is the Tuskegee Syphilis Study, conducted between 1932 and 1972 in the American South with the backing of the U.S. government. This study *exemplifies* the systematic abuse of human subjects in the name of scientific knowledge. African Ame-

rican men infected with syphilis were deliberately left untreated so that researchers could observe the «natural» progression of the disease (Reverby, 2000).

Another disturbing case is the Vipeholm Study, carried out in Sweden between 1946 and 1951. This research aimed to investigate the natural history of dental caries and was conducted on institutionalized individuals with intellectual disabilities. Participants were deliberately exposed to high-sugar diets without their consent, once again revealing how vulnerable populations have historically been used as experimental material (Krasse, 2001).

However, the most extreme and emblematic biopolitical project of the 20th century occurred under Nazi rule during World War II. The atrocities committed in Nazi concentration camps are among the most widely studied and condemned examples of unethical human experimentation. These practices were not anomalies, but rather expressions of a broader eugenic logic: the belief that the human species could and should be purified and improved through selective elimination and coerced enhancement.

In Nazi Germany, the medical ethos was reshaped to support these interventions. Physicians became key agents in the implementation of biopolitical strategies, including forced sterilization, euthanasia programs, and inhumane experiments on camp prisoners. These acts were justified as necessary for the health and security of the Volk (the people), illustrating how deeply medicine can be entangled in political projects of control and exclusion.

As Hannah Arendt (2013) famously argued, such horrors were enabled not only by ideological extremism but also by a *vacuum of thought*—a failure to question orders, interrogate norms, and resist the bureaucratic machinery of violence. The “banality of evil” is, in this sense, not just a psychological phenomenon but a political and historical one—one that continues to warn us about the dangers of unchecked biopower when it operates under the guise of scientific progress.

Also, during the period surrounding World War II, specifically between 1932 and 1945, Japan conducted human experimentation in China as part of its biological warfare program—experiments that bore strong biopolitical characteristics and were carried out under the justification of national defense. Although these actions have received comparatively less attention, they are widely regarded as equivalent in severity to the medical atrocities committed by Nazi Germany.

Despite this, the Japanese researchers responsible were spared prosecution for crimes against humanity. This decision was made by the State-War-Navy Coordinating Committee (SWNCC), a U.S. government body established in 1944 to manage political and military affairs related to the postwar occupation of Axis powers. The SWNCC initially justified its decision on the grounds of insufficient technical and scientific evidence to support legal action against the Japanese doctors (Bärnighausen, 2007).

However, internal SWNCC documents later revealed significant conflicts of interest behind this acquittal. Prosecuting the Japanese scientists would have meant discarding the data they had collected—data that, despite being obtained through ethically indefensible means, were considered of high scientific value, particularly by U.S. military and biomedical authorities. Unlike many of the German experiments, the Japanese studies were deemed more systematically executed and thus more useful for postwar American research agendas (Bärnighausen, 2007).

The decision not to prosecute these physicians at the Nuremberg Trials reflects a calculated biopolitical strategy: one that prioritized the instrumental value of scientific knowledge over ethical accountability. In this sense, the case illustrates how the logic of biopolitics—centered on the regulation and exploitation of life—can justify and normalize extreme forms of violence when framed as serving the interests of science, national security, or technological progress.

When analyzing the biopolitics of human experimentation in the first half of the 20th century, the decline of eugenics after World War

II stands out—particularly as a result of the Nuremberg Trials, which judged that eugenic principles had underpinned racial policies and practices in Nazi Germany aimed at defending the supposed supremacy of the Aryan “race” (Black, 2012). Nonetheless, elements of eugenic thought have persisted, especially in fields related to genetics and reproductive technologies.

It was also during this period—immediately following the war—that randomized controlled clinical trials (RCTs) began to gain prominence (Pignarre, 1999). This new form of human experimentation brought with it a fresh set of ethical and political controversies, particularly regarding the use of human subjects in a rapidly globalizing research environment.

Within this context, the term “experiment” gradually fell out of favor, replaced by more neutral or reassuring alternatives, such as “clinical trial” or “research.” As Elliott (2016, p. 9) notes, *“The research establishment has a vested interest in using language that portrays its work as safe, carefully regulated, and socially beneficial.”* This rhetorical shift is itself an example of a biopolitical strategy: the term “experiment” carries historical weight and moral discomfort, which many institutions now seek to avoid.

In the postwar period, placebo-controlled trials became the dominant method for validating experimental therapies and medical interventions. Their rise was linked to increasing regulatory demands for scientific rigor and public safety, particularly in the U.S., where health authorities required robust evidence to approve pharmaceuticals for market release (Pignarre, 1999). Thus, it was in the name of collective health and safety that the clinical trial emerged as the gold standard of biomedical research.

However, the ethical foundation of this new model has been consistently challenged. Participants in clinical trials have long come from marginalized and vulnerable populations—those who are socially excluded, politically disempowered, and, in biopolitical terms, “left to die” for the benefit of those whose lives will be enhanced. Henry K.

Beecher's seminal 1966 article on ethics in clinical research revealed serious ethical breaches in studies conducted by leading universities and published in top-tier medical journals. Beecher exposed how research subjects—though no longer prisoners of concentration camps—were often subjected to experimental abuse, frequently without informed consent. These participants were typically prisoners, institutionalized children, the elderly, and other vulnerable individuals: in short, the Other, or those considered second-class citizens.

A major development since the late 1990s has been the outsourcing of clinical trials to low- and middle-income countries. This shift was driven in part by the globalization of pharmaceutical research following the adoption of the TRIPS Agreement and the Good Clinical Practice (GCP) Guidelines established by the International Conference on Harmonisation (ICH) (Homedes & Ugaldi, 2012). What has emerged is a new biopolitical configuration characterized by the use of double ethical standards: clinical trials conducted in poorer countries often apply protocols that would be unacceptable in the wealthier countries sponsoring them (Macklin, 2004).

One widely cited example is the U.S.-sponsored placebo-controlled trials of Zidovudine for the prevention of mother-to-child transmission of HIV, conducted in several African countries—even though effective treatment was already available (Angell, 1997; Caponi, 2004). A more recent case occurred in April 2020, during a televised debate in which two French doctors proposed testing a COVID-19 vaccine in Africa, arguing that there were “no masks, no treatments, no intensive care”—a statement that drew global criticism and underscored the persistence of colonial attitudes in contemporary research (Hellmann et al., 2020).

Human experimentation has not served solely to assess the efficacy and safety of medical interventions. Another major area of focus has been social security, particularly through efforts to control potential risks posed by individuals deemed deviant or criminal. The drive to prevent deviance—or even to identify potential criminals in advan-

ce—has fueled research framed as part of a war against those who deviate from socially constructed norms.

Studies in genetics and neuroscience often reflect neo-eugenic tendencies, justified in the name of public safety. These investigations aim to locate in the human body—especially in the brain—biological markers associated with traits considered socially undesirable, such as alcoholism, gender identity “disorders,” or psychopathy, as illustrated in the work of Yang and colleagues (Yang et al., 2009). Since the late 20th century, such human experimentation has become increasingly common, grounded in a security apparatus that medicalizes criminality as a strategy for anticipating and managing future threats (Dillon & Lobo-Guerrero, 2008; Mitjavila & Mathes, 2012; Moreno, 2011; Rose, 2007).

Beyond therapeutic interventions and predictive diagnostics, a further area of ethical and political concern is research aimed at enhancing the human species—a prominent theme in 21st-century biopolitics. As Rose (2007) argues, contemporary biopolitics is no longer solely organized around state mechanisms like the security apparatus, but also around new forms of subjectivation shaped by biomedical knowledge. Today, the imperative to “make live” extends to practices that deconstruct and reconfigure human vitality: life can be frozen, stored in biobanks, commercialized, and accumulated, circulating across global markets and institutions that serve not only health but also profit, capital, and private enterprise.

Within this context, research that aims to enhance and optimize the human body—to overcome physical or cognitive limitations and expand vital capacities—constitutes yet another dimension of contemporary biopolitical power (Rose, 2007). While the desire to improve the human condition is not entirely new, its current articulation through transhumanist aspirations and biotechnological interventions reflects a distinct transformation in how life is governed, valued, and instrumentalized.

Human enhancement features prominently in bioethical debates, as it mobilizes new forms of biopower through cutting-edge techno-

logies and emerging fields of study—notably neuroscience, genetics, cybernetics, nanotechnology, pharmacology, and a wide array of novel therapies aimed at overcoming perceived human limitations (Hughes, 2009; Rose, 2007). This agenda is closely aligned with the ideology of Transhumanism, which envisions the enhancement of human capacities beyond their biological constraints through technological intervention. It is therefore crucial to consider how these visions of the “post-human” intersect with biopolitical strategies of control, optimization, and exclusion.

While these new technologies present themselves as capable of prolonging life and improving health, they simultaneously reinforce old exclusions: those in socially vulnerable positions are systematically left behind, lacking access to the very enhancements that are marketed as universally beneficial. This raises important questions about whether such technologies genuinely fulfill the promises propagated by the pharmaceutical industry and human enhancement discourse, or whether they merely repackage inequality under the guise of innovation.

The biopower grounded in population management—as theorized by Foucault (2005)—and the new forms of individualization within populations, highlighted by Rose (2007), are deeply entangled with market imperatives. Increasingly, human experimentation is governed not by public health needs, but by economic logic, including the demand to lower research and labor costs. This dynamic is particularly evident in the growth of Contract Research Organizations (CROs)—business entities that conduct research on behalf of pharmaceutical companies—and in the prioritization of studies that align with market profitability rather than pressing social or public health concerns.

Industrialized medicine thus expands its global reach by capitalizing on social vulnerability. Individuals who lack even the most basic conditions for self-care, due to systemic inequalities, are perpetually exposed to forms of biopolitical vulnerability. These populations—

living at the margins of consumer society—have become the primary pool of subjects for human experimentation.

Alarmingly, not even international ethical guidelines for research involving human beings are sufficient to protect them. These norms often contain loopholes, and in some cases, have been intentionally crafted to remain ambiguous and flexible, making them susceptible to manipulation. As such, ethical norms themselves can function as apparatus of biopower: they regulate not only how experimentation is carried out, but also who may be experimented upon—and under what conditions.

### On norms in human experimentation within the framework of biopolitics

The history of ethical regulations in human experimentation arises primarily from the errors and abuses committed against research subjects. These norms were created to guide scientific investigation in ways that avoid such abuses. However, the proliferation of ethical guidelines and regulatory frameworks has coexisted with recurring ethical violations in biomedical research, which continue to occur with alarming frequency.

Internationally, the regulation of human experimentation ethics began with the Nuremberg Code in 1947. This code, a product of the war crimes tribunals following World War II, was drafted by judges and directed at the global medical community. Yet, its principles were not immediately adopted or implemented in medical research practices (Annas & Grodin, 1995).

The first principle of the Nuremberg Code declares that the voluntary consent of the research subject is absolutely essential. This emphasis on autonomy reflects the North American political tradition, as all judges involved in drafting the Code were from the United States (Reich, 2001). While this marked a significant advance



in ethical thinking within a biopolitical context, both during and after WWII, it is crucial to interrogate the material conditions under which such autonomy is exercised. In many cases, consent forms have functioned more as bureaucratic instruments than as reflections of genuine ethical concern or participant empowerment.

That same year, in 1947, the World Medical Association (WMA) was re-established and began drafting what would become the Declaration of Helsinki, officially adopted in 1964. The process took over a decade and was marked by significant resistance and negotiation (Lederer, 2007). Unlike the Nuremberg Code—created by judges—the Declaration of Helsinki was drafted *by physicians for physicians*, resulting in a softer, more pragmatic document.

In the first version of the Declaration, the requirement for voluntary consent was no longer absolute (World Medical Association, 1964). The document was adapted to the realities and needs of the research community—especially under U.S. influence, which sought alignment with domestic legislation. This flexibility introduced ethical-legal loopholes, which, in a Foucauldian perspective, can be understood as biopolitical strategies: regulatory ambiguities that permit the continuation of practices on marginalized groups.

It is worth noting that early drafts of the Declaration (e.g., the 1962 Draft Code of Ethics on Human Experimentation) excluded vulnerable populations such as prisoners, children in orphanages, and the elderly in asylums from being used in research. These exclusions, however, were removed from the final version adopted in 1964 (World Medical Association, 1964), enabling the systematic use of institutionalized populations as accessible research subjects.

This tendency to silence controversial topics in the ethics of human experimentation persists in the current version of the Declaration of Helsinki (World Medical Association, 2013). For example, the topic of human enhancement—despite being raised in revision discussions—does not appear among the document's principles (Hellmann, 2014). Other contentious issues, such as the regulation

of biobanks, post-trial access to medications, and the use of placebos in control groups, are either weakly addressed or left open to interpretation—once again facilitating their instrumentalization as biopolitical mechanisms (Hellmann, 2014).

The word “experimentation” itself has been largely purged from ethical codes. [Though this point has been mentioned earlier in the article, it is worth reasserting here for emphasis.] In the 2008 Seoul revision of the Declaration of Helsinki, “experiment” is used only once, and only in reference to animal experimentation (Elliott, 2016, p. 8). This rhetorical shift creates a symbolic boundary between human and non-human subjects while also sanitizing the image of biomedical research. The same shift occurs in informed consent forms, which now use terms like “study,” “program,” “project,” or “trial,” avoiding the term “experiment” due to concerns that it may discourage participation.

The International Ethical Guidelines for Biomedical Research Involving Human Subjects, first issued by CIOMS in 1982 and revised in 1993 and 2002, exemplifies this trend (CIOMS, 2002). The 2002 version diverged from the Declaration of Helsinki on key points, such as the permissibility of placebo use and access to treatment after a trial. Meanwhile, the 2000 revision of the Helsinki Declaration had reinforced participant protections and challenged the gold-standard status of randomized, double-blind, placebo-controlled trials—a move that raised concerns among research sponsors due to the potential increase in operational costs.

The 2000 revision of the Declaration of Helsinki not only influenced the CIOMS guidelines but also prompted the emergence and revision of numerous national and international regulatory frameworks. These developments were often framed as counterpoints to the Declaration’s reinforced protections—protections that primarily benefited research subjects in low- and middle-income countries.

This biopolitical response was driven by institutions such as the Joint United Nations Programme on HIV/AIDS (UNAIDS,

2000), the U.S. Food and Drug Administration (FDA, 2001), the National Bioethics Advisory Commission (2001), the Nuffield Council on Bioethics (2002), and the European Group on Ethics in Science and New Technologies (2003). As a result of this regulatory contestation, the Declaration of Helsinki itself underwent further clarifications and amendments—revealing the biopolitical tensions at the heart of international research ethics.

These successive revisions exemplify how clinical research ethics has been constructed as a ‘regime of truth’ in the Foucauldian sense: a set of discourses, practices, and institutional mechanisms that establish what is accepted as ethical, legitimate, and true within a specific historical and political context. In this framework, ethical norms are not neutral tools of protection but are themselves implicated in power relations—they shape and are shaped by the interests of states, industries, and global health institutions.

Notably, the ethical variability introduced by the proliferation of these guidelines weakens the possibility of establishing universal standards of care in clinical research. This variability functions as a biopolitical tactic: it facilitates the recruitment of research subjects in regions with more permissive regulations and enables the global circulation of medical experimentation, particularly toward poorer countries with fewer protections for participants (Petryna, 2005).

The ambiguous language and interpretative flexibility of key principles in these ethical documents allow them to operate as instruments of biopower. In this sense, ethics becomes a means of hierarchizing human lives: on one side, those whose lives must be protected, enhanced, and prolonged; on the other, the *Other*—those whose lives are instrumentalized, reduced to data points, and positioned outside the full scope of human rights and legal protections.

As a result, practices that would otherwise be considered ethically unacceptable in one context are reframed as ethically permissible in another. This dynamic does not reflect a failure of ethics, but rather its

transformation into a regulatory apparatus that legitimizes inequality under the guise of scientific progress and global health.

## Conclusion: human experimentation and the biopolitics of life

This article has explored human experimentation through the analytical lens of Michel Foucault's concept of biopolitics, showing how medical research has historically functioned not as a neutral scientific endeavor, but as a technology of governance. From colonial trials to contemporary clinical research and human enhancement, experimentation has operated as a tool for regulating, optimizing, and at times sacrificing life in the name of progress, security, and market efficiency.

There is no doubt that human experimentation plays a vital role in the advancement of medicine. Yet, within biopolitical logics, it also acts as a subtle—and at times violent—mechanism for exposing certain lives to increased risk. Particularly for marginalized populations, participation in clinical trials is often less a matter of autonomy and more a reflection of structural exclusion: research becomes the only available form of care. These bodies, governed by logics of utility and disposability, are turned into raw material for knowledge production—while the benefits of science accrue elsewhere.

Far from being simply protective instruments, ethical guidelines and regulatory frameworks have often served to legitimize these asymmetries. Documents like the Declaration of Helsinki, despite their foundational role, include ambiguities and loopholes that make them vulnerable to market and geopolitical interests. Bioethics, in this context, may itself operate as a *regime of truth*—a historically and politically situated discourse that determines what is considered ethical, for whom, and under which conditions.

As Paulo Freire (1981) observed, there is no such thing as ideological neutrality. Ethics is always political, and the language we

choose—be it “experiment” or “study”—carries implicit values and exclusions. As Elliott (2016, p. 9) notes, “today the choice whether to refer to the testing of a new drug in humans as an ‘experiment’ or a ‘research study’ seems like an ideological decision.” The critical question, then, is: *What does that ideological decision conceal? Whom does it protect, and whom does it abandon?*

If bioethics is to avoid becoming merely an apparatus of governance, it must confront its complicity in systems of inequality and control. Rather than sanitizing the language or depoliticizing the debate, we must reclaim bioethics as a space of resistance—one capable of challenging the normalization of exclusion, of naming injustice, and of protecting life in its fullest and most inclusive sense.

## Referencias bibliográficas

- Agamben, G. (2004). *Estado de exceção: Homo sacer, II, I* (I. D. Poleti, Trad.). Boitempo. (Obra original publicada em 2003)
- Agamben, G. (2005). *State of exception* (K. Attell, Trans.). University of Chicago Press. (Obra original publicada em 2003)
- Altman, L. K. (1998). *Who goes first? The story of self-experimentation in medicine*. University of California Press.
- Angell, M. (1997). The ethics of clinical research in the Third World. *New England Journal of Medicine*, 337(12), 847–849. <https://doi.org/10.1056/NEJM199709183371209>
- Annas, G. J., & Grodin, M. A. (1995). *The Nazi doctors and the Nuremberg Code: Human rights in human experimentation*. Oxford University Press.
- Arán, M., & Peixoto Júnior, C. A. (2007). Vulnerabilidade e vida nua: Bioética e biopolítica na atualidade. *Revista de Saúde Pública*, 41(5), 849–857. <https://doi.org/10.1590/S0034-89102006005000038>
- Arendt, H. (2013). *Eichmann em Jerusalém: Um relato sobre a banalidade do mal*. Companhia das Letras.
- Aristóteles. (1998). *A política* (N. S. Chaves, Trad.). Ediouro. (Universidade de bolso).
- Ashcroft, R. E. (2003). Constructing empirical bioethics: Foucauldian reflections on the empirical turn in bioethics research. *Health Care Analysis*, 11(1), 3–13. <https://doi.org/10.1023/A:1025329811812>
- Bärnighausen, T. W. (2007). Communicating ‘tainted science’: The Japanese biological warfare experiments on human subjects in China. In U. Schmidt & A. Frewer (Eds.), *History and theory of human experimentation: The Declaration of Helsinki and modern medical ethics* (pp. 117–142). Franz Steiner Verlag.
- Beecher, H. K. (1966). Ethics and clinical research. *New England Journal of Medicine*, 274(24), 1354–1360. <https://doi.org/10.1056/NEJM196606162742405>

- Black, E. (2012). *War against the weak: Eugenics and America's campaign to create a master race*. Dialog Press.
- Candiottto, C., & Salomé D'Espíndula, T. (2012). Biopoder e racismo político: Uma análise a partir de Michel Foucault. *Revista Internacional Interdisciplinar INTERthesis*, 9(2), 20–39. <https://doi.org/10.5007/1807-1384.2012v9n2p20>
- Caponi, S. (2004). A biopolítica da população e a experimentação com seres humanos. *Ciência & Saúde Coletiva*, 9(2), 445–455. <https://doi.org/10.1590/S1413-81232004000200020>
- Caponi, S. (2012). Classificar e medicar: A gestão biopolítica dos sofrimentos psíquicos. *Revista Internacional Interdisciplinar INTERthesis*, 9(2), 101–118. <https://doi.org/10.5007/1807-1384.2012v9n2p101>
- Chen, Y., & Luo, X. (2024). Reflection on Gene Editing from the Perspective of Biopolitics. *NanoEthics*. <https://doi.org/10.1007/s11569-023-00451-4>
- Council for International Organizations of Medical Sciences. (2002). *International ethical guidelines for biomedical research involving human subjects*. CIOMS.
- Dillon, M., & Lobo-Guerrero, L. (2008). Biopolitics of security in the 21st century: An introduction. *Review of International Studies*, 34(2), 265–292. <https://doi.org/10.1017/S0260210508008024>
- Donda, M. C. S. (2014). Biopolítica y gestión de los cuerpos. In D. Porto, B. Schlemper Junior, G. Z. Martins, T. Cunha, & F. Hellmann (Eds.), *Bioética: Saúde, pesquisa, educação* (2nd ed., pp. 189–202). CFM/SBB.
- Doron, C.-O. (2013). *Savoirs et gouvernement du risque*. Université Paris Diderot. [https://www.academia.edu/6472785/Savoirs\\_et\\_gouvernement\\_du\\_risque](https://www.academia.edu/6472785/Savoirs_et_gouvernement_du_risque)
- Draft Code of Ethics on Human Experimentation. (1962). *BMJ*, 2(5312), 1119. <https://doi.org/10.1136/bmj.2.5312.1119>

- Elliott, C. (2016). Whatever happened to human experimentation? *Hastings Center Report*, 46(1), 8–11. <https://doi.org/10.1002/hast.531>
- Esposito, R. (2008). *Bios: Biopolitics and philosophy* (T. Campbell, Trans.). University of Minnesota Press. (Obra original publicada em 2004)
- Esposito, R. (2013). *Terms of the political: Community, immunity, biopolitics*. Fordham University Press. <https://doi.org/10.1515/9780823292745>
- European Commission, & European Group on Ethics in Science and New Technologies. (2003). *Opinion Nr 17 on ethical aspects of clinical research in developing countries*.
- FDA. (2001). *Guidance for industry acceptance of foreign clinical studies*. U.S. Department of Health and Human Services.
- Finkler, M., Verdi, M. I. M., Caetano, J. C., & Ramos, F. R. S. (2010). Formação profissional ética: Um compromisso a partir das diretrizes curriculares? *Trabalho, Educação e Saúde*, 8(3), 449–462. <https://doi.org/10.1590/S1981-77462010000300007>
- Foucault, M. (1978). *The history of sexuality: An introduction* (Vol. 1). Pantheon Books.
- Foucault, M. (1982). *The archaeology of knowledge: And the discourse on language*. Vintage Books.
- Foucault, M. (1995). *Discipline and punish: The birth of the prison* (2nd ed.). Vintage Books.
- Foucault, M. (2004a). O nascimento da medicina social. In M. Foucault & R. Machado (Eds.), *Microfísica do poder* (pp. 79–98). Graal.
- Foucault, M. (2004b). Soberania e disciplina. In M. Foucault & R. Machado (Eds.), *Microfísica do poder* (pp. 179–192). Graal.
- Foucault, M. (2005). *Em defesa da sociedade: Curso no Collège de France (1975–1976)*. Martins Fontes.
- Foucault, M. (2008a). *Nascimento da biopolítica: Curso no Collège de France (1978–1979)*. Martins Fontes.
- Foucault, M. (2008b). *Segurança, território, população*. Martins Fontes.



- Freire, P. (1981). *Pedagogia do oprimido* (9th ed.). Paz e Terra.
- Gäckle, N. (2023). Governing pandemic fatigue: an International Relations case of experiential biopolitics. *European Journal of International Relations*. <https://doi.org/10.1177/13540661231183357>
- Giraldo, L. F. G., & Zuluaga, C. G. (2013). El cuidado de sí y de los otros en Foucault, principio orientador para la construcción de una bioética del cuidado. *Discusiones Filosóficas*, 14(22), 187–201.
- Goliszek, A. (2003). *In the name of science: A history of secret programs, medical research, and human experimentation*. St. Martin's Press.
- Guta, A., Gagnon, M., & Jacob, J. D. (2012). Using Foucault to recast the telecare debate. *The American Journal of Bioethics*, 12(9), 57–59. <https://doi.org/10.1080/15265161.2012.699140>
- Hellmann, F. (2014). *A Declaração de Helsinque como estratégia biopolítica: Uma genealogia do duplo standard para ensaios clínicos em países periféricos* [Doctoral dissertation, Universidade Federal de Santa Catarina].
- Hellmann, F., & Homedes, N. (2022). An unethical trial and the politicization of the COVID-19 pandemic in Brazil: The case of Prevent Senior. *Developing World Bioethics*, 22(3), 162–168. <https://doi.org/10.1111/dewb.12363>
- Hellmann, F., Verdi, M., Schlemper Junior, B. R., & Caponi, S. (2014). 50th anniversary of the Declaration of Helsinki: The double standard was introduced. *Archives of Medical Research*, 45(7), 600–602. <https://doi.org/10.1016/j.arcmed.2014.10.005>
- Hellmann, F., Williams-Jones, B., & Garrafa, V. (2020). COVID-19 and moral imperialism in multinational clinical research. *Archives of Medical Research*, 51(6), 572–573. <https://doi.org/10.1016/j.arcmed.2020.04.017>
- Homedes, N., & Ugaldi, A. (2012). Un estudio crítico de los principios éticos internacionales. In N. Homedes & A. Ugaldi (Eds.), *Ética y ensaios clínicos en América Latina* (pp. 21–79). Lugar Editorial.

- Hughes, J. (2009). Techno progressive biopolitics and human enhancement. In J. Moreno & S. Berger (Eds.), *Progress in bioethics* (pp. 163–188). MIT Press.
- Krasse, B. (2001). The Vipeholm dental caries study: Recollections and reflections 50 years later. *Journal of Dental Research*, 80(9), 1785–1788. <https://doi.org/10.1177/00220345010800090201>
- Lederer, S. E. (1995). *Subjected to science: Human experimentation in America before the Second World War*. Johns Hopkins University Press.
- Lederer, S. E. (2007). Research without borders: The origins of the Declaration of Helsinki. In U. Schmidt & A. Frewer (Eds.), *History and theory of human experimentation: The Declaration of Helsinki and modern medical ethics* (pp. 145–164). Franz Steiner Verlag.
- Lewontin, R. C., Rose, S., & Kamin, L. J. (2003). *Not in our genes: Biology, ideology, and human nature*. Pantheon.
- Löwy, I. (2013). The best possible intentions testing prophylactic approaches on humans in developing countries. *American Journal of Public Health*, 103(2), 226–237. <https://doi.org/10.2105/AJPH.2012.300901>
- Lysaught, M. T. (2009). Docile bodies: Transnational research ethics as biopolitics. *Journal of Medicine and Philosophy*, 34(4), 384–408. <https://doi.org/10.1093/jmp/jhp026>
- Macklin, R. (2004). *Double standards in medical research in developing countries*. Cambridge University Press.
- Mitjavila, M. R., & Mathes, P. G. (2012). Doença mental e periculosidade criminal na psiquiatria contemporânea: Estratégias discursivas e modelos etiológicos. *Physis: Revista de Saúde Coletiva*, 22(4), 1377–1395. <https://doi.org/10.1590/S0103-73312012000400007>
- Moreno, J. D. (2006). *Mind wars: Brain research and national defense*. Dana Press.
- Moreno, J. D. (2011). *The body politic: The battle over science*. Bellevue Literary Press.

- National Bioethics Advisory Commission. (2001). *Ethical and policy issues in international research: Clinical trials in developing countries*. NBAC.
- Nuffield Council on Bioethics. (2002). *The ethics of research related to healthcare in developing countries*.
- Petryna, A. (2005). Ethical variability: Drug development and globalizing clinical trials. *American Ethnologist*, 32(2), 183–197. <https://doi.org/10.1525/ae.2005.32.2.183>
- Petryna, A. (2009). *When experiments travel: Clinical trials and the global search for human subjects*. Princeton University Press.
- Pignarre, P. (1999). *O que é o medicamento? Um objeto estranho entre ciência, mercado e sociedade*. Ed. 34.
- Reich, W. T. (2001). The care-based ethic of Nazi medicine and the moral importance of what we care about. *American Journal of Bioethics*, 1(1), 64–74. <https://doi.org/10.1162/152651601750079195>
- Reverby, S. M. (Ed.). (2000). *Tuskegee's truths: Rethinking the Tuskegee Syphilis Study*. University of North Carolina Press.
- Rose, N. (2007). *The politics of life itself: Biomedicine, power, and subjectivity in the twenty-first century*. Princeton University Press.
- Tremain, S. (2008). The biopolitics of bioethics and disability. *Journal of Bioethical Inquiry*, 5(2–3), 101–106. <https://doi.org/10.1007/s11673-008-9105-6>
- UNAIDS. (2000). *Ethical considerations in HIV preventive vaccine research: UNAIDS guidance document*.
- World Medical Association. (1964). *Declaration of Helsinki*.
- World Medical Association. (2013). *Declaration of Helsinki*. Amended by the 64th WMA General Assembly.
- Yang, Y., Raine, A., Narr, K. L., Colletti, P., & Toga, A. W. (2009). Localization of deformations within the amygdala in individuals with psychopathy. *Archives of General Psychiatry*, 66(9), 986. <https://doi.org/10.1001/archgenpsychiatry.2009.110>

- Yudin, B. (2004). Human experimentation in Russia/the Soviet Union in the first half of the 20th century. In V. Roelcke & G. Maio (Eds.), *Twentieth century ethics of human subjects research: Historical perspectives on values, practices, and regulations* (pp. 99–110). Franz Steiner Verlag.
- Zimmer, D. (2025). The Power to Kill Life Itself: Michel Foucault, Biopolitics, and the Political Challenge of Human Extinction. *Perspectives on Politics*. <https://doi.org/10.1017/s1537592725000027>