REGIMES OF HUMAN SECURITY, INTELLECTUAL PROPERTY AND SOCIAL REPRODUCTION

Ideas, Institutions and Material Capabilities from the 19th Century Liberal Capitalism to the 21st Century New Constitutional Architecture

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Abstract

This dissertation develops a historically grounded understanding of human security by examining the contested trajectory of the relationship between intellectual property regimes and human security concerns institutionally and ideationally in the different eras of capitalism, and the unprecedented emergence of patent protection as the 'common sense' of subsistence in neoliberalism. Developing a novel synthesis that integrates Robert Cox's framework of historical structures of ideas, institutions, and material capabilities, and the forms of power arising from their interaction, feminist social reproduction theories, 'new constitutionalism', and Fernand Braudel's analysis of long-term patterns of historical continuity and change, it examines subtle and often obscured ways in which patent regimes have shaped the global governance of human security, particularly of food security and hunger, and the social reproductive contradictions of capitalism across different accumulation regimes.

The dissertation explores significant shifts and continuities in the dominant ideas and institutions related to the commodification of knowledge and hunger, and puts forth three primary claims. First, the ideational and institutional origins of the relationships between patents and the global governance of subsistence lie in the normative framework of the 'liberal utopia' of nineteenth-century economic liberalism, colonial rule and the invention of the corporation as a legal subject. Secondly, the neoliberal patent regime is a new constitutionalist mechanism that locks in a financialized and deeply depoliticized human security regime that institutionalizes the precarity of subsistence as a permanent condition, particularly for the impoverished populations in the Global South. The neoliberal institutionalization of patents on seed and, more broadly, the 'technological fix' of what I frame as "the plants of market civilization" suggests a neoliberal human security regime that is difficult to transform and systematically insulated from democratic accountability and popular contestation from below. Third, the enduring legacy of the new constitutionalist logic of depoliticization has been reinforced in the different eras of capitalism by hegemonic ideas and institutions that relegate hunger and food security to the 'economy', to international institutions and corporate philanthropy/charity.

Key Words: Human security, social reproduction, new constitutionalism, intellectual property, basic needs, food security, food regimes, agricultural biotechnology, patents on seeds, patents on plant varieties.

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List of Acronyms

AOA	Agreement on Agriculture
BIRPI	United International Bureaux for the Protection of Intellectual Property
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Center
CPA	Coalition Provisional Authority
EPC	European Patent Convention
EPO	European Patent Office
FAC	Food Aid Convention
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
IARC	International Agricultural Research Center
ICA	Inter-governmental Commodity Agreement
IFPRI	International Food Policy Research Institute
IMF	International Money Fund
ITO	International Trade Organization
LGUs	Land Grant Universities
MAP	Mexican Agricultural Program
MSF	Doctors Without Borders
NEIO	New International Economic Order
PBRs	Plant Breeders' Rights
TNEC	Temporary National Economic Committee
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UNDP	United Nations Development Program
UPOV	Union for the Protection of Plant Variety Rights
USPTO	US Patent Office
WB	World Bank
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION TO THE THESIS

The purpose of this thesis is to explore the contemporary question of human security – starting with the well-known definition used by the United Nations Development Program (UNDP 1994), in particular with respect to key aspects of human security in the spheres of health and nutrition. According to the UNDP Report (UNDP 1994, 23), human security is the "safety from chronic threats such as hunger, disease, and repression as well as protection from sudden and harmful disruptions in the patterns of daily life—whether in homes, jobs or communities." The recent UNDP Human Security Report (2022, 4) describes human security as a "development paradox", highlighting that "even though people are on average living longer, healthier and wealthier, such advances did not increase people's sense of security". Human security involves, as Bakker and Gill (2003, 11) write, "a collective sense of confidence about the future, premised on a condition where unnecessary dangers associated with everyday life and situations of crisis are minimized or eliminated".

To deal with this issue, the thesis adopts a critical integrated historical materialist method that can place international property rights, in particular patents, within the framework of social reproduction, as a key force in shaping health and livelihood, as well as provisioning and nutrition which have increasingly shaped the global political economy in ways that have had significant impact on human security.

This method pulls together insights from interlocking critical approaches to global political economy, international law and global governance. These are Cox's methodology of historical structures, understood in terms of the social forces of ideas, institutions and material potentials (Cox 1987, 1996) and their interplay, the feminist historical materialist lens of social reproduction, Gill's (1998; Gill and Cutler 2014) understanding of 'new constitutionalism' and the critical international law framework of 'commodity form of law' (Pashukanis 1978; Miéville 2004; Knox 2009; Cutler 2014, 2018), and Braudel's delineation of the *longue durée* patterns of historical time often spanning centuries, comprising enduring historical structures of "fairly fixed series of

relationships between realities and social masses" that "stand as limits…beyond which man and his experience cannot go" (Braudel 1980, 27-31). This methodological framework informs the historical approach of this dissertation, which traces the contemporary dominance of the neoliberal patent regime as a key mechanism of the liberal global governance of social reproduction/human security.

This will involve analyzing intellectual property regimes as contested political projects rather than *merely* legal regimes or regulatory technicalities of free trade policy and analyzing their fundamental yet relatively overlooked roles in the governance and the transformation of the social and ecological conditions of the reproduction of populations and future generations. Whilst this dissertation is not unique to this latter exploration, it does offer a novel consideration of how intellectual property regimes are significant not only for the organization of capital of production and capital accumulation but also in forging a historically grounded organization of basic needs provision, forms of subsistence and human security regimes more broadly.

In this context, then, the central question that the dissertation addresses can be broadly framed as follows: What have been the often silent roles of (international) legal regimes, specifically intellectual property regimes, in constituting a political-economic order that generates immense profits from people's existential reliance on the provision of their basic needs such as food and basic health, while increasing global food insecurity and what today appears as insurmountable inequality of access to basic human needs within and between states?

To state briefly for now, 'social reproduction' as theorized by feminist political economists, refers to a wide array of relations and numerous forms of unpaid/underpaid typically gendered and racialized labour necessary for the reproduction of labourers as physical and social beings, healthy communities and ecologies. As feminist scholars have demonstrated economic production and capital accumulation rely on this realm associated with the production of human and nonhuman life that is systematically damaged, eroded, and at best, rendered invisible, throughout historical capitalism. As Bakker and Gill (2003, 3) highlight, "IPE [international political economy] literature has so far largely failed to fully integrate into explanations of the restructuring of world society…the analysis of transformations in fundamental social processes, and the mechanisms and institutions [of social reproduction] upon which societies and communities as well as power and production, are built".

While pharmaceutical product patents have been at the center of many patent controversies, patent protection has also emerged, relatively more silently, as a crucial mechanism in another sector vital for basic human needs: patents on seeds, plant genetic resources, food crops, plant varieties, and, more recently and unprecedentedly to, conventional breeding techniques, all of which significantly impact global food security. As Cutler (2014, 53) duly reminds us, "Not many years ago, the world's major crops were considered the common property of humankind, along with water and air. Patenting them was out of the question". Staple food crops fundamental to the provision of basic needs and subsistence often had an exceptional status in the patent system and were widely exempt from patentability in developed and developing countries. For instance, the first German patent law, the Patent Act of 1877, particularly excluded food from patentability and this exemption was in effect until 1967 when "food became patentable as such", facilitating the German food sector to thrive since then (Willnegger 2008, 19).

In the US too, whether plants and animals should be subject to patenting has been a contentious issue until the end of World War II. In the aftermath of the war, increasing concerns over food security led to the enactment of the US Plant Patent Act (1930) which "created intellectual property rights for plants that propagate (asexually) through roots rather than seeds" (Moser 2016, 19). Supporting the Act, the plant breeders demanded full protection of their research and development (R&D) investments against their rivals who could easily reproduce a developed breed "simply by taking a cutting"[1]. Furthermore, many developing countries have excluded food from patentability until Article 27 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) pronounced that "inventions in all fields of technology [are] patentable subject matter" (Willnegger 2008, 19).

However, today, just four companies, Bayer, DowDupont/Corteva, ChemChina-Syngenta and BASF, control over 60% of the world seed markets (Howard 2015, 2018, 2020; IPES-Food 2017; Hubbard 2019). Throughout the long historical trajectory of the patent system, staple food crops and conventional breeding techniques fundamental for the provision of basic human needs often assumed an exceptional status and were widely exempt from patentability in developed as

[1] Moser and Rhode (2012 cited in Moser 2016, 19) give some examples of the unfamiliar measures taken by plant breeders against the theft of their products that could easily be reproduced: "Stark Brothers Nursery, for example, had built a cage with a burglar alarm to prevent competitors from taking cuttings of their improved Golden Delicious apple".

well as developing countries. However, since the late 1990s, this trend has been reversed. According to the *Future of Seeds and Food* Report (Then and Tippe 2009, 7), while the total seed market value[2] grew from $45 billion in 1996 to $50 billion in 2006, the commercially traded seed market doubled, rising from $15 billion in 1996 to $25 billion in 2004 (Chimmelpfennig and Fernandez-Cornejo 2004) and reaching $30 billion in 2006, suggesting a substantial fall in farmers' reuse of conventional seeds and free exchange of seeds in the last decades. Patents on genetically modified crops and seeds "have grown exponentially to about a 100-fold increment over two decades" following their first launch in 1996. Bayer alone owns over 20 varieties of lettuce, some of which the company has owned for over a decade (Gbadesin et al. 2022; ISAAA 2015).

Today, there are patents for plants with specific traits such as 'brilliant white cauliflower', 'Mexican Enola bean', 'pleasant-tasting melon', 'red lettuce' and 'heat-tolerant broccoli'[3]. Including a detailed list of the variety's traits and characteristics, each patent is nearly 50 pages long (Scotten 2024). By 2009, the Future of Seeds and Food Report (Then and Rippe, 2009) highlighted a growing trend, with nearly 25% of patent applications in 2008 related to conventional breeding methods and products. In 2023, after extensive discussions, the European Patent Office granted two controversial patents on broccoli (EP1069819) and wrinkled tomatoes (EP1211926)[4], both from conventional breeding. These two patent decisions set precedents for the European Patent Convention (EPC), which until then had exempted "essentially biological processes for the production of plants or animals" (Article 53b, EPC)[5] from patent protection.

The unprecedented emergence of patent protection as a fundamental mechanism in the global governance of human security was vividly illustrated during the COVID-19 pandemic when Indian and South African governments' waiver proposal to suspend certain articles of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) for the prevention,

[2] The total seed market encompasses commercially traded seeds (seeds bought and sold in the market) and seeds saved by farmers, exchanged informally, or sourced from other non-market transactions.

[3] Seminist Vegetable Seeds, Inc., Brilliant White Cauliflower. US Patent 8633350 B2, filed Nov 22, 2011, and issued Jan 21, 2014; Proctor, Field Bean Cultivar Named Enola. US Patent 5894079, filed Nov. 15, 1996, and issued by Apr. 13, 1999; Syngenta Participation AG, Melon Plants. US Patent 8829265 B2, filed Aug. 28, 2009, and issued by Sept. 9, 2014. Accessible at https://www.uspto.gov/patents/search

[4] Accessible at https://www.epo.org/en/searching-for-patents/technical/espacenet

[5] Accessible at https://www.epo.org/en/legal/guidelines-epc/2024/g_ii_5_4.html

containment, and treatment of the pandemic until global vaccination was widespread, was rejected by the World Trade Organization (WTO, TRIPS Council on October 20, 2020). In an interview defending his opposition to the waiver proposal, Dr. von Bohlen, the CEO of Molecular Health, stated, "Germany's post-war constitution says that human life is inviolable, I'd say the same about intellectual property" (Scally 2021).

Ascribing an undisputable primacy for patent protection, in a spirit similar to Dr. von Bohlen's statement, had come earlier from Grover Norquist, an organic intellectual of US corporate power, in defense of the intellectual property regime imposed on Iraq as a part of the aggressive neoliberal restructuring of its agriculture under the US occupation, and the looting of Iraq's National Seed Bank (Tzouvala 2017, 9). Commenting on the Coalition Provisional Authority (CPA)'s strategy to grant patents on seeds and other biological materials for the first time in Iraq (Tzouvala 2017), he stated, "the right to trade, property rights, these things are not to be determined by some democratic election" (cited in Brown-Keyder 2007, 155), blatantly advocating for the removal of intellectual property from political liability. Subsequently, "by 2004, intellectual property infringements had already been declared a threat to the US economy and its national security" (Brown-Keyder 2007, 155). The elevation of the protection of intellectual property rights and the authority they confer to patent holders to monopolize the markets to the status of national security could be seen as the pinnacle of the entrenchment of private power in the neoliberal state form and the world order. It is noteworthy that this entrenchment underpins an unprecedented convergence of national security and the hegemonic idea of implementing private property over knowledge as the key to human security.

Reinforced by the institutional support and the universal legal framework provided by the establishment of the World Trade Organization (WTO) following the Uruguay Round of trade negotiations (1986-1994), the global governance of the provision of necessities of life, including food and access to life-saving medicines, has been increasingly underpinned by the "intense traffic between the biological and economic spheres" (Cooper 2008, 4). This was made possible by the global institutionalization of a legal framework for the protection of intellectual property rights through TRIPS as the "first global intellectual property agreement enforced by the WTO" (May and Sell 2006, 18), which unprecedentedly deepened the reach of private property over food, plants, seeds, and genetic resources. As stated in the Preamble of the Agreement, TRIPS generated a multilateral framework for intellectual property rights "to ensure that measures and procedures

to enforce intellectual property rights do not themselves become barriers to legitimate trade"[6] Authored from above by intellectual property lawyers, state bureaucrats, representatives of multinational corporations and global policy elites, TRIPS decisively removed the obstacles to the expansion of the scope of what is patentable and established a harmonized, enforceable minimum intellectual property protection across most of the world (May and Sell 2006, 200) overseen by the WTO.

We must emphasize at the outset, however, that this research is not a legal history or a thorough examination of the intricacies of intellectual property law. Instead, it seeks to analyze the historical social forces (Cox 1981, 1983, 1987) — ideas, institutions and material potentials — involved in the concerted efforts of transnational elites to establish 'legitimate' objects and subjects of private property, and in particular to entrench patents on food crops, seeds, and plant varieties as the 'common sense'[7] of the global governance of social reproduction and its contradictions; that is, the contradictions between capital accumulation and stable, progressive and equitable social/ecological conditions of life-making which feminist historical materialist approaches have documented to be a major axis of contradiction in capitalist societies.

To state briefly for now, social reproduction refers to a wide array of relations and numerous forms of unpaid/underpaid typically gendered and racialized labour necessary for the reproduction of labourers as physical and social beings, healthy communities and ecologies. As feminist scholars have demonstrated economic production and capital accumulation rely on this

[6] TRIPS, Preamble, http://www.wto.org/english/docs_e/legal_e/27-trips_02_e.htm.

[7] Throughout the dissertation, my use of 'common sense' is based on Italian Marxist Antonio Gramsci's (1971) use of the term to denote prevalent ideas, values and worldviews which are widely recognized as self-evident assumptions, 'natural' and ahistorical truths that typically go unchallenged. Despite its seeming neutrality, 'common sense' reflects particular worldviews reflecting the interests of dominant classes and groups widely accepted as beneficial for all. The term is adopted and further developed by neo-Gramscian scholarship, specifically critical political economists (Cox 1981, 1983, 1987; Gill 1986, 1991), to denote the 'common values', frameworks of thought, assumptions and ideas as pivotal social forces shaping world orders, suggesting a more nuanced understanding of hegemonic leadership based on consent *and* coercion. 'Common sense' is central to Gramsci's view of hegemony used by Cox to go beyond understanding power in terms of material resources or asymmetrical coercive power of states. Rather, powerful states contributed to formations of world hegemony, which describes constellations of political order capable of representing themselves as the 'universal interest', gaining consent from subordinate states, classes, and social forces, while still reproducing the particular interests of dominant classes and political forces that hold power (Cox 1981, 141-144).

realm that is systematically damaged, eroded, and at best, rendered invisible, throughout historical capitalism.

Before outlining the content of the chapters of the dissertation, the table below (Figure-1), followed by a brief explanation, presents a schematic overview of the key categories and themes that shape the social forces—specifically the ideas, institutions, and material capabilities—that form the historically rooted patent and human security regimes, as well as their interactions explored throughout the dissertation. While these social forces are distinguished analytically, they coexist, interact with, and transform each other in specific historical contexts. Each historical regime of patents and human security/social reproduction entails a historically specific form and combination of (some) of these social forces informed and shaped by the broad categories.

Table 1: Social Forces: Ideas, Institutions & Material Capabilities

Ideas	*Institutions*	*Material Capabilities*
*Social ontology (Public/private/commons; boundaries between social reproduction/ economy/ polity) *Political Economy * Hunger/ food security * Intellectual property rights/patents * Innovation/Invention * Knowledge (as commodity/as commons) * Public goods	*State-forms (state-society complexes) / world orders * International law * International organizations * Corporations * Food regimes * Welfare institutions/philanthropy	*Relations and forces of production; social/ecological reproduction and subsistence * Primitive accumulation/enclosure and dispossession by law, violence and force * Science/technology * (Bio)patents on plant genetic resources; pharmaceutical patents * Specialized legal and scientific knowledge ("masters of the legal code")

For ***ideas***, that constitute the historically dominant forms of consciousness and actions of groups and individuals, attention will be given to shifting social ontologies[8] and hegemonic frameworks of political economy, such as classical and (neo)classical political economy, and Keynesianism. An example of social ontology is the ontological shift that took place in the nineteenth century as a part of 'the great transformation' (Polanyi 2001) to the market economy. The shift gave rise to the political and intellectual possibility of the emergence of the 'free market' as a self-regulating entity governed by its own laws, entailing a historically unique understanding of 'the economy' as an autonomous institution designating new ideological and institutional boundaries between the state, economy and social reproduction. A more recent example could be found in Margaret Thatcher's (in)famous statement that "*there is no* such thing as *society*. *There* are individual men and women and *there* are families", marking an ontological and epistemic shift in neoliberalism to individuals and families as the primary and *only* constituents of society. Ideas considered in this thesis also relate to shifting discourses of hunger and food security, shifting views about 'legitimate' objects and subjects of private property, and the dominant and competing views about the nature and the scope of patents.

Ideas and their interactions become concretized, stabilized and reproduced in specific ***institutions*** and are in turn shaped and stabilized by them. In terms of institutions, which are pivotal moments in hegemony-making, the research draws on specific state forms that characterize each era, including liberal state form, Keynesian welfare state, and competitive state forms all of which highlight distinct ways of governing the commodification of knowledge, as well as the social and ecological conditions of human security and their contradictions. Insofar as intellectual property law is a part of international law, the latter is another institution of particular importance for our theoretical framework. Each chapter covering different historical periods, starts by framing intellectual property law as a part of international law, as well as domestic laws, in terms of the distinct "multilateralism[s] of intellectual property law" (Okediji 2013) that denote the expansion of the jurisdiction of intellectual property law and the ways by which the developing countries are

[8] For Bakker and Gill (2003, 19) 'social ontology' "is a conceptualization of the primary constituents of social being and therefore involves a specification of the relations between its primary constituent units, elements or constitutive forces". Notably, social ontology refers to historically specific *processes* where human agency is central to the making and "the transformation of dominant and subordinate structures of thought and practice in a given historical period".

integrated into international law. The reach of intellectual property law today is unprecedented; it is almost impossible to find a country without a patent office – Drahos (2010, 2-3)[9] highlights that out of approximately 195 countries existing today, only in less than five of them, such as Timor Leste, one cannot register a patent. Through a critical political economy lens, international law and the multilateral eras of intellectual property are not passive entities but are active forces shaping historical patent regimes and world orders.

Insofar as shifting ***material capabilities*** are concerned, we focus on the relations of production and social/ecological reproduction transformed through the concerted efforts to commodify and financialize knowledge, primarily involving both states and capital. Enclosures by law entail consensual and especially coercive moments involved in shaping patents and human security regimes and they are intertwined with the developments in science and technology, which unfold through the Green Revolution and the BioRevolution which entails not only pathbreaking technological inventions but also political-legal inventions such the (bio)patents on seeds and food crops. The section below offers the outline of the chapters which highlights these social forces and their interactions in the different historical eras.

With this methodological approach in mind, a central argument of the dissertation is that the legal conundrum of the global patent regime is a pivotal, yet less visible, 'new constitutionalist' project specifically pertinent to the neoliberal governance of 'capitalist life-making', more particularly of the provision of necessities fundamental, not only for the reproduction of labour power and communities but also for the creation of new ecologies. It locks in financialized, depoliticized models of human security that deepen the structural power of capital and resist transformative change, generating a deeply precarious form of human security as a permanent condition for impoverished populations in the Global South. As a manifestation of new constitutionalism, the neoliberal patent regime fosters depoliticization (Burnham 2001, 2014) within social reproduction. The 'technological fix' of what I call the plants of market civilization resistant to change and dependent on the complex legal-constitutional patent regime is the 'solution' the neoliberal patent regime offers as a crisis response for the social-ecological contradictions of capitalism, suggesting a human security regime that is difficult to challenge and

[9] Even Kiribati – a Pacific island that is less than two meters above the sea level faced with the high risk of remaining under water – has a patent office with around twenty pharmaceutical patents are registered. (Drahos 2010, 1)

transform, and systematically insulated from democratic accountability and popular contestation from below.

Another central claim is that the *longue durée of* the governance of social reproduction, in particular human security, in capitalism has been shaped by the enduring logic of depoliticizing subsistence issues. This has unfolded in various ways throughout the periods of capitalism examined in the dissertation. The *longue durée* historical approach showed the enduring legacy of new constitutionalism throughout the different historical regimes of patents and human security, and their relations, reinforced by the ideas and institutions that relegate subsistence and the contradictions of social reproduction to 'the economy', to international regimes and institutions and/or to philanthropy. Thus, this work analyzes some of the longer history of the global governance of patents and human security and the historical regimes of human security and patents. Following the presentation of the theoretical framework of the dissertation in Chapter 2, other chapters undertake an analysis of historical periods. Chapters 5 and 6 together focus more thoroughly on the neoliberal era. Chapter 7 offers a concise conclusion to the dissertation.

Outline of the Argument and the Chapters of the Dissertation

As we shall elaborate in the following chapter, a *longue durée* perspective of the trajectories of intellectual property and human security regimes in tandem will enable an in-depth exploration of the deep-seated continuities and change in these regimes and their intricate relationships. Starting with the nineteenth century, intellectual property regimes have generated distinct forms of structural inequalities and hierarchies within and between states. Contemporary structural inequalities and the discourse of innovation and technological investment as the exclusive panacea for world hunger and human security today are largely rooted in the international legal regimes, the imperial/colonial expansion and the hegemonic framework of thought of nineteenth-century liberal governance. Thus, as stated in Chapter 1, this research seeks to make a novel contribution to the (feminist) historical materialist lens of social reproduction, critical global political economy, the literature on 'new constitutionalism' and the 'human security' literature which is typically treated as a phenomenon independent of the dynamics of global political economy.

Chapter 2

This chapter fleshes out my integrated theoretical approach, grounded in the historical materialist approach, which merges insights from various critical perspectives on global political economy, international law, and global governance. As aforementioned, the first one is Cox's critical methodology of historical structures based on neo-Gramscian political economy which explores (shifting) historical structures in terms of the interplay between social forces of ideas, institutions, and material potentials (Cox 1987, 1996). The framework also incorporates a feminist historical materialist lens on social reproduction, Gill's concept of 'new constitutionalism' (Gill 1998; Gill and Cutler, 2014), and the critical international law idea of the 'commodity form of law' (Pashukanis 1978; Miéville 2004; Knox 2009; Cutler 2014, 2018). These are situated in Braudel's *longue durée* analysis. We must emphasize here the importance of Braudel's long historical approach for our argument and address how a *longue durée* perspective underpinned by a historical materialist framework, rather than an exclusive focus on the present conjuncture, contributes to our discussion.

Braudel (1980) distinguishes three distinct temporalities - "speeds" of historical time. These are individual or journalistic time (*l'histoire événementielle*), which focuses on short-term events that change daily and are typically the focus of political history; conjunctural time, which looks at medium-term economic and social cycles that last for decades (*l'histoire conjoncturelle);* and long-term historical patterns that often span centuries, representing enduring structures that "stand as limits…beyond which man and his experience cannot go" *(la longue durée)* (Braudel 1980, 27-31). This complex historiography respectively corresponds to "material civilization/market economy/ capitalism" having different temporalities, representing different rhythms of life, and paces of change/transformations that are interdependent and overlap. By distinguishing between these temporalities, his analysis aims to shift historical inquiry away from event-driven approaches toward the study of long-term patterns of continuity and change. Briefly, the long historical approach of the dissertation enables us to rethink the emergence of the neoliberal patent regime as a key governance mechanism of human security and the persistent patterns of insecurities in terms of the deep-seated social reproduction contradictions of capitalism that unfold in different ways in the different historical periods of capitalism, the enduring political consensus

around how to best address them and persistent ideas and frameworks of thought – such as the 'liberal utopia' of the nineteenth century – that uphold this consensus over centuries.

Chapter 3

This chapter starts with nineteenth-century competitive liberal capitalism which sees the making of a "new legal geography of free trade" (Rioux 2017, 722) and the first concerted attempts towards forging an international intellectual property regime. It is necessary to note at this juncture that the patent regime of the nineteenth century was not as important as it was in later periods for setting the parameters of human security, largely due to the lack of material capabilities, such as the biotechnologies that facilitate the commercialization of food systems in the subsequent eras. However, despite the weak association between the two regimes in this respect**,** basic ideas and institutions underpinning these regimes were formed through the contested process of establishing the hegemonic framework of nineteenth-century liberal governance. This process involved controversies over the meaning and scope of free trade and the free market. As such, the nineteenth-century patent regime is particularly important as it sets the ideas and institutional orders that still sustain and reproduce the hierarchal predicament of human insecurity in the current conjuncture.

Thus, it is key for highlighting how the contemporary regime of intellectual property pivots on the promotion of innovation which is deeply entrenched in the nineteenth-century neocolonial discourses of improvement/progress and the first concerted attempts of the imperialist social-political forces and industrially advanced states to institutionalize universal patent protection. While the discourse of improvement in the nineteenth century provided the ideological underpinnings of the expropriation of land during the enclosures in Britain and the dispossession of the indigenous communities in the colonies, the analogous ideas of innovation and the myth-maker inventor (May and Sell 2006) operated in the promotion of knowledge as an exclusive object of private property within and across jurisdictions.

The major ideas and institutions delineated throughout the chapter involve the following: The shift from patents as 'evil monopolies' to 'natural right' as the common sense of 'patents'; the emerging consensus that knowledge is a legitimate object of private property, thus the shift from knowledge as commons to knowledge as a scarce good; and the deeply contested compatibility of free trade and the free market with patents. The chapter also suggested that the making of the

neoliberal patent regime was a transnational elite project. The human security regime unfolding through the historical structures of nineteenth-century capitalism oscillated between 'blaming the poor' and linking them to 'external factors' that cannot be adequately addressed by political power. Hunger was mostly treated as a moral issue or an 'economic' one to be dealt with by market-based solutions or by charity. A major institutional shift of this era was the legal invention of the corporation as a legal subject, a bearer of rights on a par with the 'abstract individual' of the nineteenth-century social ontology. This was a breakthrough with immense material, institutional and ideological consequences for today.

Chapter 4

This chapter spans the 'second multilateralism' (1945-1980s) in intellectual property law. Through the lens of critical political economy and international law, the patent regime of the postwar era marks an important first step in the globalization of the 'commodity form of law'. However, its role as a commodity form of law is constrained and influenced by the broader historical frameworks of state-managed capitalism and Keynesian welfare states in the Global North, as well as by the contradictions inherent in social reproduction under capitalism and the need to regulate them. The globalization of the patent regime as the 'commodity form of international law' will be consolidated in the next phase of neoliberalism to be discussed in Chapters 5 and 6. I focus mainly on the Green Revolution and the 'postwar food regime', particularly the US-led Food Aid as entry points to examine the shifting ideas about the nature of hunger and food security, the best ways to address them and the gradual emergence of patent protection and innovation as the common sense of the global governance of food security.

The prevalent ideas and institutions in this chapter can be summarized as follows. The emergence of the Keynesian welfare state became widely accepted as part of a new common sense, which suggested that state regulation could and should coexist with market mechanisms. This shift led to a rethinking of intellectual property, moving beyond the concept of private rights to include considerations of public goods. As a result, the postwar intellectual property regime was not merely an extension of global capitalist interests but a negotiation between corporate power, state interventions, and the protection of public goods. The contradictions embedded in this negotiation—particularly the tension between commodifying knowledge and ensuring access to essential goods—continue to influence global intellectual debates today.

The postwar patent regime was shaped around competing ideas – on the one hand, promoting patent protection as the common sense of human security and on the other the patent regime was shaped by the need to regulate corporate power, which had eventually led to the breakdown of the liberal order and social reproduction during the interwar period. Thus, there was a shift back from the idea of patents as natural rights to 'patents as monopolies', especially for pharmaceutical patents. Yet a new front opened up in defense of patents over plant genetic resources with the Green Revolution and was countered by the counterhegemonic manoeuvre by the Global South countries to challenge the legal form of 'patents' with the 'common heritage principle' reinforced by the understanding of plant genetic resources, i.e. seeds, as commons or public goods.

In this era, hunger/food insecurity was discovered as a geopolitical idea. Despite its centrality in the global political agenda, the debates around the competing proposals for the founding vision of the Food and Agriculture Organization suggest the orientation towards a depoliticized view of hunger to be addressed by 'liberal cooperation' and market-based approaches instead of Orr's social justice-oriented vision for a 'new gold standard of health'[10]. This view of hunger aligns with the orientation of the Green Revolution towards a technological fix rather than addressing structural issues such as land distribution.

Chapters 5 and 6, and my brief conclusion in Chapter 7

Together, these chapters analyze the unprecedented emergence and consolidation of the neoliberal regime as a key governance mechanism of human security. The central argument of these chapters is that the neoliberal patent regime is a new constitutionalist mechanism that locks in a financialized, depoliticized and deeply precarious form of human security, which becomes a permanent condition for impoverished populations in the Global South.

Chapter 5 analyzes some key US Supreme Court decisions as moments of this new constitutionalist process, which then culminated in the major institutions underpinning the patent and human security regimes – namely, the TRIPS Agreement, the Agreement on Agriculture (AOA) and the WTO. The US Supreme Court decisions all relied on an ontological denial of the public domain or a public good. The neoliberal patent regime and the neoliberal governance of

[10] The 'new gold standard of health' (Daunton 2019, 162) refers to an internationalist vision proposed by John Boyd Orr in the aftermath of World War II as the founding principle of the Food and Agriculture Organization.

human security reflect the emergence of 'market civilization' (Gill 1995) as the new common sense. This is most explicit in the production of plants of market civilization produced by patented seeds, food crops and breeding techniques. A new common sense involving the view of the private sector as being inherently innovative and in need of a global patent regime emerges. This entails dismantling public infrastructure or private appropriation of public knowledge of the earlier eras. Concomitantly, there was a growing consensus around food security as a function of economic growth detached from politics. In this context, the earlier hegemonic view of food security as self-sufficiency was strongly opposed by the ruling and global policy elites and replaced by free trade as a panacea for food security. As noted at the beginning of this section, the *longue durée* historical approach suggests the enduring depoliticizing logic of new constitutionalism unfolding throughout the different eras of capitalism.

In sum, this study analyzes the contemporary hegemony of intellectual property rights in capitalism through a historical materialist framework, which situates them within the trajectory of the different regimes of accumulation.[11] It seeks to trace the contested advent and the shifting logic of intellectual property regimes as pivotal components of global governance by specifically underscoring a relatively less acknowledged problem - that is, how they have been implicated gradually not only in the organization of production and capital accumulation but also in forging historically distinct organizations of basic need provisions, forms of subsistence– more precisely, what I frame throughout the dissertation as human security regimes that reorder the conditions of survival in different ways in the historical trajectory of capitalism.

[11] As we elaborate in Chapter 2, the dissertation builds upon Fraser's (2016) periodization of historical regimes of 'reproduction-cum-production' in the distinct regimes of capitalist accumulation (19th-century liberal competitive capitalism, state-managed capitalism, globalizing financialized capitalism).

CHAPTER 2

THEORETICAL FRAMEWORK

As I pointed out in the introduction to this thesis, our principal object of study is the contemporary question of human security regimes, and how patterns of human security are being increasingly shaped by the socio-legal measures associated with intellectual property and patent rights, locked in by new constitutional legal and governance frameworks.

However, my intention is to produce a critical perspective that can explain how the historical structures which have shaped and are being transformed by these legal and political innovations in the human security regime are connected to health and nutrition in the global political economy. This is in contrast to most of the mainstream literature which takes a more descriptive and technically neutral approach to patents and multilateral and national regulations governing intellectual property rights**.**

In the dissertation, 'human security regime' broadly refers to the historically specific organization and governance of subsistence and basic need provision in capitalist societies. They are connected to not only regimes of capital accumulation, which are the conventional focus of Marxist political economy, but also to what Fraser (2016) calls historical regimes of 'social reproduction-cum-economic production'. As such, human security regimes express the social reproductive contradictions, particularly pertinent to the provision of basic needs of subsistence, thus the production of human and nonhuman life**.** These have formed as a part of distinct regimes of capitalist accumulation such as 19th-century liberal competitive capitalism, post-World War II "mixed" or state-managed capitalism, and market-oriented disciplinary neoliberal financialized capitalism. Put differently, a critical theoretical perspective therefore seeks to show the forces that are associated with the ways that have (re)shaped regimes of human security and human well-being in different periods or what Braudel (1980) called "conjunctures" of capitalism, and to situate human security regimes as the locus of the social reproduction contradictions of capitalism.

To deal with this issue, the thesis deploys a critical integrated historical materialist method that can connect law, and intellectual property rights and patents, in the context of social reproduction. This can help show key forces shaping health and livelihood, as well as provisioning

and nutrition that have increasingly configured the processes and structures of the global political economy in ways that have had significant impact on human security.

What therefore is pivotal in this approach is the significance of social reproduction, largely ignored in conventional orthodox Marxist theory, in the constitution of the conditions of existence and therefore of human security. Put differently, the issue is how the expansion of patents to food and health over different epochs, shapes the basic means of subsistence and livelihood, such that new human security regimes are forged, reconstituted and redefined as historical structures of capitalism. The following sections will now draw upon the analytical pillars of the theoretical framework of my approach to human security regimes and state the merits of this framework for the key issues explored in this dissertation.

Gramscian historical materialism

First, the neo-Gramscian historical materialist framework, particularly his theory of hegemony, and Cox's methodology of historical structures and world orders sought to move beyond the ahistorical categories and essentialized binaries that underpin the liberal and realist approaches in the study of international relations and early studies of international political economy, such as the state and civil society, public and private, domestic and international, and the 'political' and the 'economic'. As Cutler (2018, 61) claims, intellectual property has been a pivotal component of the 'transnational legal order'[12] of globalized capitalism that "relocates the boundary between private and public authority". It is possible to extend Cutler's observation to highlight the redefinitions between forms of production and social reproduction. Through this lens, intellectual property regimes play pivotal roles in redrawing these deeply contested boundaries and redefining the complex relationships between these realms in distinct historical eras of capitalism.

Secondly, the neo-Gramscian historical materialist ontology of relations of forces, and Cox's methodology of historical structures helps capture how the patterns of reconfiguring these boundaries also have far-reaching implications for world orders. Building upon Braudel, Cox's understanding of a 'historical structure' formulated as a 'framework of action' refers to a particular configuration of forces formed by collective human action over time that imposes constraints and pressures (Cox 1981, 135) on thought and action that individuals and groups may align with or

[12] See Chapter 5 of the dissertation for Cutler's definition of a 'transnational legal order'.

resist and oppose but cannot ignore. The dissertation highlights that the sphere of social reproduction formulated by feminist political economists as a distinct and irreducible sphere that shapes and is shaped by the social forces, historical state forms[13] and world orders, is nonetheless overlooked by many critical scholars, notably also in Cox's historical materialist framework.

As a third point, the Gramscian historical materialist lens facilitates understanding the constitutive and hegemonic role of law, legal structures, particularly intellectual property law in the global political economy and the ways it shapes social reproduction. Unlike liberal approaches that perceive law as a coherent set of rational, impartial codes as well as orthodox Marxist approaches premised on a divide between the base and the superstructure that tend to view legal structures as epiphenomenal components of the superstructure with peripheral, regulatory roles in global governance, this theoretical lens highlights law as a "historically effective material and ideological force" (Cutler 2003, 61; Pashukanis 1978; Miéville 2004; Knox 2009) in "encoding knowledge as capital" (Pistor 2019), and in empire-building (Oddi 1987; Okediji 2003; Pistor 2019). We must note here the parallel with some critical approaches to international law that propose to shift attention to the 'legal form' of international law and its historical emergence, which are also different from most Marxist perspectives that tend to see the law merely as an ideological fiction with limited or no autonomy. Miéville (2004, 280) notes that such Marxist approaches similarly fail to give a "sense of *why* this 'idea' of international law should have arisen at a certain time and political-economic context". Not denying law's ideological function, they further recognize its ontological-political significance by building on Pashukanis' (1978) view that "its objective reality [embodied in an array of institutions] … impinges on and regulates everyday life at all levels" (Miéville 2004, 280), suggesting compatibility with the Gramscian historical materialist framework.

As such, the Gramscian historical materialist lens seeks to make visible the silent roles that the "legal coding of knowledge as capital" (Pistor 2019) through intellectual property regimes play in shaping the conditions of the (re)production of human and nonhuman life from above, their often-obscured roles in generating patterns of human (in)security concerning the provision of

[13] Going beyond liberal and realist approaches in the study of international relations, Cox (1981) conceptualizes states not as static actors defined outside the boundaries of the civil society, but rather as dynamic, historically specific 'state-society complexes' shaped in conjunction with social forces and world orders.

fundamental necessities such as food and access to basic health, thus the deeply unequal and precarious human security regimes and hierarchies of immunity they forge across and among the poor of the Global North and the South.

As noted in Chapter 1, the dissertation unpacks the nature and the historical development of intellectual property and human security in tandem by deploying Cox's methodology of historical structures. This implies seeking to develop a critical historical understanding of intellectual property regimes in terms of the relationships between ideational, institutional, and material social forces. The subsequent theoretical step is the application of this methodology to the different levels or spheres of activity. For Cox, they involve social forces, or in his terms the 'organization of production', forms of state that derive from the study of "state/society complexes", and world orders. As noted above, following Bakker and Gill (2003) this study proposes to broaden the historical materialist ontology of historical structures by introducing social reproduction as a distinct sphere of activity that dialectically interacts with the other spheres. This theoretical gesture is pivotal to capturing the increasing "realignment of human, animal and bacterial life to facilitate the reproduction of capital" (Nally 2011, 48) consolidating the security of capital in a way that systematically undermines basic human security.

Intellectual property and human security regimes: Material capabilities, institutions and ideas

Theorizing intellectual property through the lens of historical structures offers a viable alternative to conventional approaches that treat intellectual property rights as formal legal instruments with regulatory functions predicated on the liberal separations uncritically assumed neutral, ahistorical, and apolitical. This approach is also congruent with the works of critical theorists of intellectual property, who argue that we cannot separate the historical trajectories of intellectual property from the history of capitalism and that their early development is underpinned by the alignment of social and political forces in the historical conjuncture of nascent capitalism in Europe (May 2007; May and Sell 2006). Challenging private property rights as a set of objectively defined universal rights often cast as the right to property over the products of one's labour or as the key incentive that compensates the invention at its full social value without which there would no innovation (Trebilcock and Howse 1995, 250; Vandoren 2002, 7), Cox's approach in terms of historical structures alternatively enables recasting them as deeply contested political regimes.

The vast importance of Cox's distinction between problem-solving theory and critical theory becomes more apparent at this point. Expressed by his well-known remark that "theory is always for someone, and for some purpose" (1981, 28), Cox's critical framework allows us to challenge the hegemonic understandings of intellectual property as the unmatched incentive for innovation or the uncontestable right of the inventor (or the corporation that owns the invention), and to rethink their historical roots and roles in the construction of hierarchal world orders, raising questions such as innovation for who and towards what. The exploration of intellectual property regimes through the lens of social forces aims to transcend the confines of a state-centric perspective. This approach reveals the intricate interplay among diverse forces, their dynamic interactions, and the various forms of power that emerge from these relationships. It also highlights the inherent contradictions that arise within specific historical contexts, providing a deeper understanding of the complexities at play.

In the dissertation, material capabilities refer to the productive forces and technologies linked to the legal inventions or 'legal coups' (Weiss 2007), reflecting the forms of power rooted in and accumulated through the ownership of knowledge. The second set of forces refers to ideas that Cox analyzes as two kinds. Historically conditioned intersubjective meanings are those "shared notions of the nature of social relations which tend to perpetuate habits and expectations of behaviour" (1996, 98), and they are persistent components of historical structures. Rather than taking them for granted, "[i]t is possible to trace the origins of such ideas and also to detect any signs of weakening of some of them" (1996, 98). As such, they are historical *a priori* constitutive of the logic of the global governance and political economy of intellectual property in each period, that come to be perceived as uncontestable axioms of the hegemonic order. As exemplified in the narratives of innovation and improvement analyzed in the dissertation, they are acknowledged as uncontested constants valuable as ends-in-themselves and they play a legitimizing role for the extension of private property to immaterial objects and more recently to the "substance of life" (Polanyi 2001) including human genes, seeds and plants.

Secondly, ideas also include competing "images of social order" that involve differing views about both "the nature and the legitimacy of prevailing power relations, the meanings of justice and public good" (Cox 1996, 98). A disjuncture between these two kinds of ideas can be a source of structural change (Cox 1981, 136). The controversies analyzed in the dissertation such as the 'nineteenth-century patent controversy' reflect the contestations around a set of hegemonic

ideas which “give strategic direction and coherence” to the different forces to politically organize themselves in the emerging ‘historical bloc’ (Gill 2008, 60).

Finally, the third set of forces that interact in an historical structure, is institutions. They are “particular amalgams of ideas and material power which in turn influence the development of ideas and material capabilities” (Cox 1981, 137). Institutionalization tends to stabilize and reproduce the prevalent order and set the terms of contestation as to what could be legitimately challenged and/or what comes to pass as the natural course of events. As Cox (1981, 137) put it, providing ways of dealing with conflicts, institutionalization is closely linked to Gramsci’s notion of hegemony as it is often invested in (re)building and sustaining consensus over time. Institutions “may also acquire a degree of autonomy, take on their own lives and serve as agents of change. They may also become the battlefield for opposing tendencies” (Cox 1981, 137; Cox and Sinclair 1996) Hegemonic and non-hegemonic structures can be distinguished. The former is characterized in terms of the extent to which common sense and consensus-building are forged so that “the weak accept the prevailing power relations as legitimate” (Cox 1981, 137) as coercion is always latent, whereas a non-hegemonic structure is exclusively characterized by explicit domination and coercive power, where the strong see their mission as dominant and based on force. Exploring whether and the extent to which intellectual property regimes – more specifically patents on basic food crops and medicines - could forge a “common sense” in the world order and become hegemonic in specific conjunctures will be central for theorizing intellectual property regimes in the historical chapters of this work.

In an insightful analysis of the global knowledge economy, Muzaka (2018, 38) particularly analyzes “the role of the state in shaping this institutional form [of intellectual property] in the case of two key life science sectors, pharmaceuticals and agro-biotech”. Muzaka (2018, 5) stresses the significance of understanding intellectual property as an “institutional form” rather than a set of rights, opposing the prevalent tendency to articulate them in terms of the language of rights, which “naturalizes the many problematic aspects of this institution”. The liberal language of rights, Muzaka (2018) writes, tends to naturalize the political and deeply contested expansion and deepening of intellectual property.

Thus, we maintain that institutional forms cannot be insulated from the ideational, discursive components of a regime. Having convincing ideas and arguments that mobilize and consolidate social and political networks is as fundamental as having material power within the

civil society and economy. Instead, persuasive ideas and arguments are pivotal moments in the process of hegemony building, facilitating deeply contentious regimes to be implemented as if they are universal truths and ahistorical outgrowths of the development of technologies or a product of a naturalized international division of labour that obscures their historically contingent nature. Institutions are also sites of contestation and struggle between different social forces, thus building counter-hegemonies should be invested in strategies and tactics that cultivate and mobilize alternative conceptions of institutional orders and seek to transform how the masses conceive of the limits of possible change.

Social reproduction and human security: A missing link in the framework of historical structures

Despite its broad ontology, the framework of historical structures fails to consider what socialist feminist scholarship understands as 'social reproduction'—that is, an irreducible and distinct sphere of activity whose forces and processes dynamically interact, shape and are in turn shaped by the organization of production, state forms and world-orders. Building upon the earlier works of Marxist feminists, feminist political economy literature uses 'social reproduction' to refer to the activities, and forms of labour including care, and relationships "directly involved in the maintenance of life on a daily basis, and intergenerationally including how food, clothing, and shelter are made available for immediate consumption" (Laslett and Brenner 1989, 382) and the sustenance of communities[14].

They have convincingly revealed the complex and often contradictory interactions between the organization of production and the spheres of social reproduction that comprise waged, unwaged, often unpaid, underpaid and informal forms of labour that are typically gendered and racialized. The production of commodities and capital accumulation necessarily rely on the forces of social reproduction, which as feminist scholars argue, produce labourers as physical and social beings, and livelihoods, while paradoxically deteriorating and destabilizing the conditions of social

[14] Early Marxist feminist literature and the renewed interest in social reproduction feminism in the last decades share the premise that labour power is a unique [embodied] commodity (Dalla Costa and James 1975; Bhattacharya 2017; Mezzadri 2019), whose conditions of (re)production and their contradictions are systematically undermined in capitalist societies. Going beyond the focus of the early feminist scholarship on the household, contemporary scholars offer a broader social ontology by including "life-making/sustaining processes, including the condition of bodies (their health, nutritional intake, etc.) and the biosphere" (Gill and Bakker 2003), suggesting ecological conditions of existence (Foley 2019) and 'corporeal contradictions' (Rioux 2015) as a part of the social reproduction framework.

reproduction they rely on. From the perspective of the feminist political economy then "societal reproduction includes not only the organization of production but the organization of social reproduction and the perpetuation of gender as well as class relations" (Laslett and Brenner 1989, 383). Notably, the dynamics of social reproduction are intertwined with and directly implicated in shaping capitalist societies, forging world orders and state forms with distinct hierarchies, inequalities and gendered and racialized forms of exploitation, dispossession and dominations. As such the "organization of gender relations and social reproduction crucially shaped macro-historical processes, as well as being shaped by them" (Laslett and Brenner 1989, 381).

Drawing on the limitations of the method of historical structures, Sinclair (2018) duly points out the neglect of gender in Cox's schema. In *Power, Production and Social Reproduction: Human In/security in the Global Political Economy,* Bakker and Gill (2003) similarly draw on the overlooked centrality of social reproduction in Cox's neo-Gramscian framework and incorporate social reproduction as a central component of global political economy, intertwined with power and production. Integrating social reproduction as a distinct sphere and level of activity implies gender and racialized relations as social forces on a par with and in interaction with the class, and it broadens the ontology of material capabilities to include forces of social reproduction. For this research, this theoretical intervention merits an ontologically and politically solid ground to explore the deepening role of intellectual property, more specifically of patents, on the global governance of social reproduction and their deepening impacts on human security.

Human security regimes in the historical trajectory of capitalism

Social reproduction feminists underscore that the capitalist organization of social reproduction has undergone major shifts in the historical trajectory of capitalism (Picchio 1992; Katz 2001; Bakker 2003, 2007; Fraser 2014, 2016, 2017; Bhattacharya 2017). According to Fraser's thorough analysis, capitalist regimes of accumulation depend on a regime of social reproduction with an institutional structure that organizes historically specific separations such as those between production and social reproduction, public and private, economy and polity, work and family. Each regime of social reproduction and human security produces and is underpinned by the ideals and imaginaries of domesticity, femininity/masculinity and gender roles that help sustain the institutional structure that is governed and shaped through laws, policies and fundamentally by the social struggles that, according to Fraser, aims to redraw the boundaries that are ideologically

presented as naturalized, ahistorical and apolitical fixed separations. "Boundary struggles", Fraser (2016, 25) concedes, while distinct from class struggles, are equally central to capitalist societies leading to epochal shifts—such as the 'great transformation' to the market economy narrated by Polanyi (2001)—that involve redrawing these boundaries with immense political, social and cultural implications. Social reproductive conditions of capitalist production, Fraser (2016) writes, have taken different institutional forms and embodied different normative orders in the historical trajectory of capitalism[15], further adding that "in each regime, the social contradiction of capitalism assumes a different guise and found expression in a different set of crisis phenomena".

Contemporary feminist scholars' insights on the social reproductive contradictions of capitalism (Bakker 2003, 2007; Bhattacharya 2017; Fraser 2014, 2016, 2017, Katz 2001; Picchio 1992; Bakker and Gill 2019) and Fraser's (2016) theorization of "historical regimes of reproduction-cum-production" are therefore notably useful in facilitating a more rigorous, broader and historicized understanding of human (in)security as a component of the distinct regimes of accumulation and enables us to map the contours of historically specific insecurities, for example, food insecurity and the struggles around the basic means of subsistence in the *longue durée* of capitalism. This theoretical gesture also allows situating the racialized and gendered dimensions of human insecurities within and across states as a pivotal component of social reproduction regimes, revealing what we could call the intergenerational hierarchies of immunity and survival within and across boundaries, closely associated with the 'gender orders' (Bakker 2003, 2007, 2011) of social reproduction.

Food security and basic health are indeed fundamental components of social reproduction and human security. Food, more precisely the variegated relations in which it is produced, distributed and consumed, is central to all the distinct yet interrelated aspects of social reproduction examined above – briefly, the biological reproduction of the species, the reproduction of the labour force and the reproduction and provisioning of caring needs. Moreover, as a basic need for survival, "all patterns of social reproduction [in spite of their variegations] involve food" and indeed are fundamental for human security (Bakker and Gill, 2019): human beings need food at a fundamental material-biological level. The critical yet relatively underexamined importance of

[15] For instance, "the social reproduction regime of the nineteenth-century liberal competitive capitalism" leaves the workers' sustenance to themselves and their families, suggesting 'economic production' and 'social reproduction' as entirely separate realms where the latter, often institutionalized as the private family, is underpinned by the bourgeois imaginaries and ideas of domesticity and femininity (Fraser 2016).

food relations for social reproduction is also reflected in the fact that "a crisis of reproduction may well consist in a "sudden loss of one's entitlements to food and/or the means of subsistence" (Caffentzis 2003, 2). Fraser (2016) underscores that "in each regime, the social contradiction of capitalist society has assumed a different guise and found expression in a different set of crisis phenomena".

With this in mind, this thesis advances the hypothesis that in the neoliberal regime of accumulation social contradictions increasingly find expression in the deep insecurity of access to the basic means of subsistence such as food and health. Arguably, what is more easily rendered invisible, more easily de-politicized and taken for granted are the sets of crises that concern the provision of basic needs including the struggles to secure the basic means of subsistence such as food security, and the protests against the price spikes of necessities such as bread which indeed span the *longue durée of* capitalism.

In his critical analysis of the 'food riots' that predominated "the age of the wheat loaf" (1770-1870)[16], E.P. Thompson (1971, 79) draws attention to the burgeoning discourse of the political economy that swiftly portrayed them as the apolitical "riots of the belly" that manifest a "spasmodic, irrational response to hunger" led by a group of the mob, which Thompson (1971, 136) underscores, was itself "a product of a political economy which diminished human reciprocities to the wages-nexus". This discursive framework obscured that the conflicts such as the one "between the countryside and the town were mediated by the price of bread" (1971, 79) and that the 'bread nexus' in the eighteenth century was inextricably linked to the emergence of the 'cash- nexus' of the industrial revolution. The term 'riot' was deployed to delegitimize the protests and trivialize them as those 'of the belly' with no substantial political significance. Additionally, since the demonstrations were mobilized by the increase in bread prices and often led by women, they were also not directly associated with the prevalent class conflicts of the nineteenth century.

More than a century later, the mainstream media portrayed the wave of protests against the spikes in basic food prices in the Middle Eastern and North African (MENA) countries, especially Egypt, Syria and Morocco during the Spring 2011[17] in a similar way that tends to

[16] The period 1770-1870 is described in these terms to highlight the centrality of bread in Britain's economic history (Christian Petersen 1995 cited in Pickering and Tyrrell 2000, 9).

[17] Scholars and policymakers have widely explored the effects of high-sky food prices and the region's dependence on grain import on the eruption of what is known as the Arab Spring. See Soffiantini (2020);

undermine the political status of food and how the relations and the political economy of food are underpinned by the presumably natural and fixed separations such those between economic and political, social and political, private and public, and production and social reproduction. For instance, evoking the popular rage during Spring 2011, the Middle East Monitor cautiously remarks on potential uprisings in Egypt, which may again be triggered by rising bread prices: "This time it could be the poor rising in a bread uprising rather than a political movement" (Gaweesh 2022). Given the long historical trajectory of the uprisings around the basic means of subsistence, which is nonetheless beyond the limits of our analysis, it is important to explicitly raise the issue of basic needs provision and examine the contemporary emergence of the new threats to basic human security as well as the struggles against them through the lens of social reproduction.

Moreover, introducing human security regimes through the feminist social reproduction lens potentially reveals that in addition to generating the ideals and imaginaries of domesticity, femininity, masculinity, and the family as feminist scholars duly argue, the historical regimes of 'reproduction-cum-production' are also shaped by and in turn shape the meanings of hunger, the imaginaries of the poor and the underfed, the politics of food aid and the institutionalization of charity and philanthropy that tend to obscure food as a deeply political relation.

New constitutionalism and the neoliberal human security regime

The dissertation analyzes the neoliberal intellectual property regime as the key juridical-political mechanism and a central component of the knowledge structure that links the two key components of human (in)security[18], i.e., basic health and food (in)security, and how that consequently underpins the neoliberal restructuring of social reproduction and its global governance. So, what are the key legal and economic mechanisms propelling these new patterns of human insecurity? And how does the prevailing patent regime inscribe these patterns into law and social practice?

One key example is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which came into effect in 1995 to initiate the global harmonization and the

Breisinger et al. (2011); African Development Bank (2012). Commenting on this point, Krugman (2011) pointed out that "[t]he big question about uprisings against corrupt and oppressive regimes in the Middle East isn't so much why they're happening as why they're happening now. And there's little question that sky-high food prices have been an important trigger for popular rage".

[18] These two do not exhaust the scope of basic needs central to the human security regime, which also include physiological needs such as shelter, and water fundamental for survival.

universal enforcement of intellectual property rights. It is recognized as the most comprehensive development in Intellectual Property legislation in the 20th century and "will no doubt shape the terms of global movements and struggles around drugs, epidemics, and health for many decades to come" (Cooper 2008, 55). The Agreement binds all the members of the WTO and extends to all forms of Intellectual Property – patents, copyrights, trademarks, and recent innovations in intellectual property law including biological inventions. Cooper (2008, 55) notes that "for a piece of legislation with such far-reaching implications for the health and survival of whole populations, the TRIPs agreement was passed and signed with remarkably little controversy by the member states of the newly formed World Trade Organization in 1996".

The agreement facilitated an unprecedented extension and deepening of private property rights to food, plants, seeds, genetic resources and bodily parts and organs. As such, the TRIPS agreement marks a critical moment in the neoliberal restructuring of social reproduction and the making of a neoliberal human security regime. As it has become blatantly evident, especially during the AIDS/ HIV pandemic, "WTO's new patent laws, and the pricing strategy of the US and European conglomerates in tandem with the debt servitude have had devastating effects on the life chances of whole populations" (Cooper 2008, 12) and that patents have proved to convey "immense power to mediate between life and death".

To make further sense of this, this dissertation problematizes the neoliberal processes of intellectual property regimes by adopting the concept of 'new constitutionalism' and explores the political implications of recasting the deepening of patents over basic food crops and basic life-saving medicine as a new constitutional project for the governance of human security. Rather than a completed, coherent and uncontested project, new constitutionalism is an ongoing fragmented project contested from below. The "new constitutionalism of disciplinary neoliberalism" (Gill 1998; 2017) denotes the concerted efforts of transnational elites to separate the 'economic' and the 'political', thereby insulating the former from democratic contestation through diverse legal-juridical instruments. The dissertation reorients focus on the other deeply contested institutional boundaries - such as those between social reproduction and production, and social reproduction and the political - that underpin the institutional structures of neoliberal societies:

How does new constitutionalism as a world-order project bear upon the reconfiguration of not only the 'economic' and the 'political', but also the political and social reproduction as well as production and social reproduction? Examining the expansion of patents on basic food crops and

basic medicines through the lens of new constitutionalism, the dissertation explores the implications for the global governance of social reproduction and human security. Chapters 4 and 5 recast this relatively overlooked aspect of the new constitutional project as a distinctive feature of the neoliberal regime of accumulation and explore its implications for the possibility of forging a hegemonic intellectual property regime.

Finally, I also draw on Burnham's view of depoliticization to describe the enduring logic of new constitutionalism in the historical trajectory of the governance of social reproduction and human security and highlight that its core logic is not limited to the neoliberal era. According to Burnham (2001, 128), depoliticization is a governance strategy used by policymakers in capitalist states that aims to "distort" the political nature of decision-making. Notably, Burnham (2014) notes that forms of depoliticization tend to take the form of 'international regimes', which the intellectual property regime is indeed a good example of.

CHAPTER 3

BUILDING A UNIVERSAL PATENT REGIME AND GOVERNING HUMAN SECURITY IN THE NINETEENTH CENTURY

Introduction

This chapter explores conditions in the nineteenth century related to hunger and malnutrition and their relationship to human security, particularly in Britain and in the "settler colonial food regime" of the nineteenth century[19] (Friedmann 2005, 2005a; McMichael 2013). The second section of the chapter deals with multilateralism and intellectual property law in the era of trade imperialism and colonialism, and how that relates to the liberal governance of knowledge and the emergence of a universal patent regime. It highlights the debate whereby patents were regarded as 'evil monopolies' and then, became redefined and inscribed in law as an inalienable right of private property. It discovers the institutions which conceived of this shift, and how that related to the legal invention of the corporation as a legal subject.

Later this chapter turns to nineteenth-century Britain as the first industrialized nation, the hegemon of the liberal world order and the first 'settler-colonial food regime' as well as to the role of patents later in the century to address this question. In the earlier part of the century patents commonly referred to as 'industrial patents' at that time, primarily focused on industrial technologies or processes, and food crops, plant varieties and plant breeding techniques central to the 'material life' of the poor populations were rarely subject to protection, or at least not in the same way as industrial patents. I argue that despite the limited relevance of 'industrial patents' to the liberal governance of social reproduction, largely due to the lack of or the limited level of material capabilities associated with technologies of great social relevance for human security, the normative frameworks, basic terms and the axes of most contemporary controversies about the legitimacy of patents on food crops, seeds and basic medicines, the fundamental institutions and

[19] According to Friedmann (2005) and McMichael (2013), the first food regime spans the period 1870-1914. The food regime analysis recognizes the establishment of a world price for staple foods in 1870 as the temporal origin of the first food regime.

ideas central to the neoliberal governance of patents as well as the structural socioeconomic and health inequalities, and the human insecurities they forge between the Global North and the South are enmeshed in the historical structures underpinning the nineteenth-century economic liberalism and colonial/imperial rule. Most patents in this sector focused on preservation technologies and industrial food, and recipes that gained recognition with the rise of brands, reflecting the primacy of economic concerns orienting patents.

Even though the weight the patent regime has on food security, more broadly on human security, is relatively less, the patent regime and the nascent human security regime of the nineteenth century to a significant extent set the ideological and institutional kernels of future regimes. These were largely shaped through contestations and negotiations around the meaning of free trade and the free market as a part of consolidating a hegemonic liberal governance framework. Tracing the controversies, legislations and contestations surrounding these kernels to explore the durable ideational and institutional legacies of the nineteenth-century patent regime and the liberal governance of hunger is the task this chapter undertakes.

PART I

The Liberal governance of hunger: material capabilities, ideas and institutions

This section maps out the contours of an emerging human security regime in the era of nineteenth-century liberal capitalism through an analysis of the food question in Britain in the mid-nineteenth century. It examines how the governance of social reproduction that promotes market mechanisms as the exclusive guarantee of human security was forged in the nineteenth century to gradually replace the earlier moral economy of hunger with the (global) political economy and the liberal governance of hunger and food security. Rather than the international treaties and the patent regime, which we could say largely reflect the 'opaque zone' of capitalism associated by Braudel (1992, 24) with "the circuits and calculations of privileged actors that are largely unknown **and** distant from the daily concerns of subsistence", national laws and legislations which at first sight may seem pertinent to the technicalities of international trade, lowering tariffs or about ending protectionist measures of the mercantile state, in effect, constituted a historically specific human security regime. Rather than a thorough inquiry that will do justice to the complexity of this

transformation, it undertakes the modest task of discerning the key moments and the logic of the incipient regime in Britain by focusing on the key ideational, institutional, and material dimensions of food relations.

Some questions this discussion raises include the following: How did the hegemonic ideas of the free market that underpinned the "progress", "improvement" and inventions that marked nineteenth-century Europe and North America bear upon the basic subsistence of the labouring populations? How different was the face, so to speak, of the free market for the poor in Britain when compared with the dazzling technological progress and economic growth? What was the conception of hunger that underpinned market society which prized itself for advances in sciences and technologies? What was the other side of the coin of a social order that prized itself with 'genius inventors' and civilizational progress? How did the ideas of innovation and improvement play out in the organization of social reproduction?

1834 Poor Law Amendment Act and abolition of the "right to live"

In a relatively less debated chapter of *The Great Transformation*, which is one of the most cited works in social sciences, Polanyi (2001) reconstructs the history of eighteenth and nineteenth-century liberal economic thought, highlighting the radical changes in social consciousness as an integral component of the great transformation to the market economy. The 1834 Poor Law which abolished the 1795 Speenhamland Law is the crux of this ideational and institutional transformation. The Speenhamland prevented the creation of a competitive labour market (81) until its abolition, which was a necessary step in the transformation into a market economy. Polanyi (2001, 88) likens the discussions around the Poor Law to "the most spectacular events in history" in terms of their weight to inform the hegemonic framework of thought.

> If the French Revolution was indebted to the thought of Voltaire and Diderot, Quesnay and Rousseau, the Poor Law discussion, formed the minds of Bentham and Burke, Godwin and Malthus, Ricardo and Marx, Robert Owen and John Stuart Mill, Darwin and Spencer, who shared with the French Revolution the spiritual parentage of nineteenth-century civilization.

The 1834 Poor Law abolished the Speenhamland system which was implemented in 1795 as an emergency measure to assure a minimum income to the poor irrespective of their earnings. It

implemented "an allowance system in the form of the aid of wages to the poor with a scale dependent upon the price of bread" (84). Thus, its purpose was to unconditionally provide a minimum income that ensures a basic level of food security for the poor regardless of income and employment. It was implemented as a social protection measure to maintain a basic level of food security in the lack of cheap food coupled with the pressing need for cheap labour. In hindsight, the logic of the Speenhamland undermined the logic of a competitive labour market predicated on the dependence on waged labour to subsist. In this respect, Speenhamland was "no less a social and economic innovation than a basic 'right to live' and until abolished in 1834, it effectively prevented the establishment of a competitive labour market" (Polanyi 2001, 82).

When the 1834 Poor Law abolished the Speenhamland system and implemented the workhouse, overhauling the outdoor relief of the Speenhamland system, it was this right to live[20] that got abolished (Polanyi 2001, 86), reflecting a substantial change in Britain's poor relief system.[21] The labour market could be institutionalized only if the propertyless were deprived of the right to subsistence, and when the fear of hunger disciplined and regulated their daily lives. Now "the peril was that of death through exposure" (87) which was viewed, by neoclassical economics, as a natural consequence of the competitive free market insofar as "poverty was nature surviving in society" (Polanyi 2001, 129) as articulated by Joseph Townsend. As Fraser (2016) highlights, the nineteenth-century regime of liberal competitive capitalism "tended to leave workers to reproduce themselves 'autonomously', outside the circuits of monetized value, as states looked on from the sidelines ... [as] it also created a new, bourgeois imaginary of domesticity …[c]asting social reproduction as the province of women within the private family". The insecurity of access to the means of subsistence characteristic of the capitalist market society was institutionalized through the 1834 Poor Law which made possible the institution of a national competitive labour market in the first place. In other words, becoming a part of the workforce was

[20] It is important to note that the 'right to live' in this context refers primarily to a moral right rather than a citizenship right of equal status. This is suggested in Polanyi's (2001, 84) remark that the Speenhamland was celebrated both by the "'humanitarians' and the 'selfish' alike as an act of mercy even though not of justice".

[21] The 1834 Poor Law pivoted on the distinction between the 'non-deserving' and 'deserving poor' that was central to the nineteenth-century liberal governance of social reproduction. The former referred to the segment of the poor perceived to be responsible for their poverty, typically the able-bodied men who did not enter the workhouse, which was a centralized institution to feed and house the segments of the poor ready to live and work under extremely harsh conditions.

imposed as the sole anchor of subsistence and a labour market was institutionalized the moment access to the means of subsistence was rendered fundamentally insecure.

The social reproduction regime of the nineteenth century was largely shaped around this structural insecurity dominantly perceived to be an individual problem which was, in effect, profoundly rooted in **"**the general indifference towards the living conditions of the populations" (Picchio 1992, 6). It stems, Picchio (1992, 6) adds, not only "from the material conditions of life, which may be adequate or even opulent for some sections of the labouring population, but from social and psychological conditions linked with people's deep needs for security, growth and autonomy." Thus, the 1834 Poor Law was a pivotal step in the process of redefining the relationships between politics and 'the economy', ideologically and institutionally separating the two. It was also fundamental in forging a social reproduction regime rooted in the structural insecurity concerning the subsistence of the working and nonworking poor**.** As such, it redefined the relationships between economic production and social reproduction, drawing their institutional boundaries in a way that tends to prioritize the security of capital at the expense of human security.

1846 Repeal of the Corn Laws

The English Corn Laws were a part of the mercantilist system of protective measures regulating Britain's trade relations with Europe and its colonies since the seventeenth century. As imports gained more significance than internal trade and exportation, the anti-Corn laws became the pinnacle of the defense of free trade. By the mid-nineteenth century, the political campaign for free trade, underpinned by the 'liberal creed' in the so-called 'self-regulating market', "had become one of the clearest expressions of the English middle-class Providentialism" (Orford 2015, 39), and indeed, a part of the making of the liberal state form and the hegemonic world order of *Pax Britannica*. Writing on the impact of the imaginaries of free trade on British literature, Çelikkol (2012) refers to the extensive studies and debates in the different disciplines about the Repeal and provocatively asks: "Why did the importation and exportation of grain, come to have such a hold on the national memory? Why did the Corn Laws become an emblem of historical transformation?".

The repeal of the tariffs and quotas allowing grains to be imported from the settler-colonies of the Americas was a major step in constituting the institutional landscape of food security that

connected the basic food needs of the working classes with the international producers through the free market. Notably, the contradictions between capital and labour at the domestic level were thereby rearranged at the transnational level, rather than being resolved, as the state was largely relieved of the responsibility to provide minimum living conditions that which was transposed to the free market, international trade and the family. The activities of the Anti-Corn League[22] that eventually led to the repeal could be viewed as the key moments of hegemony-building**,** illustrating free trade imperialism as a hegemonic project that largely pivoted on the price of bread and cheap food.

In the process of consolidating a global food market, Britain was the first to renounce the protection of its farmers and landowners. The Parliament's repeal of the Corn Laws in 1846, which removed import protections for local farmers, was a necessary step to link the provision of basic needs and the creation of a trans-oceanic market in necessities. In **t**his respect, the repeal of the Corn Laws together with the earlier Poor Law of 1834, are also complementary policies that delineate the state's diminished role in providing relatively stable and adequate conditions for the social reproduction of working and nonworking poor and the implementation of insecurity of subsistence at the heart of the capitalist market society. As the Poor Law of 1834 was a necessary step to implement the labour market, the Repeal of the corn laws was a key step in the making of the global food economy to provide cheap food, both showing that institutionalizing the market economy and international free trade was intertwined with issues around the governance of hunger. Concomitantly, Rioux (2018) proposes a scalar shift to national and subnational processes to analyze the emergence of the "settler-colonial food regime", situating its spatial and temporal origins in the Repeal which enabled the (re)production of 'cheap labour' through the 'cheap food' facilitated by free trade.

Together then these two legislations helped constitute a social order that pivoted on the insecurity of access to the basic means of subsistence for the propertyless and the international liberal order that benefits from people's fundamental dependence on staple food, leaving a growing number of people undernourished (Orford 2015). Therefore, they attest to the constitutive role that

[22] The Anti-Corn League (1838-1846) was a prominent lobbying group formed by radical liberals and industrialists to promote free trade and abolish corn laws that protected big landowners. It garnered support from urban middle classes, including housewives advocating for affordable bread. The League was known for its financial resources and aggressive lobbying, focusing on free trade, the New Poor Law, and self-help in its defense against corn laws. (Pickering and Tyrell 2000)

law has played in forming a global food system underpinned by the social reproductive contradictions of capitalism, and to the emergence of 'food security' in Britain as an issue inseparable from the provision of cheap labour. This, Orford (2015, 42) writes, "also ushered in what was to become a new free trade imperialism":

> In place of the 'old colonial system' was erected a new system of free trade, premised upon an international division of labour and access to the resources of the colonies. In that context, the 'issue of starvation' would remain the 'ultimate test' of the Victorian commitment to free trade and the principles of political economy. It was a test that colonial administrators would pass with flying colours in Ireland and India.

These legislative acts were foundational for the liberal governance of hunger and food security in the first half of the nineteenth century. Rather than patent acts and international treaties such as the Paris Convention of 1883 that later set the legal-political basis for the commodification of knowledge and its free trade as a commodity, these landmark national legislations have shaped the institutional and ideological landscape of the liberal governance of social reproduction under the precepts of the free market and free trade. In this context, subsistence and the procreation of life increasingly defined the social agenda.

The 'great food question' in the "hidden skeleton in the closet of England"

Hunger had become an important headline in the newspapers following the Poor Law Reform Act of 1834 and "hunger as news' became a new form of journalism and remained a persistent agenda in the daily journals into the early twentieth century in the UK and North America. Until the last decades of the century, the narratives published widely in popular journals such as the *Globe*, the *Times* and *the Daily Chronicle* detailed life stories of men, women, and children "who had 'literally died by inches'", "denouncing the system responsible for such barbarity" (Vernon 2007, 21), and challenging the neoclassical, Malthusian view of those in destitute as irresponsible, incompetent and incomplete dependents who do not strive enough to make ends meet.

Numerous reports presented at the Society for the Encouragement of Arts, Manufactures and Commerce, one of the leading civil society actors to promote industrial patents and organize the Great Exhibition of 1851, similarly drew attention to the great interest surrounding the 'food

question' in the mid-nineteenth century. Remarkably, the Society singled out the "food question" among its central concerns during the same period that celebrated civilizational innovation and progress: "…there can be no doubt that the years spanned by the Society of Arts Food Committee, (1866-1881) are of special interest, for they mark the first serious consideration of food supplies and food quality in industrial Britain."

"The Food Question: Suggestions in a letter to the Right Honorable Lord the John Russell," (1847, 6) stated that "the two words represent the essence of the calamity which is overhanging the country- Consumption and Supply". The acclamations in the letter about "the progress which England had made in commerce, agriculture, manufactures and the arts", the "hum of machinery" and more efficient production were often disrupted by scenes of poverty and hunger in the rural regions among small-scale farmers. "The steam engine of the factory, of the steamboat …[can] not labour under these difficulties," when agriculturalists and farmers can neither reproduce themselves nor produce food for the urban industrial classes (The Food Question 1847, 12-13).

The years spanning the food question by the Society of Arts Food Committee were approximately the late period of what is referred to as the "second agricultural revolution"[23] with an intensive quest for productivity increase and profit maximization in agriculture. While advances in chemistry such as the production of phosphate-based fertilizers significantly changed the organization and the knowledge of agriculture, making "the operations of the farmer more like the factory owner" (Rioux 2018, 719), these were not sufficient to meet the demands of an increasingly market dependent population. The changes recognized as revolutionary were incapable of compensating and reversing the significant decline between 1750 and 1850 in agricultural output and calorie production per person (Voth 2007). The corresponding decline in the daily calorie consumption for the vast majority of the British population could also be observed in meat consumption.

Even with the meat imports added, meat consumption remained considerably low by the end of the 1860s. Free trade had not yet fulfilled the promise of providing sufficient cheap food and it was not until the 1870s that the price of staple food for the working classes such as bread seriously declined and meat, while its consumption continued to be determined by class, started to be a more common item of the working classes. Substantially higher living standards and better

[23] Historian Francis M.L. Thompson cited in Rioux (2019, 17).

diets with higher quantity and quality of food for the working classes had to wait until the 1870s even though severe social inequalities continued to prevail.

Among many surveys conducted about the deep hunger and undernourishment in Great Britain, which was simultaneously the imperial core of dazzling industrial progress and innovation, a comprehensive study entitled "The Food of the People" identified undernourishment amongst labouring classes as the "plague-spot, skeleton in the closet of England" (Brown 1865, 2) and stated that for "the security of her shores" England needed a "well-fed and vigorous people and that all the thought and energy she could boast should be employed for a time on the food question" (Brown 1865 cited in Daniels and Bayliss 1981, 5).

Dr. Joseph Brown (1865) presents intergenerational hunger and malnourishment widespread among the poor notably as a security threat to the integrity of the entire society, bringing to light its potential health and social consequences including social disintegration and the loss of cohesion. The introductory remarks of the report portray a "gloomy picture from an examination and comparison of the diets, and their costs, of the different peoples forming the mighty British empire" (Brown 1868, 5). Dr. Brown first clarifies who "the people" in the title of the report are (Brown 1865, 2): "In speaking of people, I do not speak of the upper classes, of the middle class, or of highly skilled artisans who may be said to be in a state of transition—to be

passing from the labouring into the middle class. I speak of the strictly labouring class and their families."

Startled by the scope and depth of undernourishment[24] among those who subsist with "barely sufficient food to avert starvation diseases", Dr. Brown (1865,11) concludes "that thousands suffer from great deficiency of the necessaries of life, the result of causes over which they have no control". In addition to its threats to physical health, the report links destitution to social problems such as a potential increase in crime. The underfed labouring populations with feeble bodies and extremely vulnerable living conditions, inscribed a multidimensional security threat at the heart of the market society.

The food supply, the means to increase it and the calculations of the daily nutrition per head necessary to keep the population of the British Isles in the average mental and physical activity

[24] "England seems the worst fed of the four divisions (England, Wales, Scotland, Ireland) of the United Kingdom; Scotland and Ireland are the best fed; and Ireland in one particular rather worse, in another rather better, fed than Scotland." (Brown 1865, 5)

were commonly problematized in the reports presented to the Society. In 1863, approximately thirty years before the invention of the ‘minimum subsistence level’ calculated on the nutritional value of food, the first government-sponsored survey on nutritional health, led by Dr. Edward Smith (1864, 212) distinguished between "public Poor Law dietaries" (food for prisons and workhouses “who are insufficiently fed and a burden to society”) and “private dietaries” (food for those who contribute to society's wealth). The survey, Dr. Smith writes, sought to contribute to increasing the latter's means and lessen the former's burden to promote material wealth and the ‘stability of the empire’.

Agreeing with the disciplinary principles embodied in these public institutions that the food they provide should not exceed the amount and quality the same class would have outside, Smith (1864, 216) nevertheless expresses his disagreement with the principle of ‘cheap food’: “True economy consists in keeping the poor’s health and strength at the least cost, and not simply finding the cheapest dietary upon which they may feed”, further including sex and age, kind and variety of food, the familiarity of the food to one’s life and environment among the criteria of sufficient food. Five years later, a letter presented to the Society reported the great deficiency of meat consumption even among “Londoners, who consume a larger proportion of animal food, as a rule, than is accorded to the other nine-tenths of the population” (Scott 1868, 256). The report warned about the news that “impresses the popular mind” about the massive amount of food imported from “the uttermost ends of the earth” without stating the insufficient supply for starving millions.

In the budgets gathered during the 1830s and 1840s, a significant portion nof household income was allocated to food, with families dedicating 75 percent of their income to this category. Of that food expenditure, 71 percent was specifically spent on bread, leading to a situation where 55.5 percent of total income was consumed by this single item. Therefore, the diets of agricultural workers saw little change up to 1850. (Griffin 2018). While there was a significant increase in the diversification of food in the diets of the working classes by the 1880s, food remained a major item of working-class expenditure throughout most of the century. Especially for the urban labourers, buying bread and groceries on credit was widespread, suggesting that basic subsistence needs were hardly maintained through debt and a life of indebtedness tied to the mercy of the shopkeepers (Burnett 1968, 55).

The price spike for different kinds of meat, “a primary necessity of … national existence” (Burnett 1968, 257) reached 33% in the London market between 1850-1867. Lascelles Scott and

Wilson (1868) present the high price of staple foods as a matter of life and death. Responding to the question of how "a country is affected by a supply of animal food totally inadequate to its requirements", they refer to Dr. Farr's 1846 findings of a correlation between higher mortality rates and higher food prices. "The stubborn statistics" of Dr. Farr's research, Lascelles Scott and Wilson (1868, 258) claim, were confirmed when "the meat prices [were taken] as the index of mortality":

> the rate of mortality rises with the cost of food staples, or, in other words, that they who take a fraction off the price of meat save the lives of thousands of their countrymen. Nor does the relation stop here, for if we can trace a connection between cheap food and life, dear food and death, it follows that the mental and physical powers of a nation must be largely influenced by the character of its food supply.

In the context of the hunger of the propertyless poor, with the contradictory coexistence of 'plenty and want', the 'food of the rich' and 'food of the poor,' increased industrial productivity, the abundance of commodities and the destitution of the working classes, the classical political economy framework of the market society as a 'harmonious order' could not legitimate the burgeoning market society.

Rather than rhetorical, the question "where do the poor come from?" (Polanyi 2001) in the nascent market society reflected a discrepancy between the social consciousness of the age and the rapidly changing social conditions. It could be said to express the urgent need to justify the contradictions and deep inequalities of British society on the verge of a total breakdown on epistemic and moral grounds—the perplexing problem of "the poor" compelled post-Smithian liberal political economists to search for a new theoretical framework. The prevalent ideas and conceptual frameworks inherited from classical political economy could not sufficiently grasp and explain the social transformation and the emerging social and political order that was increasingly in need of legitimation.

Understanding hunger as a 'human security' threat: Social reproductive contradictions of capitalism

Deeply rooted in the social reproduction of labour power, the food question of the nineteenth century also registered hunger as what could, in hindsight, be called a 'human security' threat' to the well-being of the entire society. Discussions of the elites around the food question expressed an incipient consciousness about the crystallization of the major crisis tendencies and the axes of contradiction integral to the social-political order.

Paradoxically, wage labour as *the* universal norm of social security and protection in capitalist societies was underpinned by the institutionalization of fundamental insecurity of access to the basic means of subsistence. That is to say, the labour market in capitalist society could be instituted once subsistence was systematically rendered insecure. Instead of the 'market forces' as suggested by utopian liberals, this was realized through a raft of legislations and state policies that shaped the sphere of social reproduction and prioritized the security of capital at the expense of human security at the fundamental level of basic need provision.

Thus, these developments inscribed inextricable relationships and contradictions between cheap food, cheap labour and capital accumulation (Araghi 2003; Rioux 2014; 2018; Moore 2015; Patel and Moore 2018**)** to the heart of the capitalist market society. Thus, the contradictions at the level of food security operated within and across jurisdictions, working through the bodies of poor labourers and, we must add, fundamentally of their families, who were the first ones to typically compensate and mediate the contradictions between capital and labour often through their bodies and the work performed by women and children in and outside of the household.

Considering the insights of social reproduction feminists, we can claim that the rescaling of food relations through free trade does not only entail rescaling the value of labour power. It also entails redrawing the boundaries and reconfiguring the relationships between production and the social reproduction of labour power, including the various forms of domestic, unwaged, and often unpaid labour that go into the production of cheap labour and the maintenance of basic food security in ways tend to render them invisible and register them as externalities to the global political economy of food. In other words, the rescaling of the value of labour power through the international market and free trade also entailed reorganizing the relations of social reproduction, excluding social reproductive realms and activities out of the scope of value production and

discerning market dependency as the legitimate form of social provisioning. The international food order of the 'settler-colonial food regime' (Friedmann and McMichael) required institutionalizing a social reproduction regime in the national and subnational contexts that would align with the demands of the international market and globalizing capital. The governance of the contradictions of the social reproduction of the urban and rural labouring populations bordering between bare subsistence and death by starvation registered the governance of 'letting live' and 'letting die' (Li 2010, Mmembe 2003) as a fundamental component of the nineteenth-century human security regime.

PART II

The first multilateralism of Intellectual Property Law (1500s–1945)

While food-related processes were often patentable in Western Europe, food products were typically exempt, reflecting their dual role as both a vital need and an economic asset. This exemption was also based on concerns about unfair competition, as patents were sometimes viewed as endorsements of quality. In the mid-nineteenth century, according to the evidence from the 1851 British Exhibition Crystal Palace on the patenting rates across sectors, manufacturing machinery and engines had the highest rate of patenting – respectively out of 242 and 406 exhibited products in these sectors, only 29.8 and 24.6 % were patented (*Official Catalogue* 1851 cited in Moser 2007, 36). Food processing was among the sectors with the lowest patent rates – only 7.9% of 140 exhibited products in all exhibitions in Britain had patents, followed by the chemical and textile sectors. In total, only 11.1% of 6377 exhibited items at the international Crystal Palace were patented. (*Official Catalogue* 1851 cited in Moser 2007, 37).

Food-related patents were occasionally brought up as a part of the discussions surrounding the 'great food question,' as the country faced widespread hunger and rising meat prices. Patents for frigorific and drying methods, as well as antiseptic preservatives, failed to address the nutritional needs of the working class and were deemed costly, impractical and potentially harmful (Lascelles and Wilson 1868). While elites championed free trade as a solution, the poor resisted the consumption of preserved meats due to flavour loss (Woods 2020), highlighting a disconnect between technological innovation and the needs of the working class.

In contrast, plant breeding in Britain during the nineteenth century demonstrated a different dynamic. Innovation in plant breeding, which introduced a huge number of new plant varieties to the market, largely occurred using public funding, non-market strategies and non-patent means to protect the secrecy of innovations when needed (Charnley 2013, 70). This innovative patent-free sector challenged the view that patents were the only way to encourage and protect agricultural innovation. Examples like Major Hallett's pedigree method for wheat breeding, James Carter's new pea variety, and Rowland Biffen's publicly funded wheat breeding techniques show that public goods, strong collaboration of the scientific community, scientific reputation and institutional support played a major role in agricultural innovation. These cases reveal that scientific communities, driven by non-commercial motives, were also key drivers of progress in this sector of agriculture fundamental for the farmers' and their families' subsistence (Charnley 2013; Brassley 2000)[25].

However, the 1883 Paris Convention resolutely established the principle of international protection and set the articles that to date continue to be foundational institutional structures of the global governance of patents. The resolution of the 1883 Paris Convention was the culmination of a series of international conferences—the International Patent Congress in Vienna (1873) and two conventions in Paris (1878 and 1880). The document of the 1883 Convention was finalized at the 1878 and 1880 Paris Conferences and signed by fourteen states - Belgium, Brazil, Ecuador, France, Great Britain, Guatemala, Italy, the Netherlands, Portugal, El Salvador, Serbia, Spain, Switzerland, and Tunisia, joined later by the United States, Germany, and Japan - to establish the International Union for the Protection of Intellectual Property in 1884. These conventions extended intellectual property rights from the governing European countries to their colonies and protectorates, but not for the benefit of local populations. Instead, the growth of intellectual property rights mainly supported trade and commercial interactions among colonial powers, enabling them to preserve economic control over each other within their territories (Okediji 2003; Oddi 1987).

Intellectual property law, far from being a mere byproduct of colonial governance, was a central tool in securing European economic superiority in their global interactions (Okediji 2003).

[25] Historians point out that plant breeding was largely embedded in the 'moral economy' (Thompson 1971) of the nineteenth century despite some competition from commercial seed growers trying to persuade farmers to purchase new seeds each year by using publicity, society prizes and trade catalogues as a mark of reputation. Historical analysis shows that the majority of the wheat was grown from seeds saved by farmers from the previous year.

As Okediji (2003) notes, the patent laws were not intended for local populations in the colonies, who were treated as subjects rather than citizens, preventing them from benefiting from the protection of intellectual property rights. It was not until the late twentieth century, as globalization deepened international economic connections, that intellectual property began to be used as a means for developing countries to challenge foreign control over technology and knowledge once they entered their borders.

The conference system which prevailed in the mid-nineteenth century as a response to the growing need for coordination and regulation in trade, communication and public health was a central component of building "the non-coercive part of the international political order that was needed for Europe to enter the Second Industrial Revolution" (Murphy 2006, 46). It is noteworthy that while the earlier years of the conference system marked the apogee of the international liberal order, the final quarter of the century saw the start of the decline of the liberal world order. Thus, the concerted efforts of the European powers to build the first international patent regime and the increased aspiration towards a uniform patent framework are much rooted and shaped in this threshold of a gradual decline of the international liberal order towards the "era of rival imperialisms" which coincides with the export of patent laws and other legal devices, especially to the British and French colonies.

In his thorough analysis of nineteenth-century international organizations, Murphy (2006, 27) stresses the critical roles that nation-states, as well as non-state actors, have played in the conference system that led to "a complex of economic, political and cultural institutions which permit the normal functioning, social development characteristic of a particular period and a particular economic system." In addition to the monarchs and aristocrats who typically sponsored international conferences, philanthropist businessmen, industrialists, lawyers, inventors, engineers, ambassadors, scientists, and medical professionals across Europe spearheaded the intellectual and moral leadership pivotal for the formation of modern international organizations. 'The ideology of innovation' was the central component of the civilizing message of the exhibitions. The international exhibitions, celebrating inventions as the apex of human civilization, were central to the conference system both as the displays of the 'marvels' of industrialization and as the carriers of the 'civilizing message' underpinned by and organized around incipient notions and assumptions about knowledge, innovation and the governance of intellectual property. As Long (2012, 12) put it, "the civilizing message included the clear view that 'progress' and the

ameliorating effects of 'civilization' were best secured by technological progress in lieu of traditionalism, and a choice of Western 'values' over 'backward cultures'".

With the rise of a universal patent regime upon the institutionalization of the 1883 Paris Convention, the sovereignty of former colonies shifted away from prioritizing the welfare of their citizens and instead became subordinated to the demands of global market forces. This transformation was solidified, Okediji (2003, 325) writes, with the rise of 'the second multilateralism' in intellectual property law in the mid-twentieth century. This was a pivotal step in the "globalization of the commodity form of international law" (Cutler 2014, 45), emphasizing the roots of deeper entrenchment and the expansion of the 'commodity form of law' in the global system.

Liberal governance of knowledge and the emergence of a universal patent regime

The 'nineteenth-century patent controversy' (1850-1875) was a pivotal moment in the attempts to construct knowledge as private property, specifically patents on inventions, as the hegemonic common sense across a range of countries. The controversy spanned approximately two decades across Europe leading to the 1883 Paris Convention, demonstrating crucial points about the deeply entrenched ideas that have shaped and continue to shape the long history of patent laws and the nature of the free market.

The institutional implementation of an international intellectual property framework has been deeply contested since its inception. Indeed, the patent controversy and its resolution with the victory of patent advocates largely mark the settlement of the longstanding conflicts about the competing conceptions of knowledge in favour of the construction of knowledge as a scarce object that can be appropriated privately as a property right. As such, it was an early politically and socially organized step towards establishing private property over inventions as the "common sense" in the so-called free market economy. The concerted efforts of diverse state and non-state actors, pressure groups, different occupational organizations and associations largely set the ground for what Gill (2008, 94) termed a "framework of thought" providing an ideological coherence for the defense of patents, fixing the contours and the terms of controversies for the years ahead, and restricting the emergence of counter-hegemonic political imaginaries and an alternative rationality.

Another highlight of the controversy noteworthy for our purposes is that both the opponents and the advocates of patents over inventions identified themselves as the subscribers of free market ideology while disagreeing about how states must reward the inventor and promote innovation. Thus, both sides implicitly, and paradoxically, acknowledged government intervention as a necessary condition for free trade, parallel to our discussion in Part I. So, the controversy is more broadly on the emerging system of free trade and new structures of exploitation and dispossession as the mercantilist colonial relations dismantled. The disagreement largely stemmed from differing views on the nature of an invention, whether a discovery as the abolitionists claim, or a creation, and the state's role. The abolitionists argued that patent protection should not be universal but must be seen as a privilege granted to inventors as a reward after the merits of the invention are demonstrated whereas, for patent advocates a patent is an inalienable right that each inventor is entitled to and must be effectively secured.

Suggesting that the market economy was a deeply contested 'political project', Coulter (1986, 163) claims that "the supporters of the patent system did not consider themselves as protectionists", and their support for a stronger uniform framework of patent protection did not stop them from subscribing to the free market ideology and the optimistic view that the market economy and the subsequent technological progress will bring about social and human development. For instance, Coulter (1986, 164) cites Thomas Webster "an eminent London patent attorney who helped write the 1852 Patent Law Amendment Act[26]" which set the framework of the modern patent system in Britain. Arguing that the view of patents as monopolies is based on a misapprehension of the meaning of monopoly, he wrote, "o[n] the contrary, free trade is an essential preliminary condition of a rational system of protection of inventions on a free basis." (Coulter 1986, 164). In this respect then, private property over inventions, thus the early efforts to commodify knowledge was a part of the broader 'great transformation' to the market society and the process of building a new hegemonic historical bloc[27]. Before proceeding to the key ideas

[26] The Statute of Monopolies of 1624 is the first English statutory patent law. After being used for almost two centuries, the pressing need for reform led to the Patent Law Amendment Act of 1852. The Act established one uniform patent system for all of Great Britain and the modern-day Patent Office, overhauling the complicated and inefficient system which required the patentee to visit seven different patent offices. It simplified the application process and decreased the fees.

[27] 'Historic bloc' is a historical alliance of different class forces, suggesting the congruence of material forces, institutions and ideas. A historic bloc is politically organized around hegemonic ideas as a result of

that underpinned the controversy and its resolution by the end of the nineteenth century, let us elaborate in more detail on the reasons for bringing the patent controversy under focus.

The nineteenth-century controversy marked the first, and perhaps the only, concerted opposition against patent protections across Europe with demands going beyond their simple reform to their partial or complete abolition: "[F]or a few years", Machlup and Penrose (1950, 1) note, "it looked as if the abolitionist movement was going to be victorious" in Britain and the "cause of patent protection seemed completely lost at the end of the 1860s" (Machlup & Penrose 1951, 5). *The Economist* in June 1869 agreed with their observation, predicting "it is probable enough that the patent laws will be abolished here". However, not more than a decade later, the controversy ended in favour of strong intellectual property protection, mostly due to the increasing competition from the US and continental Europe that started to threaten Britain's industrial superiority. Although the abolitionists failed to dismantle patent systems, they largely shifted the debate regarding patents from *how* to *whether* the state should guarantee inventors' rights (Coulter 1986). The legitimacy and utility of patents as basic rights over inventions were strongly challenged. Thus, the patent advocates were forced to publicly defend and justify their views, which formerly they had simply asserted, broadening the discursive terrain and facilitating "an impressive array of arguments for and against patents" (Coulter 1986, 130) that still informs present-day debates.

Scholars of intellectual property law (Machlup and Penrose 1950; May and Sell 2001; Sell 2004; May and Sell 2006) highlight the patent controversy as a pivotal moment in the history of intellectual property often overlooked by narratives that claim a linear, seamless historical development without acknowledging how it shaped and in turn shaped by the prevalent contestations around the meaning and the scope of free trade. The victory of patent advocates is registered as a "key settlement in the history of intellectual property law and international trade" (Sell 2004, 268) and "a turning point in the history of intellectual property law and its relation to international trade" (May and Sell 2006, 108). In her thorough inquiry into the contested role of the British patent system in the industrial revolution, MacLeod (1988,116) specifies that the controversy "was actually the last time free traders regarded intellectual property to conflict with liberal markets and that it was illegitimate". Similarly, Sell (2006, 116) succinctly emphasizes the

a conscious struggle, suggesting an 'organic' link between the political and civil society under specific historical conditions (Gramsci 1971; Gill and Law 1989).

importance of the controversy to unravel the deeply contested and non-linear history of intellectual property law:

> In the coming century, this frank recognition of potential conflicts between international trade and intellectual property disappears from mainstream discourse…. [T]his period marked the full development of the discourse justifying intellectual property rights as an acceptable and legitimate form of monopoly; a discourse that would now start to drop the pejorative term *monopoly* from most discussions.

One can single out two interrelated discursive strategies and ideological shifts that have served to resolve, as it were, the alleged tension between free trade and the protection of intellectual property, demarcating the ideological terrain in which the liberal 'war of position'[28] is played out. The first one is the shift from understanding patents as 'evil monopolies' to fundamental individual rights; the second is the shift from understanding knowledge as inherently public non-rival good to its conception as a scarce, exclusive object of private property.

Machlup and Penrose (1951, 3) stress that during the patents controversy, numerous Parliament committees and royal commissions were formed in Britain to oversee the operations of the patent law, and their findings seriously challenged the reputation of the patent system as a viable incentive for innovation, reflecting the broad anti-patent sentiment in Europe. In response, associations such as the Association of Patentees and Proprietors of Patents were formed to address the threat of abolition. Business organizations and occupational associations such as the Inventors' Institute, the Society of Arts, and the British Association for the Advancement of Science were among the active participants.

While most patent advocates avoided identifying their advocacy with the protectionist values of the old mercantile system, the controversy was shaped "between those seeking to defend the protection of innovation and invention through the patent system, and those contrasting this protection with the needs and demands of an international system of free trade." (Sell 2004, 287). In a way that could surprise the contemporary advocates of strong intellectual property protection

[28] 'War of position' for Gramsci refers to a strategic approach in the making of a (counter) hegemonic order, suggesting a gradual and sustained effort to build influence and power in the civil society. Gramsci contrasts it to the strategy for a direct and rapid confrontation

who tend to see them as a central pillar of the (neo)liberal world order and free trade, the nineteenth-century liberals were the ones to draw attention to the contradictions between the protection of patents and an international system of free trade. Instead, "the free traders regarded intellectual property rights as a privilege that could *not* be protected across jurisdictions as it constrained the free trade in goods that included claims of intellectual property"[29] (May and Sell 2005,116). The core idea in this view is that patents allow their holders to divide the world market along national borders, forbidding the trade of patented goods from one nation to another.

The dilemma for the latter was to work out how to continue supporting a system of free trade and defending a system of patents that was inherited from a monopolistic mercantilist system of privileges. Undoing this dilemma required an uneasy reconciliation of patents with the hegemonic discourse of free trade common among classical economists, exemplified in Adam Smith's reluctance to extend his critique of monopolies to patents perceived as rare 'harmless privileges' (MacLeod 1988, 197) to be protected for 14 years to reward the inventor's ingenuity. If useful for mankind, Smith (1776) contends, it would reward the inventor well-proportioned to the merit of his invention, suggesting the view of the 'free market' as a fair distributor of public goods and private gains. For Smith, economic growth relied on technological innovation for which such 'harmless privileges' were the central motivation[30].

The battle over patents was of utmost importance since it tapped into a tension between private property in intangible objects and the free market, the stakes of which were high for the longevity of the entire capitalist market economy. Hinting at this point, the Society of Arts Committee Report in 1851 stated that challenging private property rights over inventions is a threat that potentially delegitimizes all property. In other words, the social and political legitimation of property in tangible and intangible objects[31] would stand and fall together, showing that the

[29] May and Sell (2005, 116) note Bhagwati (1998) as a contemporary version of this position. Bhagwati argues that the international protection of intellectual property is no different than mafia racket. For Bhagwati (1998; Bhagwati and Srinivasan 2002), intellectual property protection is a tax on poor countries, and the TRIPS should not be integrated into the WTO, which must aim at mutual gains in trade.

[30] Coulter (1988, 197) notes that "Adam Smith based his defense of the exclusive trading privileges that the state awarded to merchants who opened trade with "some remote and barbarous nation" upon " like the monopoly of a new machine (which) is granted to the inventor, and that of a new book to its author." (Smith 1776, Part I: Of Justice)

[31] This point coincides with and tends to validate May's (2000) argument that the presumption of a parallel between property in material and immaterial objects has facilitated the expansion of intellectual property

commodification of knowledge was fundamental, and intertwined with, the commodification of land and labour in the institutionalization of market societies: "So long as the State recognizes the existence of rights in any property, all the arguments which fortify such a recognition apply, in equal or greater force, to the rights of property invention" (cited in Prumbick 1997, 57)

The controversy, spanning across Europe, involved disputes in and outside of the parliament about pragmatic concerns as well as fundamental issues of principles such as what is patentable, whether the ownership of knowledge, more specifically, of inventions, could be treated analogously to the ownership of material objects, who can legitimately claim the ownership of an invention as an exclusive right, and the conflicts between public-regarding considerations and the private protection of intellectual property as an exclusive right. International conferences were the main sites where inventors, industrialists, lawyers, investors, and defenders of the international liberal order ardently debated the questions about the nature of the patent law (Penrose 1951, 20) and its international implementation.

Thus, the patent controversy was by no means a technical-legal or purely "economic" debate; and it certainly did not mirror a teleological process of the "spontaneously evolved continental legal tradition (Bouckaert 1990 cited in May and Sell 2006, 4). Rather, it is a testament to the "politically and historically contingent" (May and Sell 2006, 5) nature of the national and international development of the intellectual property system, demonstrating that the deeply entrenched ideas, normative structures and frameworks of thought that underpin intellectual property regimes are products of conscious efforts of diverse state, non-state, domestic and transnational actors towards building a hegemonic historical bloc. Scholars (Machlup and Penrose 1951; MacLeod 1988; May and Sell 2005) observe that there is not much in the twentieth-century defenses of intellectual property protection that has not already been deployed and developed in nineteenth-century disputes. By the same token, Machlup and Penrose similarly underscore that "despite all changes, our thinking on the subject has hardly changed over the century" (Machlup and Penrose 1951, 2).

Accordingly, one could plausibly claim that the nineteenth-century controversy and its resolution with the victory of the patent advocates set the key terms and the conceptual pillars of

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rights. It is noteworthy that this analogy can be found in the logic of improvement that underpinned the property over land and informed the colonial practices of land dispossessions. What is glossed over is that the alleged 'tragedy of commons' famously deployed by Garrett Hardin (1968) to legitimize private property over land does not hold in the case of knowledge which is fundamentally a non-rival good.

the ideational terrain for the defense of and the attacks on intellectual property in the ensuing eras of capitalism. As such, the controversy and its resolution could be seen as the beginnings of the "long-run war of position in the battle of ideas" (Peck 2010, 49) to implement private property over knowledge as the common sense of the capitalist society.

The invention of the corporation as a legal subject

Accompanying the expansion of patents and copyrights was the pathbreaking juridical shift from the individual inventor/author to the corporation as the subject of patents and copyrights. May and Sell (2006, 118) emphasize the US Supreme Court decision in 1871 that authorized an invention to belong to the corporation. The decision also permitted "employment contracts to include a clause requiring employees to assign patents to the employer". Repeated in 1877 in Germany, the decision implied that the corporation should have the right over the work produced by their employees (Fisk 2005 cited in May and Sell 2006, 124). The unique legal form of the 'corporation' as a subject of rights not only expanded and legitimated the systematic exploitation of intellectual labour, but also endowed the corporation with the legal status of 'personhood' that can outlive human persons. This legal invention changed the entire organization of research and development, vastly increasing the significance of patent attorneys and the use of patenting as a business strategy to control competition and dominate the market. The exhibitions "offered the public a way to associate innovation with companies rather than just with individual inventors" (Fisk 2009, 87), promoting the idea that technological innovation is a product of a (private) collective enterprise.

The 'myth-making inventors' of the exhibitions were predominantly large companies. Facilitated by the new legal status of the corporation as a 'person', "myth-maker inventor" as the harbinger of civilization and improvement could swiftly be associated with private corporations such as Siemens Co., The Edison Electric Company, Farbenfabriken vorm. Friedr. Bayer & Coat. The legacy of this association between innovation, progress, and the private corporation can arguably be found in the persistent association to this day of private power and entrepreneurship with innovation and productivity contrasted with the public as bulky, ungainly, and incompetent[32].

[32] May and Sell (118) stress the lead of Thomas Edison in the US and Werner Siemens in Germany in this process of the invention of the corporation as a legal subject.

Thus, the legal invention of knowledge as an object of private property, the legal subject of that right as the inventor-corporation, and the expansion of industrial inventions in the industrialized countries of Western Europe and the United States converged in the nineteenth century to set, as it were, a new 'standard of civilization' through the institution of international patent protection. The ideology of improvement was instrumental during the colonial period in shaping new property systems, justifications for state sovereignty, and frameworks for global governance (Tzouvala 2020), including the establishment of a new international property system governing knowledge.

Public goods and rights

The nature of an inventor's right was one of the first debated propositions in the Paris Convention (WIPO, Paris Convention 1883). The outcome of the debates was a victory of the natural rights discourse as the underlying logic of patent protection, seamlessly insulating them from political contestation on the international scale and glossing over potential conflicts of social justice by transferring them to a juridical realm of legal technicalities: "The right of inventors and industrial creators in their work, or of manufacturers and businessmen in their marks is a right of property; the civil law does not create it, it only regulates it" (Penrose 1951, 50). Even though the 'natural' drops out of the discourse in the years ahead, the same logic of their indisputable primacy prevails in the convention today (Penrose 1951; Dhavan et al. 1990).

The articles of the Paris Convention substantially consolidated the primacy of knowledge as an object of private property, introducing a strong sense of legitimation to the idea that the protection of public good and public interest could be raised *only* as an exception to the rule of private property and should be dealt with in ways that would not impair its primacy. Moreover, the member states' authority to limit patents was curtailed to be confined only to extreme cases that impinge on their economic development excluding the reasons of public health or the protection of public goods. The ideological terrain of the debates was thereby demarcated by an economistic logic and in a way that could potentially benefit the weaker states only in the most extreme cases**.**

According to scholars (Penrose 1951; Dhavan et al. 1990), the history of the Paris Convention and the Union is the contested history of Article 5, which addresses the critical issue of compulsory licensing that bestows the less developed countries some power to protect their

markets and challenge potential monopolies. As noted above, Article 5 grants member states the right to take measures, such as compulsory working and compulsory licensing against the abuse of patents. National laws of most member countries require a patentee to work on their invention within a specified period in the granting country; otherwise, the state could revoke the patent entirely or subject it to 'compulsory licensing[33]'. For the less-developed economically weak members, measures such as revoking patents and compulsory licensing have been pivotal since they could grant some level of protection against the patentees of industrialized developed states who seek to block competition with no intention to work the patents in the granting country, rendering them dependent on importing their monopolies.

Articles 1 and 5 (WIPO, Paris Convention 1883) are recognized as the most controversial articles. Article 1 states the aim of patent protection as an end without any mention of a further goal and provides an astonishingly broad definition of 'industrial property', suggesting that the protection could potentially conflict with the public interest and the protection of public goods: " Industrial property shall be understood in the broadest sense and shall apply not only to industry and commerce proper but likewise to agricultural and extractive industries and to all manufactured or natural products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers and flour".

The seemingly impartial and straightforward language of the article then tends to gloss over "a total lack of concern with any kind of public interest objectives", and as scholars emphasize, introduces (Dhavan et al.1990, 141) "an irritating ambiguity which makes the text susceptible to a troubling range of interpretations" and exceptions. For instance, "[t]here is... no obligation for the member states to grant patents wine, cattle, or fruit... the purpose of the provision is merely to avoid *excluding* from the protection of industrial property activities products which would otherwise run the risk of not being assimilated to those of industry proper" (Dhavan et al.1990, 142). Penrose (1951) notes this as one of the most contested articles which nonetheless passed with a majority vote. How natural commons could swiftly pass as 'industrial property' in this early stage of an international regime makes the first article even more astounding. Even though products such as "minerals, mineral waters, beer, flower" were commonly excluded from

[33] 'Compulsory licensing' refers to the condition when a government permits a producer to produce a patented product without the consent of the patent holder if the condition of working the invention in the issuing country for a specified period is not fulfilled.

patentability, the Convention nonetheless induced the *potential* patentability of commons in its first article by incorporating them under its definition of an industrial patent.

Through Cox's lens, which enables us to move beyond the seemingly impartial and neutral wording of the articles and to delineate the institutions themselves as sites of structural power, the Paris Convention is a critical moment in the making of a "particular amalgams of ideas and material power which in turn influence the development of ideas and material capabilities" (Cox 1996, 225). Institutions tend to stabilize and reproduce the prevalent order, yet they "may also acquire a degree of autonomy, take on their own lives and serve as agents of change. They may also become the battlefield for opposing tendencies" (Cox and Sinclair 1996, 10).

May's (2000) and Strange's (1988) formulation of structural power in terms of "agenda-setting power" is helpful here in bringing to light the different aspects of the institutionalization of international patent protection. In addition to the distribution of the benefits, profit, and risks pertinent to the production of knowledge to the advantage of the more powerful and its retention, it also involves, in Strange's words, the "agenda-setting power". For Strange, as cited by May (2000), this is "the power to circumscribe choice in such a way that the limitation of choice is not perceived as such by the actors in social relations (Lukes 1974)". In the case of intellectual property, this entails the power to set the terms of potential contestations about what could be legitimately challenged, and what kinds of research, forms of knowledge, and ideas are worth pursuing, protecting and disseminating.

Conclusion

This chapter traced the debates, institutional actors, and competing social forces related to intellectual property and human security regimes in nineteenth-century liberal governance, unfolding within the context of the burgeoning market society rife with intensified contradictions of social reproduction and a hegemonic world order of *Pax Britannica* organized under the hegemonic principles of liberal economy. Despite the limited relevance of patents to food (in)security and the limitations of patents on food crops, plant breeding, and other agricultural techniques central to the material life of propertyless populations, it was argued that the terms and normative frameworks of many contemporary debates as well as basic institutional structures of the liberal governance of knowledge and the different forms of structural inequalities between the

Global North and the South were forged in this era. Also, the emergence of a new human security regime promoting market mechanisms as the exclusive guarantee of human security supplanted the earlier moral economy of hunger. Notably, in contrast with the neoclassical assumptions of the so-called 'free market', free trade was made possible by legislation and policies that instituted and reorganized human security. The debates around the 'great food question' illustrated the emergence of hunger as a human security question with social and transnational dimensions and the coexistence of the view of hungry populations as those responsible for their destitution with the notion that they are the victims of 'external forces beyond their control'. The examination of the 'great food question' in Britain - the world's first industrial nation – and the 'nineteenth-century patent controversy' signal the contested yet durable legacies of liberal frameworks and similar shifts that are still repeated today.

Thus, the chapter delineated several major developments and shifts. The first one is the shift from the understanding of patents as 'evil monopolies' of mercantilism to the idea of 'private property' as the common sense of knowledge as a scarce good. This was underpinned by the (secularized) version of natural rights rooted in the 'science of economics', suggesting the ontological and epistemological denial of commons, public goods**,** and collective forms of labour. A second fundamental change, indicating one of the most durable institutional legacies is the political-juridical invention of the corporation as a legal entity on a par with the abstract individual as the bearer of rights. This not only shatters the myth of intellectual property based on a natural rights justification, which was transposed to the corporation but more largely demonstrates that the appropriation of surplus value under capitalism extends to all forms of labour performed by the employee[34].

This was reinforced also by the colonial discourse and ideology of improvement and the 'Promethean inventor' largely mobilized by transnational elites throughout the nineteenth-century conference system to institutionalize the universal patent framework, setting the building blocks of the durable legacy of the commonsense association of 'innovation' and 'risk-taker entrepreneur' with the private sector and capital. As the patent regime as a transnational elite project was consolidating as a central liberal governance mechanism of knowledge, the liberal governance of social reproduction was underpinned by legislations that dispossessed the poor of their rights to

[34] I owe this formulation to Sebastian Rioux' s generous comments on an earlier draft of this chapter.

life and food, entrenching a precarious human security regime with the free market and free trade as its common sense.

Once the historical making of the patent and human security regimes is situated in the broader historical structures, we find a situation that could perhaps be summarized by evoking Braudel's (1992) respective portrayals of 'capitalism' and 'material life'. Capitalism as an 'opaque zone' (as intended by capitalists), denotes that "certain groups of privileged actors were engaged in circuits and calculations that ordinary people knew nothing of ... open only to a few initiates at most" (Braudel 1992, 24). Concurrently, the ideological and institutional making of the patent regime was a transnational elite project that developed largely detached from the 'material life' of the propertyless poor, "largely unknown and distant from [their] the daily concerns of subsistence". The patent regime is ideologically and institutionally established as a mechanism of liberal economic governance and imperial dominance based on the epistemic and ontological precepts and the market-driven normative framework of nineteenth-century political economy, including the primacy of the free market and free trade, economic efficiency and competition, presented as the neutral, scientifically objective organizing principles of society.

This presents a deeply divided society, where 'Promethean entrepreneurs' and capitalist elites are celebrated and exalted for their innovative entrepreneurship and wealth accumulation. In contrast, the vast majority of working and non-working poor, whose labour sustains the entire system, are either marginalized or rendered invisible at best, and largely blamed for their poverty and hunger. This inequality is compounded by the ideological and institutional mechanisms of economic liberalism, which systematically depoliticizes the governance of necessities and the social reproduction contradictions of capitalism. In this context, hunger, undernourishment and the 'great food question' tend to be treated as an 'economic' problem that can be transnationally addressed by free trade policies oriented towards cheap food imports, accompanied by unpaid and undervalued social reproductive labour typically of women performed in and outside of the household and by philanthropy. Obscuring the need for political action and the agency of the state, the basic needs of the poor are disregarded, and the structures that perpetuate these inequalities remain unchallenged.

CHAPTER 4

COMMODIFYING KNOWLEDGE AND GOVERNING HUMAN SECURITY IN STATE-MANAGED CAPITALISM

Introduction

The 'first multilateralism' reflected the colonial roots of international law. As discussed in Chapter 3, the first universal legal framework of patent protection was largely a transnational elite project that overtly benefitted the European powers. Colonies were under its jurisdiction only to protect and consolidate the market dominance of their respective protectorates. Even though food crops, plant varieties, seeds and plant breeding were not subsumed under 'industrial property' proper, the Paris Treaty was vague, perhaps strategically, about whether they could be legally 'packaged' as scarce knowledge objects of private property and the limits of doing so. Yet the institutional and ideological foundations of patent protection as a universal framework for knowledge governance, along with the (competing) discourses about the nature and legitimacy of patent regimes as mechanisms of governance tied to human security, were largely shaped during the first multilateral era embedded within the broader historical structures of the nineteenth century.

The transition to the second multilateral era marks the formal end of colonial rule and the 'formalism' of international law, which I contend is an important moment in the global expansion of the 'commodity form of international law', nonetheless shaped and constrained by the historical structures of the postwar political economy of state-managed capitalism and the efforts to reconstruct the post- World War II international liberal order. The 'second multilateralism' (1945-1980s) in intellectual property law is the 'era of formalism' (Okediji 2003), denoting the period defined by the official end of colonial rule and the decolonization process that roughly took place between the 1940s and the 1970s. By using 'formalism' to describe this era, Okediji (2003) highlights a paradox underpinning the integration of newly independent states into the Paris Convention as a part of international law, suggesting that their sovereignty is dependent on their adherence to international legal regimes institutionally and ideologically rooted in colonial rule. The historical evolution of US patent policies and practices reveals a complex interplay of

industrial, economic, and political forces, particularly in the period leading up to and following World War I. The interwar era, in particular, had been characterized by the strategic use of patents to foster corporate alliances, restrict competition, and maintain monopolies, culminating in the patenting practices of the US pharmaceutical industry which was a major target of criticism in this era.

This chapter examines the postwar expansion of the Paris Convention to include developing countries, including the former colonies, as a significant early step in the global spread of the international "commodity form of law" (Pashukanis 1978; Miéville 2004; Knox 2009; Cutler 2014, 2018). The chapter is structured in the following way: Part I introduces the framework of the second multilateralism of intellectual property, highlighting the tensions surrounding the sovereignty of former colonies and their roles within the international community. Part II argues that the post-1945 governance of patents on pharmaceuticals and food crops serves as a pivotal moment in the globalization of the commodity form of intellectual property, although limited by compensatory and other forms of public interest regulation. It shows how the scope of what has been called "the commodity form of law" (Cutler 2014, 2018) is, at this stage in the post-war order, delimited and shaped by the broader historical structures of state-managed capitalism and Keynesian welfare states in the Global North, and the social contradictions of capitalism and the need to regulate them. The commodity form of law is recapitulated and reviewed in the final part of this chapter.

Parts III and IV analyze the changing dynamics of the global governance of human security in the post-1945 world order as they are associated with the transformations in the governance of knowledge/patents. Examining the conflicts between various social and political actors and the forming consensus around the nature of intellectual property, it analyzes how and the extent to which these shape the global governance of food security and hunger. It examines the common sense around pharmaceutical patents in the US as a part of the efforts to *regulate* corporate power to support public goods and social justice. This is followed by a more thorough examination of the dominant logic and social forces by which hunger and food security are framed. The Green Revolution, which I take as another hegemonic component of the second food regime, known as the "mercantile-industrial food regime" (Friedmann 2004) and the "US-centered intensive food regime" (McMichael 2013) along with the US Food Aid, marks a pivotal point in the way these two governance frameworks become increasingly intertwined.

PART I

The Second Multilateralism of Intellectual Property (1945-1990s): The Era of Formalism of Intellectual Property Law

The second "formal" multilateralism (Okediji 2003) reflected the continuation of the global asymmetries of economic and political power and the indices of the colonial rule inherited from the era of the first multilateralism. Second multilateralism marks the decline of colonialism and the rise of self-determination as the central principle in the post-World War II international political and economic order recognizing former colonies as sovereign states (Okediji 2003, 326). Their recognition as sovereign states integrating into the international system involved their continued adherence to the treaties from colonial rule, which had paradoxically been a tool of subjugation in the first place. "Formalism", Okediji (2003, 333) writes, "characterized the mechanics of recognition of the new sovereign states and then, constructed the conditions for their participation in various international fora". Intellectual property law, rooted in asymmetrical colonial relations and Conventions, was applied to former colonies without major changes[35]. (Okediji 2003, 332).

The continuity did not take place automatically. A state had to file a 'declaration of continued adherence' created as a legal tool and standardized by the United International Bureaux for the Protection of Intellectual Property (BIRPI) responsible for administering the intellectual property system. A 'declaration of continued adherence' to the Paris and Berne Conventions thus entailed that "the pre-independence application of the Conventions remained in force in the developing country" (Okediji 2003, 332). In this respect, the declarations underpinned the constitution of former colonies as legitimate subjects of international law (Pashukanis 1978)[36], as

[35] All African post-colonial countries, except for Indonesia, Syria, Upper Volta and Mauritius, declared their uninterrupted adherence to the treaties of the colonial era during the 1960s. Two regional BIRPI offices in West and East Africa were established to administer patents for a total of 33 countries.

[36] As noted earlier, Pashukanis (1978) highlights the legal-political construction of the transnational corporation as a juridical subject legally on a par with the individual as the abstract legal subject of rights. In the case of the declarations, we can observe a legal tool of international law put in use contributing to

they locked in the primacy of private property and their extension to new spheres of life. Okediji (2003, 331) writes, "even at the decisive moment of independence, intellectual property laws were not directed at the domestic innovation environment, but were rather projected outwards to foreign nationals who would benefit from protection[37]. Developing countries…serviced the international system and not vice-versa".

This 'formalism' played a substantial role in ensuring and obscuring that the sovereignty of newly independent states was attained at the expense of giving up some control over determining their development routes and policies, "divorced from the domestic needs, priorities or constraints of the countries" (Okediji 2003, 333). States joining the World Intellectual Property Organization (WIPO) had to align domestic laws with global standards, often at the expense of domestic policy flexibility and needs. Yet guaranteeing intellectual property protection provided them access to a framework to attract foreign investment and enable technological transfers.

When former colonies were incorporated into the Paris Convention, the key provisions they adopted in addition to the general provision for the protection of industrial property, included the *national treatment* principle (Article 2), *the right of priority* (Article 4), *independence of patents* (Article 4bis), *unfair competition* (Article 10bis). This offered a framework of standardization and reciprocity, allowing countries to protect foreign inventions in their territories, and in turn, reciprocally protect their innovations abroad. Having a reliable and uniform patent system across different countries provided legal predictability and security for business. Former colonies also hoped to gain access to the technological knowledge and expertise the patent system facilitated.

Additionally, states had relative autonomy in how they adopted their domestic laws. The international legal framework of second multilateralism allowed governments the flexibility to decide on the scope of patentability and regulate the patentability of processes and/or products across sectors. More advanced countries like India reformed their patent law in 1970 and restricted pharmaceutical patents to processes, excluding the products, i.e. drugs, from protection. Additionally, pharmaceutical patents were granted only for seven years, as opposed to the fourteen

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the constitution of the former colonies as legal subjects in a way that anchors their status in the market-driven capitalist development model.

[37] This refers to Article 2 of National Treatment stating each member country grant the same protection to nationals of other member countries as it grants to its own nationals in terms of patents and other industrial property rights.

years in other sectors. It is widely accepted that these reforms were pivotal in the making of India's remarkably strong generics industry capable of producing basic life-saving medicines at affordable prices. The specific process of integrating into the international system and the global economy was by no means smooth and uncontested, firstly because the former colonies had to navigate their domestic needs and newly acquired sovereignty along with the obligation to uphold the liberal rule of law expressed as the obligations under Paris Convention, creating various tensions and contradictions for these states.

The 'formalism' illustrates how the universalization of intellectual property law as part of international law reflects the conflicts surrounding the sovereignty of former colonies and their roles within the international community. However, to understand the broader political and economic implications of postwar governance, particularly regarding patents on pharmaceuticals and food crops, this section proposes viewing the postwar patent regime as a key moment in the globalization of the commodity form of intellectual property. Through this lens of critical international law and critical international political economy, the limited expansion of the Paris Convention's jurisdiction represents a historically specific moment in the commodification of knowledge and the governance of social reproduction. In the postwar era, the governance of patents started to become a key issue, which, in the *longue durée*, extended to the governance of food security.

This shift marks a paradoxical moment in the broader historical process of both and depoliticizing subsistence, with rising state interventionism in some aspects of social provisioning, whilst removing such social provisioning in other, but also reflecting the rise in this period of a 'technological fix' to hunger—where the idea of conquering hunger through technology gradually became a dominant global approach to food security.

The Postwar Patent Regime as the 'Commodity Form of International Law'

The term "commodity form" is borrowed from Marx's critique of 'commodity fetishism', suggesting an identity between the logic of the commodity form and the legal form. Similar to the fetishized commodities that obscure the exploitative social relations that produce them, fetishized legal forms and the rule of law obscure the capitalist relations of exploitation as ahistorical, objective relationships of production and exchange, and further legitimize and neutralize them as uncontestable constitutional norms. For some critical theorists (Pashukanis 1978, Miéville 2004,

Knox 2009 “the universalization of international law” is predicated on the legal form. By challenging the traditional definition of the legal form simply as a ‘body of rules’ undifferentiated, for instance, between international law and municipal law (Miéville 2004, 275), this critical approach largely builds upon Pashukanis’ (1978) identification of the logic of the commodity form with the logic of the legal form. Central to this association is the historical emergence of the legal subject as the bearer of rights indistinguishable from the commodity owner. This critical perspective is based on Pashukanis’ “materialist strategy that correlates commodity exchange with the time at which man becomes seen as a bearer of rights (as opposed to customary privileges)” (Arthur 1978 cited in Miéville 2004, 275), suggesting that the logic of the commodity form of law, which consolidates and reproduces capitalist relations, operates through the production of new legal subjects.

As elaborated in Chapter 2, this entails a critique both of the liberal legal tradition as well as some orthodox versions of Marxism that theorize the political and legal apparatus as a part of the epiphenomenal ‘superstructure’ with no relative autonomy in the making of global capitalism. Alternatively, through the lens of a ‘commodity form of law’, the legal structure and the rule of law do not only simply enforce and legitimate capitalist relations. The legal form is actively engaged in every step of the commodification process which it ‘abstracts, individuates, encircles and displaces’ (Cutler 2014, 50), expropriating the public domain and the commons as private property by inventing new subjects and objects of private property (Pashukanis 1978; Cutler 2014). This contributes to shaping a hegemonic common sense around a cluster of ideas about the nature of property, private and public, the separation of the economic and political, public good, and the reconfiguration of the relations to biophysical nature based on the primacy of private property.

For Cutler (2014, 49), the legal structure creates “the very conditions of possibility for the emergence and continuing expansion of capitalism through the recognition of an ever-expanding scope of juridical subjects, property rights, and activities that may be subject to private appropriation”. A paradigmatic legal invention in this respect is the Anglo-Saxon model of the corporation “with the key characteristics of separate legal personality, limited liability, indefinite lifespan and profit mandate” (Baars 2019, 32), thriving over three centuries as a key agent of global capitalism. As Cutler (2018, 62) emphasizes “*de facto* legal power of transnational corporations obscured in international law due to their *de jure* insignificance as international legal subjects, is revealed through the critical lens of the commodity form of international law”.

The "commodity form of international law" allows us to unpack that international legal frameworks operate not simply as a tool of state sovereignty or economic development but as *a sine qua non* to consolidate market-driven capitalist relations and expand the process of commodification on a global scale by inventing new objects of property and juridical subjects framed as objective, neutral, universally beneficial principles of the rule of law.

From this perspective, the second multilateral era was a pivotal, yet incomplete, step in the institutionalization of the 'commodity form' of international law, whereby the universalizing framework of the Paris Convention entailed the integration of the developing countries to the globalizing economy and the US-led hegemonic world order while entrenching protection over otherwise non-rivalrous goods as the common sense of the liberal rule of law.

Tensions and limits in the postwar patent regime

While the commodity logic of the international patent framework embodied in the early Conventions pushed for the global expansion of private property, this expansion was largely constrained by the political economy of state-managed capitalism and the US-led hegemonic world order. This order was not only focused on establishing a robust financial and monetary system and a multilateral framework of trade, but it also sought to address the threats posed by an unchecked market economy to social reproduction to prevent a social, political, and economic collapse akin to that of the nineteenth-century liberal order that unfolded throughout the earlier decades of the twentieth century.

The growing consensus around the need for public health initiatives, international cooperation, and social welfare provisions became an integral part of both the North and South, shaping policies that aimed to balance market forces with social stability. These were reflected in the postwar international institutions including the Food and Agriculture Organization (FAO) in 1945, World Health Organization (WHO) in 1948 and the World Food Programme (WFP) in 1961. In addition, initiatives such as the 'Health for All' under a broad coalition of international actors, including governments, global health organizations, and development agencies, carried progressive policies such as Universal Health Coverage (UHC), Primary Health Care (PHC) to the agenda of global governance with wide support from the Global South.

In the Global North, Keynesian welfare states largely rooted in the New Deal provided − to different degrees − measures and policies to support the working classes as producers and

consumers. While largely relying on market-based solutions and often deeply gendered and racialized, social welfare provisions reflected states' support for social reproduction which was also a part of the postwar reconstruction efforts. Simultaneously, Bretton Woods institutions sought to regulate capital mobility principally by institutions such as the International Money Fund (IMF) and multilateral frameworks of public authority, while also promoting global economic integration.

The postwar landscape of patenting developed against this background, where the governance of contradictions to prevent a crisis of social reproduction, which was also perceived as a potential geopolitical threat in the context of the Cold War, was a major concern for the US and its allies. Until the later adoption of the TRIPS in the WTO, patent laws largely varied among countries, allowing for national flexibility to selectively and strategically use patents. For instance, between 1945 and 1971, Brazil revised its patent laws to exclude a long list of products and processes (for instance, pharmaceutical processes and products, therapeutic techniques, microorganisms, and chemical products) from the patentable subject matter (Mazzoleni and Póvoa 2009; Muzaka 2018) to support the development of domestic industries.

Similarly, India's patent law banned pharmaceutical product patents in 1970, followed by a raft of legislations that restricted foreign ownership and investment, which led many foreign pharmaceutical companies to leave the Indian market. These measures lowered the drug prices at the time and further contributed to the growth of the internationally competitive pharma sector in India, which is, ironically known today as the 'pharmacy of the world' for the developing and least developed countries, and a 'pirate' for the frontier economies (Muzaka 2018, 70-71), who aligned the parameters of the global patent regime with the health needs of their populations.

The measures in Brazil and India illustrate a central contestation in the postwar world order: while the global patent regime pushed for the primacy of private property to facilitate capitalist expansion, these nations sought to regulate the commodification of essential goods, like medicines, to preserve social welfare and economic sovereignty. Their revisions to patent laws were thus not simply about industrial policy but about balancing capitalist market imperatives with the needs for social reproduction in the postcolonial context. By excluding pharmaceuticals and agricultural products from patentability, both countries sought to ensure that these critical goods were not fully subjected to the global commodity logic of the patent regime, thus protecting their populations from the detrimental effects of market-driven governance of social reproduction. As

noted further below, such examples signalled emerging counterhegemonic forces in the Global South with alternative visions of development and political imaginaries for a different world order.

Notwithstanding the flexibility it allows on how patent laws will be integrated into domestic frameworks, the postwar intellectual property regime was a part of the *commodity form* of international law reinforcing the particular kind of world order in which state sovereignty ceases to be simply about territorial control or political independence but is fundamentally shaped by the need to attract foreign investment, facilitate trade, and ensure the free flow of capital. Particularly for the newly independent states of the Global South, this entailed a de facto sovereignty that excluded their control over their natural resources or food security and promoted a market-driven notion measured by the capacity to attract foreign direct investments. This posed unique challenges for state-building processes, as former colonies, sought to become part of the global market while reducing dependence on former colonial powers and multinational corporations by building economic and technological capacities and developing their industries. Maintained by a balanced mix of coercion and consensus during the process of decolonization, the incorporation of the former colonies into the globalizing patent regime could be seen as a part of the broader efforts led by the US and its allies to build a hegemonic order world order.

The architects of the Bretton Woods and the subsequent postwar world economic order were US and British state officials with Harry Dexter White and J.M Keynes. They aimed to reconcile often conflicting objectives. These involved revitalizing the liberal international economic order and supporting multilateral systems of trade and finance while maintaining domestic macroeconomic autonomy. In the advanced industrialized Global North, this involved addressing postwar reconstruction demands, including the expansion of social and economic security based on social citizenship for the working classes. The postwar order sought to redefine and restore a liberal world order alongside a social state, largely dependent on market-based social provisioning, also seeking to avoid an economic depression as in the 1930s, along with the accompanying crises of social reproduction. These crises, which were worsened during and after World War II, manifested across Europe and the former colonies as hunger and widespread malnutrition, gaining immense geopolitical significance during the Cold War.

The postwar patent regime was largely shaped by these tensions and contradictions, including the contradictions of social reproduction of capitalism that weighed heavily in the minds of the architects of the hegemonic world order, expressed in the postwar ideal of ‘freedom from

want of food' (FAO 1956). One of the key elements of this vision was ensuring that basic human needs, including food security, were met in a way that did not allow markets to undermine public welfare, particularly in the Global South.

Moreover, the tension between the global expansion of capital and the regulation of domestic welfare was central to the postwar political economy in the Global North, as welfare systems incorporated elements of decommodification in essential sectors like healthcare, housing, and education. These systems allowed governments to regulate corporate activities while providing protections for domestic labour forces. The rise of the Keynesian welfare state came to be accepted as part of the new common sense that state regulation could and should coexist with market mechanisms, prompting a shift towards thinking about intellectual property not just in terms of private rights but in terms of public goods. The postwar IP regime, therefore, was not a simple extension of global capitalist interests but a negotiation between global corporate power, state interventions, and the protection of public goods. The contradictions inherent in this negotiation—the tension between commodifying knowledge and ensuring access to essential goods—continue to shape global intellectual debates today.

Thus, postwar human security measures were informed by the widespread recognition of the need to check and moderate the effects of commodification, ensuring that certain sectors—such as pharmaceuticals and agriculture—were regulated to protect from the full force of market forces. This approach reflected the growing consciousness among state officials and policy elites that the social reproduction contradictions of capitalism must be regulated to prevent crises, echoing Polanyi's (2001) warning **t**hat unregulated markets could destroy not only human welfare but the capitalist system itself.

Variegated governance of pharmaceutical patents

The manifestation of social reproduction contradictions is perhaps the most explicit in the case of patents on technologies and products associated with basic human security such as medicines, chemical compounds, vaccines, plant varieties and seeds, medical treatment methods, food production methods, agricultural techniques including crop improvement methods and scientific discoveries of isolated genes, plants, or minerals. For much of the postwar era, pharmaceuticals, germplasm (seeds), plant varieties, and food products continued to be either entirely exempt from patenting or largely left to the discretion of domestic regulations.

Moreover, agriculture and the broader category of intellectual property were excluded from the General Agreement on Tariffs and Trade (GATT), not subject to the rule-based international trade regime along with other commodities. In this context, the postwar patent regime had to balance the protection of private property with the provision of public goods, including basic needs like health and nutrition, especially relevant to the pharmaceutical and agriculture sectors.

Conflicts over patents were acute in pharmaceuticals since drug development is an expensive and risky process (i.e. most research fails to yield marketable products). Yet, once developed, most drugs are easy to replicate and manufacture. Three periods in the global expansion of pharmaceutical patents[38] can be discerned (Shadlen et al. 2020): *(i)* before the mid-1970s, pharmaceutical products were eligible for protection in only a few countries (for instance, only in the UK and the USA in 1960); *(ii)* from the mid-1970s to the early-1990s, pharmaceutical patenting became more widespread in the Global North; *(iii)* from the mid-1990s onward, pharmaceutical patents become nearly universal, approximately including 130 countries.

Except for the Anglo-American legal systems, the scope of patentability was based on distinguishing between process and product patents. For instance, the first German Patent Act of 1877 exempted food products from patentability, while allowing patents on food-related processes. This did not change until the 1967 Patent Act as legal scholars and state officials typically warned against potential problems of availability and access, high prices and the disregard for public goods which unregulated patenting practices entail. Similarly, Switzerland introduced patents for pharmaceutical products only in 1977, while in Italy and France, the ban on drug patents was completely lifted only in 1978. These examples show how flexible protection could contribute to securing stable and relatively accessible conditions of social reproduction, keeping the price of medicine at a level affordable for the lower classes and promoting national development and economic growth in the liberal economic order. After the TRIPS, the opportunity to benefit from

[38] I use 'pharmaceutical patents' as a broader category that includes products and processes. They cover different aspects of the invention, including the chemical composition of a drug (i.e., the active ingredient in a medication), formulation (e.g., the combination of ingredients that make up a tablet, capsule, or injectable form of a drug), method/process of manufacturing (e.g., the process used to produce the drug), and therapeutic use (e.g., patents on the use of a known compound to treat a specific disease or condition, known as second medical use.

Product patents refer specifically to patents on the end product—in this case, the final drug or medication, covering the composition, structure, or formulation of the drug in its final form. The patent protects the chemical substance, for instance, paracetamol or aspirin, not the process used to create it.

such flexibilities and variations that contribute to developing technologies and manufacturing capacities without compromising the access of the poor populations to basic health needs was however denied to the countries of the Global South.

The adaptation of flexible protection based on the process/product distinction by the relatively developed countries in Asia and Latin America, who were capable of developing their productive capacities to produce generic drugs (Muzaka 2018), became a major concern for the industrial powerhouses, particularly because of the alternative models of growth and development they could provoke. In this respect, India was a major target as it was the first to ban product patents in 1971 right after its independence. India's vibrant generic production soon became competitive in the world market and was able to push prices down to affordable levels for its vulnerable populations[39]. Brazil, Argentina, South Korea, Mexico[40], China followed a similar path either by banning patents altogether or reserving them only to processes, emerging as counterhegemonic models of governance capable of challenging the status quo. Thus, rather than only a matter of market dominance, what could be potentially at stake is the liberal principles and rules constitutive of the US-led hegemonic world order, especially in the geopolitical context of the Cold War.

As Muzaka (69)[41] notes, it was not surprising that the US and the European Union (EU) swiftly objected to India's patent laws as soon as the subsequent TRIPS agreement came into force,

[39] For instance, India's patent system based on the Patents and Designs Act of 1911, granted patents for processes but not for pharmaceutical products. This meant that pharmaceutical companies could patent the process by which a drug was made, but they could not patent the drug itself. India's policy was a deliberate strategy to foster local industry, promote drug accessibility, and reduce the reliance on foreign pharmaceuticals (Muzaka 2018, Rikap 2021).

Reaffirming this position with the 1970 Patent Act was a pivotal moment for the pharmaceutical industry and the growth of a robust generic drug market. As a result, India became a major producer of generic medicines, and many foreign pharmaceutical companies were unable to patent their products in India. This system allowed for the domestic production of cheaper medicines, which played a crucial role in ensuring access to affordable healthcare.

[40] Scholars widely recognize Mexico's entry into the production of steroids in the 1960s to have contributed to the end of European dominance in the sector (Drahos 2002, 768).

[41] Unsurprisingly, the complaint against India's patent law provisions was initiated barely a year after TRIPS came into force by the US (later joined by the EU) on behalf of their proprietary pharmaceutical companies. This was the first-ever WTO TRIPS dispute—thus also the first dispute between states over intellectual property to be adjudicated at the international level—and the first to be subjected to the entire arbitration procedures the WTO had been equipped with (Muzaka 2018).

demonstrating the force of coercive power against counterhegemonic challenges. Drahos and Braithwaite (2002) emphasize that the pressures to universalize intellectual property on medicines were, in fact, the response of the US pharmaceutical companies to emerging powers such as India who rapidly developed immense production and technological capacity during the 1960s and 1970s to produce generic drugs without recognizing the US patent laws (Cooper 2008, 56).

The variegated governance of pharmaceutical patents largely remained, however, within the flexibilities allowed by the Paris Convention. Their application in India and Brazil was not radically different from the examples in the Global North which similarly aimed at a strong generic medicines sector. Even though patent law revisions in the South largely remained within the rules of international patent protection, this could potentially turn into a coalescence of counterhegemonic forces to challenge the globalizing commodity form of international law and the capitalist model of development (Muzaka 2018, 70). Additionally, the international fora consisting of the WIPO administering patents with no enforcement mechanism and the United Nations Conference on Trade and Development (UNCTAD) developed as a strong platform for developing countries to voice and promote their interests, could potentially defeat the US proposals on intellectual property (Drahos 2002, 769). Developing countries with loose patent protection and thriving generic industries in the Global South posed a potential counter-hegemonic threat'. Such production could challenge the political agendas in both domestic and global politics by drawing attention to the artificially inflated prices of drugs in developed countries. It also suggested an alternative development model and innovation approach that could promise 'health for all' (Cooper 2008, 56) — one that does not depend on strong, standardized intellectual property protections.

TABLE 2: Patents on pharmaceutical/chemical products and processes (1945-2000)

Country	Pharmaceutical Product Patents	Chemical Product Patents	Process Patents
United States	Granted from the early 20th century (e.g., penicillin in 1948, other drugs earlier)	Since the 19th century	1790
United Kingdom	1977 (EU Patent Law Impact)	1883	1852
Germany	1968 (Post-WWII reforms)	1877	1877
France	1968	1912	1912
Switzerland	1957	1884	1884
India	1972 (Until 2005, process patents only)	1911 (Patents Act)	1911
Brazil	1996 (Product patents for pharmaceuticals after TRIPS compliance)	1996 (after TRIPS)	1996
Argentina	1996 (Product patents for pharmaceuticals after TRIPS compliance)	1996 (after TRIPS)	1996
Mexico	1991 (Product patents for pharmaceuticals after TRIPS compliance)	1991 (after TRIPS)	1991
Other former colonies (South Africa, Malaysia, Egypt, Nigeria)	1995-2005 (TRIPS compliance, many countries switched to product patenting around this period)	1950s -1970s (varied by country, with many former colonies allowing only process patents until TRIPS)	1950s-1970s

PART II

Pharmaceuticals in the 'dark age of patents' and plant genetic resources as a new frontier in intellectual property protection

This section first focuses on the controversies revolving around life-saving medicines to explore the shifting views and dominant discourses about the nature of intellectual property and its use as a tool of corporate power in the 'dark ages of patents' in the US (Silverstein 1991, 34; May and Sell 2006; Muzaka 2018). It then turns to developing countries' proposal of the "common heritage principle" as a more radical challenge raised against the legal form of patents as they apply particularly to plant genetic resources. The Green Revolution that shaped the dynamics of the international postwar 'food regime' along with the Food Aid, largely put an end to these debates by a new ideational and institutional reconfiguration.

A significant postwar turning point occurred when the price of penicillin fell sharply from $3,955 per pound in 1945 to $282 per pound in 1950 largely due to the introduction of compulsory licensing on process patents in the US during World War II (May and Sell 2006, 152-153). This price reduction was a result of state intervention, exposing the monopolistic practices widespread in the pharmaceutical sector—such as price-fixing, market-sharing agreements, and the forced cross-licensing of patents. Corporate patent departments also tightly controlled research output, as exemplified by DuPont's notorious restriction on employees publishing research findings. This growing skepticism about patents arose from the historical context of patent use, cartelization, and the fall of the liberal order, all of which contributed to a rising wave of economic nationalism and critiques of capitalist practices.

State policies during this period "continually [redrew] the boundaries between the value and non-value (or economic and extra-economic) forms of knowledge" (Muzaka 2018, 31). In the Global North, this process involved substantial public investment in scientific research and innovation, showcasing the state's involvement in orienting knowledge production towards public goods over profit. This approach also involved interventions in areas where market forces were deemed insufficient or might result in detrimental outcomes, ensuring that the commodification of knowledge did not undermine welfare systems.

During the interwar period, patents became central to the creation of monopolistic structures and cross-border industrial alliances. The term ‘cartel solidarity’ captures this era’s tendency for large corporations to use patents not only to dominate domestic markets but also to coordinate with international competitors through restrictive patent licensing agreements. These cartels, often operating in the chemicals, pharmaceuticals, and manufacturers, made use of patents to control markets, set prices, and limit the entry of new competitors.

One of the most notable examples of this cartel behaviour occurred in the 1950s when a cartel of pharmaceutical companies—including Pfizer, Bristol, Parke-Davis, and Merck—used patents strategically to divide the global antibiotics market. The companies worked together to fix prices, restrict market access, and share territories, effectively maintaining a tight grip on the antibiotic market across thirteen countries. This cartel demonstrated the use of patents not just to protect individual innovations, but as a tool for coordinating across borders to suppress competition and ensure market dominance. This contrasted with the US government's exercise of compulsory licensing on the process patents to ensure a sufficient supply during World War II. As noted above, the results were dramatic: the price of penicillin fell sharply by approximately 92.87%, only in five years from 1945 to 1950. Having learned their lesson well, in the postwar era, companies like Pfizer, Bristol, Parke-Davis, and Merck actively pursued patents to avoid a similar price collapse and to regain their monopolistic control.

The wave of skepticism about patents after the war was not limited to the US, as the negative consequences of the interwar patent practices became evident. The corporate use of patents to stifle competition, control prices, and consolidate market power had led to the rise of ‘economic nationalism’—a retreat from the international liberal order that had previously promoted free trade and competition. Patents were seen as a tool for economic nationalism and protectionism, rather than innovation and public benefit.

The postwar skepticism was not only about the monopolistic practices themselves but also about their implications for the liberal international order. The postwar skepticism was not only about the monopolistic practices themselves but also about their detrimental impact on global economic dynamics based on the principles of liberal economy. The focus on patents as economic tools for restricting access to innovation underlined their role in reinforcing monopolies and thwarting the ideals of free-market competition. Critics, like Perelman (2014, 26), argued that patents represented a failure of the market. He claimed that the prevalence of patents was “not the

pinnacle of market economy," but instead an "expression of the failure of the market" indicating larger structural issues within capitalism and the crisis-ridden nature of capitalist societies.

This growing disillusionment culminated in a period of heightened criticism during and the aftermath of World War II. This anti-patent sentiment could be viewed as a part of the broader efforts of the US and its allies to redefine liberalism in the face of growing concerns about the power of multinational corporations and their influence on global markets, which set the stage for the postwar backlash against patents. The antibiotics cartel case highlighted how patents did not only control domestic markets but also coordinated internationally to suppress competition. This critical stance also reflected the hegemonic views about the state's role in the postwar, in contrast to the dismissal of the 'reality of political power' of nineteenth-century liberalism based on the neoclassical political economy. This shift in perspective was crucial in reshaping patent laws and policies in the latter half of the twentieth century, as governments and international bodies sought to address the monopolistic and anti-competitive effects of patent practices that had become deeply embedded in corporate strategies.

Pharmaceutical patents, monopolies and anti-trust laws

Amid postwar optimism about reconstructing the liberal order and faith in the competitive market, the 'dark age' of patents marked a shift in understanding intellectual property and corporate power, signalling the need for regulation to prevent threats to both the economy and access to life-saving medicines. In the US, skepticism about patents was reflected in antitrust laws and Supreme Court decisions questioning their compatibility with free market principles. Patents were scrutinized for promoting market dominance, blocking competition, and raising prices—issues particularly concerning poor populations dependent on essential medicines.

In the 1950s, the antibiotic cartel and its monopolistic practices became a focal point of hearings in the Federal Trade Commission (FTC) and Congress, highlighting the pharmaceutical industry's role in limiting access to life-saving medicines. The Temporary National Economic Committee (TNEC), formed in 1937 to investigate economic crises and inequalities, played a key role in documenting the monopolistic effects of patents. Despite World War II interruptions, the TNEC's reports emphasized the dangers of monopolies and the need for stricter patent regulations to address the concentration of power, particularly in pharmaceuticals.

These debates reflect growing anti-patent sentiment as concerns over monopolies in the pharmaceutical industry took center stage. The crisis over access to HIV/AIDS drugs decades later mirrored earlier postwar concerns, showing the long history of resistance to basing human security on patent protection. The concentration of power in the prescription drug industry was investigated by the Subcommittee on Antitrust and Monopoly led by Senator Estes Kefauver. Between 1957 and 1962, the Subcommittee examined drug prices within the US, and between the US and Europe documenting the much higher prices of basic medicines such as penicillin, diabetes drugs, arthritis drugs and antibiotics (Kefauver 1965) Policymakers recognized that patents, especially in pharmaceuticals, exacerbated inequalities by fostering private profits at the expense of public welfare. As Bud (2005, 332) notes, the policy debates of this time "played a key part in formalizing American society's attitudes toward access to the new array of potent drugs" and laid the groundwork for future policy discussions about drugs, particularly antibiotics.

The challenge to patents on essential medicines was closely tied to fairness in distributing the benefits of innovation and the concentration of wealth and power in the pharmaceutical sector. While these debates echoed nineteenth-century controversies, mid-twentieth-century views framed patents as monopolistic tools, influenced by the destabilizing effects of an unchecked market economy. The rise of large pharmaceutical corporations prompted a shift in understanding patents, contrasting with the liberal utopia of self-regulation where monopolies were temporary and politically motivated.

Skepticism about patents reflected fears that they could privatize knowledge, restrict access to essential innovations, and undermine the social order. Critics argued that the commodification of knowledge could erode social welfare, with the public domain crucial for supporting it. These concerns remained central to political debates on patents, despite being sidelined by neoliberal patent regimes. The hearings contributed to important legislative changes, notably the Drug Amendments of 1962, which responded to concerns about drug companies profiting from ineffective or unsafe products. While these amendments strengthened drug safety regulation, they did not substantially challenge corporate power or the legal form of intellectual property (Bud 2005). Despite recognizing potential threats, the hearings reaffirmed liberal faith in competition and free enterprise.

Private vs. Public: Myth of the 'heroic inventor/entrepreneur'

It is well-documented that the state and public agencies have been, and are still involved, in pathbreaking innovation (Landau et al. 1999; Boldrin and Levine 2010; Phillips et al. 2010; Mazzucato 2013; Muzaka 2018; Hajighasemi et al. 2022). The rise of the US pharmaceutical sector post-WWII and the re-emergence of the European pharmaceutical sector during the 1950s and 1960s is a paradigmatic example where large sums of public money were channelled towards funding research and universities. Muzaka (2018, 67) notes that the period often referred to as the "dark ages" of patents was actually a time of significant pharmaceutical innovation, with an average of ninety-three new molecular entities introduced each year in the 1960s. However, as intellectual property protections for pharmaceuticals became stronger starting in the 1980s, the number of new entities introduced declined, dropping to forty-four in the 1990s and about twenty-five in the first decade of the twenty-first century.

In the neoliberal patent regime, the disconnect between stronger patent protection and innovation has continued to dramatically grow with systematic compromise on diseases predominantly affecting the Global South, like malaria, tuberculosis, and neglected tropical diseases, which are often seen as less profitable markets (WHO and reports from Doctors Without Borders (MSF). While research on vaccines and treatments for diseases such as HIV/AIDS, hepatitis, and tuberculosis have seen some improvements, the uneven distribution of the medical research agenda driven by corporations indicates growing health inequalities. As Benatar, Gill and Bakker (2009, 350) emphasize, "only 18 of 1,556 approved drug patents issued in 1975-2004 were for use against tropical diseases and 3 against tuberculosis". A major study (Bloom and Sachs 1998) found that more than half of Africa's growth shortfall in comparison to high-growth countries of East Asia could be explained statistically by disease burden, demography and geography. It is further stated that sub-Saharan Africa's GDP would be up to 32% greater if malaria had been eradicated 35 years ago (Bloom and Sachs 1998, 262).

In the postwar era, the US federal government funded large-scale research projects through agencies like the National Institutes of Health (NIH)**,** the National Science Foundation (NSF)**,** and the Department of Defense (DOD)**.** Research outcomes from these projects were often treated as public goods, with patents typically owned by the government, not the researchers or universities. Notably, the reward system (such as grants and tenure) was largely independent of the commercialization of research through patents. These policies aimed to restrict the

commodification of knowledge by preventing patent-holder corporations from becoming the central driver of research and ensuring that essential discoveries, particularly those impacting public health**,** remained accessible without being subject to market forces. [42] Notably, the role of the state and public agencies was not restricted to addressing market failures - the US federal government was a significant player in the knowledge production process, particularly when it came to research funded by federal agencies. In the postwar era, the governments played a crucial role in reconfiguring the relationships between economic production and social reproduction; in the case of patents, this involved 'redrawing the boundaries between economic value and 'extra-economic forms' of knowledge' to support human security.

The prevalence of strong institutional structures of public healthcare, state-funded institutions of public health and public-private partnerships in the US and Europe, at least partially and temporarily, could be said to discredit the myth of the nineteenth-century 'heroic inventor' that closely associated capital and the private sector as *inherently* innovative in contrast with the state as the realm of unfreedom and inefficiency.

The skepticism surrounding patents in the US did not translate into a counterhegemonic movement capable of radically challenging the nature of intellectual property. Nevertheless, the (re)construction of patents as monopolies signalled a growing consensus about the potential threats posed by private corporations and unregulated patenting, particularly in the context of health governance and social reproduction. Publicly funded research and excluding the products of that research from patentability limited the scope of commodification, redrawing the boundaries between the private and the public.

This perspective suggests that patents, in principle, could be subject to democratic accountability and that knowledge production should, and must, be directed toward supporting public goods. Concomitantly, the balance between private gain and public benefit of innovations, to which ends knowledge production could and should serve, and their potential threats to the health of the poor populations became a subject of public contestation within broader political discourse. This was a major shift from the earlier idea of intellectual property protection as

[42] Some pathbreaking inventions include the well-known cases of the penicillin (1928), the polio vaccine (1950s), the development of corticosteroids to treat autoimmune diseases and inflammation (1940s-1950s) as well as AZT known as one of the first effective HIV/AIDS treatments (1980s-1990s). Similarly, the recent COVID-19 vaccines largely benefitted from governments' financial support and investment in the research, development, and production of the vaccine.

sacrosanct. Thus, the ideological and institutional foundations of the neoliberal narrative that attributes an inherent inventiveness and efficiency to private enterprise for the benefit of all and fetishizes innovation as an end in itself was largely absent in the era of state-managed capitalism, at least until the emergence of new social forces with the decline in profits in industrial capitalism and the need to relocate capital accumulation at the genetic, microbial and cellular levels.

The New International Economic Order (NIEO) and Intellectual Property Protection on Plant Genetic Resources

This section shifts from health to another critical aspect of human security—food security—and examines a new frontier of intellectual property protection that emerged in the 1960s and 1970s (Muzaka 2018). This development, closely tied to the global governance of hunger and food security, was the creation of intellectual property forms for plant varieties. A stronger counterhegemonic alliance within the Global South emerged with a progressive agenda that challenged private property over plant genetic resources and the global frameworks imposed by hegemonic powers. This was part of the broader NIEO as a counter-hegemonic front, which sought to reshape the political economy and global order[43]. As Cox (1979, 259) put it, "it mobilized a fresh challenge to the intellectual hegemony of liberal economics and its claims to an exclusive 'rationality'". Drawing on the historical struggles against neo-colonialism, the initial initiative sought to tackle the global economic crisis by establishing a consensus on reforming trade, finance, and debt (Murphy 1984; UNGA 1974; UNGA 1974a). The founding declarations of the NIEO prompted a comprehensive review of the global development framework within the UN system. The NIEO's proposals, grounded in an alternative ontology and normative framework, opposed private property over plant genetic resources and advocated for an ecological world order based on social justice and solidarity. In hindsight, this was the last time that a counterhegemonic political imaginary from the Global South emerged as a real possibility (Cox 1979; Prashad 2007; Nicholls 2024).

[43] The draft declarations of the NIEO were presented to the UN General Assembly by the leaders of 95 countries who were part of the G77 group. More recently in 2023, Progressive International (PI) opened the principles of the NIEO into the agenda of Havana 2023, seeking to "Renew the Non-Aligned Movement" and "Renovate the NIEO" (Havana Congress 2023).

Unlike the nineteenth-century regime, which discovered hunger as undermining the very basis of expanding industrial development by challenging the foundations of workers' and their families' labour power and conditions of social reproduction, the postwar regime constructed hunger as a geopolitical problem in the context of the Cold War and the 'tyranny of communism'. In the geopolitical context of the Cold War, 'freedom from want of food' was a part of the fight against communism, more broadly against totalitarian regimes based on the interwar experience where impoverishing rural regions and agricultural sectors were the major supporters of the fascist regimes to come in power in Germany, Hungary and Austria. Hunger and the vulnerable living conditions especially of the rural agricultural producers, particularly the small farmers of the developing world, were framed as a geopolitical security threat or a civilizational risk for the 'free world'. In 1954, Hubert Humphrey the then-senator from Minnesota (cited in Ruttan 1993, 2) said in support of the food aid:

> We have got to look upon America's food abundance, not as a liability, but as a real asset…Wise statesmanship and leadership can convert these surpluses into a great asset for checking communist aggression. Communism has no greater ally than hunger; and democracy and freedom no greater ally than an abundance of food.

Another factor reflecting the centrality of food and agriculture for the postwar order was the American dominance as a major grain exporter and the grain surplus which had been accumulating because of the vast number of subsidies provided to farmers throughout the 1920s and 1930s. By 1945, the grain surplus in the US, along with other major grain exporters, became a major economic problem, mainly because of the downward pressure on national market prices which negatively affected farmer's income and the rising costs of its storage. In contrast with the British farmers with no competitive edge in world markets during the first food regime under British hegemony, the US agricultural sector was competitive in the world market and had to be protected against the global market economy and falling prices. The surplus was channelled onto the global markets just as hunger in the newly independent nations of South Asia was increasing.

The Food Aid program was established in 1954 with the passage of the US Agricultural Trade Development and Assistance Act, also known as Public Law (PL) 480. Dissolving the surplus through commercial exports mainly through concessional 'sales' to the developing countries which involved funding long-term loans at below commercial rates to purchase US wheat packaged as a humanitarian food aid became inextricably linked strategies, described by Clapp

(2013, 28) as "the grey area between commercial sales and development aid". According to McMichael (2009, 2013) and Friedmann (1982, 1993, 2005, 2009), this obscured the difference between aid and trade which facilitated the broader legitimation of the food aid that packaged it as 'humanitarian, development, anything but a trade relation' (Friedmann 2009, 337) as food aid became a geopolitical power resource. Food Aid hinged on diverse demands and interests of divergent groups and segments of the population including grain trading corporations, higher income for US farmers, cheap food to promote the industrialization process and the future consumers/industrial workers, the governments and the ruling elites of the developing countries. While the immediate purpose of PL 480 was surplus disposal, its long-term goal was to support economic development in recipient countries to create new markets for American wheat and ensure their dependence on US corporations to feed potential wage labourers throughout the developing countries' industrialization process.

The policy projection was that once the developing countries no longer needed food aid, they would become 'independent' commercial grain importers, largely dependent on US grains. The fact that in 1996 nine out of ten countries importing US agricultural products were former recipients of the food aid (Francis Moore Lappe cited in Clapp 2011, 29) shows its long-term success. Food aid as a means of globally distributing the surplus of the major grain exporters was notably institutionalized by multilateral initiatives, such as the World Food Program (WFP) in 1963 and the Food Aid Convention (FAC) in 1967.

In sum, hunger in the postwar era, like its nineteenth-century counterpart, was once again diagnosed as a transnational problem. However, the growing consensus was that national regulation of governments and international organizations, principally the FAO, established as a part of the postwar liberal order declaring commitment to international cooperation, were principal agents to secure food security. Nonetheless, the humanitarian logic underlying the seemingly neutral liberal principles of international cooperation largely relied on exporting to developing countries the capitalist industrial agriculture model based on economic efficiency and productivity as the only means to ensure food security. The framing of hunger as a problem facing the 'free world,' 'humanity,' or a vague 'international community' often obscures the fact that addressing hunger or a global food crisis involves political decisions. These decisions are typically delegated to international institutions that lack direct accountability to the populations most affected by hunger. As T.A. Wise (2014) succinctly put it:

> There is no 'we' who feed the world. There are, mostly, hundreds of millions of small-scale farmers. And there is no abstract 'world' out there needing to be fed. There are about one billion hungry people, nearly all in developing countries. The majority are some of those same small-scale farmers. The rest are poor because they are unemployed or underemployed. Increasing the industrial production of agricultural commodities does almost nothing for these people. Oddly enough, it can even make them hungrier.

Further to this, I propose that the Green Revolution (in)famously known under the slogan of 'miracle seeds' complemented the hegemonic role of the Food Aid of the 'second food regime' and marked a pivotal moment in the long process of depoliticizing the governance of social reproduction and its contradictions in ways that do not compromise the primacy of capital as it largely distances the politics of subsistence and hunger from the processes of democratic accountability, contestation and radical politics. Throughout the Green Revolution, the postwar patent skepticism and opposition to patent protection over plant genetic resources and plant varieties gradually started to wither away as new social forces coalescing around the growing interest in extending new forms of intellectual property protection to plants started to push a fetishized view of innovation as a promising solution to resolve, as it were, the tensions.

The official vision of the FAO was established as a result of a 'battle of ideas' between competing approaches to the global governance of food security, agriculture and liberal political economy, and their relationships, which involved social and political forces of the international historical bloc including the global policymakers, intellectuals, scientists, the ruling elites with close connections to the US-based multinational corporations in the agriculture, pharmaceuticals and chemical sectors. To locate the vision that eventually established the FAO in a broader ideological spectrum and bring forth the core ideas as well as its limitations, I turn to the proposal that was eventually rejected, the road that has not been taken which was provokingly called the 'New Gold Standard of Health'.

This proposal was prepared by a group of nutritional scientists, with the lead of John Boyd Orr, a British nutritional scientist known for his research on dietary determinants of health and advocacy to raise the level of health and nutrition in Britain which has significantly shaped the

milieu of public policy[44] since the 1930s. Central to this approach was the view of hunger as a matter of malnutrition rather than calories sufficient for subsistence. The crux of Boyd Orr's argument is that malnutrition was a matter of social injustice caused by the political economic organization of society, *not* an inherent, 'natural' feature of the world. One of the indispensable objectives of economic recovery and agricultural reconstruction must be to provide a food supply sufficient for health, "available at a price within the reach of the poorest" (Daunton 2019, 153). Orr's approach which was supported also by Henry Wallace, the former US Secretary of Agriculture and the Vice President of the Roosevelt[45] administration at the time, went beyond the hegemonic models of liberal economy that exclusively focused on monetary and financial solutions, as advocated by U.S. Treasury officials like Henry Morgenthau and Harry Dexter White, who promoted multilateral trade and stable monetary systems.

While, in many respects, they shared the liberal optimism of the time and agreed with many social democratic principles, Orr's vision for the international order and global governance diverged from the mainstream and disturbed global ruling elites and policymakers. In the words of a senior official at the League of Nations, this vision entails a broader intellectual shift: "Ever since the time of Adam Smith economic thought has centred around the art of production or the conditions of citizens as producers. The nutrition movement reflects the first serious endeavour, certainly on an international scale, to consider the economics not of production but of consumption" (Alexander Loveday cited in Daunton 2019, 158).

The internationalist vision to provide food for everyone on the 'new gold standard of health' was a challenge directly raised against the intellectual hegemony of a liberal economy. Ambitiously juxtaposing the institutional epitome of the international liberal order based on

[44] The findings of his social survey (1936) of the dietary regimes of British families at different income levels revealed immense inequalities between social classes in terms of adequate diet and showed severe deficiency in all minerals and vitamins for half of the population. The finding that especially workers receiving public relief were unable to maintain health due to insufficiently nutritious diets caused an outrage at the Ministry of Health and the government refused publishing the report (Daunton 2019, 153)

[45] When in 1943 Franklin D. Roosevelt called for a conference on food and agriculture as the first official meeting of postwar reconstruction, John Maynard Keynes was dismayed to learn that a liberal international order should be launched by discussing nutritious food and agriculture. In a letter to E.F. Penrose in 1943, the economic advisor to the American Ambassador in London, he wrote, "What you are saying is that your President with his great political insight has decided that the best strategy for post-war reconstruction is to start with vitamins and then by a circuitous route work round to the international balance of payments!" (Penrose 1953, 117; Daunton 2019, 147).

monetary and financial stability – that is, the 'gold standard' – with another one based on non-economistic principles and values entailed a political-economic imaginary not aligned with the vision prevalent among global policy elites. From this perspective, restructuring global food systems to ensure that the poorest and most marginalized have access to adequate food is a top priority.

This underscores that the provision of basic human needs should take precedence over profit-driven motives and that promoting production increase and/or monetary and financial stability as a policy response to social crises would by no means be adequate. However, as Clapp and Moseley (2020) emphasize, throughout the postwar era, policy responses to food crises have been predominantly based on increasing production. Building the international order on a different ontology and normative framework would suggest broader compromises of the advanced industrialized countries for the newly independent developing countries based on the principle of social justice and institutionally recognized enforceable right to nutritious food.

PART III

The International Food Board and 'Ever-Normal Granary'

Some of the suggestions for new international institutions and global governance mechanisms created outrage. Following up on his earlier call to build a National Food Board for Britain, with commodity boards for individual foodstuffs to ensure sufficient supplies for everyone at a guaranteed price, Orr called for a "World Food Board" to plan and coordinate operationalizing the right to health for all, which he aspired, would ideally lead to a world government (Orr 1956; Daunton 2019; Abbott 2021). This would involve the application of nutritional science to increase the production of 'protective food' such as eggs, vegetables, fruit, dairy products, and meat high in nutritional value for regions suffering from malnutrition. (Orr 1940)

As Orr initiated an International Emergency Food Council to respond to the pressing hunger in the aftermath of the war, he further urged the establishment of a nationally and internationally combined World Food Board, which was applauded by some for integrating "domestic rights and duties with an understanding of global needs, … generating a "new symbiotic

relationship between social citizenship and global coordination." (Frenk Trentmann cited in Daunton 2019, 163). The Board would purchase surplus food commodities when they were cheap and stockpile them. While stabilizing prices, the surplus food stocks would be allocated to poor countries. Another one was to establish an international 'Ever-Normal Granary' to store basic foodstuff for food shortages and to create price stability in the world market, suggesting a long-term solution based on equity and the right to food rather than a temporary emergency aid mobilized during food shortages. Orr's vision also included promoting fair trade policies and social safety nets that could ensure countries were not left vulnerable to market fluctuations.

Orr's vision of a more progressive FAO was scaled back mainly by Anglo-American social and political forces. The US wanted the FAO to be a less active, consultative organization, pushing against Orr's initiatives to keep food as a public good and proposing a trade-based solution, around the International Trade Organization (ITO) whose charter was under discussion at the time. In his response to the US government's proposal on a trade-based solution, Orr (1967, 173) emphasized: "The ITO …would regard trade as an end in itself", while "trade in food [must be] an exception to other forms of trade since "food, a primary necessity of life, had to be treated differently from other goods like motor cars which were not vital". Even though American delegates supported Orr's attendance at the Hot Springs Conference as a British delegate, the "British government refused for reasons that Orr understood: he could not represent his own government's preference for cheap imported food" (Daunton 2019, 162). Eventually, FAO's mandate to improve nutrition and food security mainly through increased agricultural productivity was approved. In the late 1940s, the FAO coordinated the redistribution of surplus grain to developing countries and international grain production to stabilize food prices. However, the US and the UK withdrew their support for internationally coordinated supply schemes (Staples 2003, Margulis 2017), causing the organization to shift into a consultative body focused primarily on providing short-term food aid and technical assistance by the 1950s.

The rejection of Orr's proposal as the founding vision for the FAO highlights the nature and ideological and institutional limitations of postwar global governance. Although the FAO was not granted the same level of authority that would have been given to a food board, it was established with a mandate covering global food and agriculture as a whole. In fact, except for the UN Security Council, no other part of the emerging UN system was assigned such significant

powers in the realm of global governance as those that would have been held by a food board of food security (Gustafson and Markie 2009, 183).

More broadly, this situation illustrates the common sense around the global governance of food security was mainly constructed as an issue of international cooperation which largely leaves the postwar governance of social reproduction contradictions, the subsistence crisis in the Global South and the deepening global health inequalities to this vague realm which tends to be defined by hegemonic social and political forces. While fighting hunger was collectively declared of vital importance, under the principle of international cooperation, it was addressed through temporary, depoliticized solutions such as technical aid that promoted first-world efficiency, and philanthropic and humanitarian initiatives.

Also, the World Bank was prioritized to produce 'legitimate' knowledge about development priorities and global policies to combat hunger, leaving intact the ideological hegemony of the principles of liberal economy along with the structural inequalities and the institutional order organized in a top-down fashion by the global elites. Notably, the recent self-declared identity and the mission of the World Bank as a 'Knowledge Bank' (Mehta, 2001) producing 'cutting-edge policy advice' attests to this long-term orientation in global governance. Despite the limitations and contradictions of postwar governance, it is important to note that the dominant view of food and agriculture was that foodstuff was not a commodity. This was explicit, especially in the way the relationship between agriculture, food security and international trade was ideologically constructed throughout the early GATT negotiations until the Uruguay Round.

UN Havana Charter for the International Trade Organization and the GATT (1948)

Food security, agricultural trade and their relationships have been deeply contested and negotiated throughout the entire postwar period, long before the Uruguay Round of the GATT when it was officially subsumed under the trade regime for the first time eventually under the disciplinary neoliberal regime of the WTO.

The Havana Charter for the ITO in 1947 stated the importance of trade for agricultural products and recognized flexibilities to control supply and fair prices (UN 1948, 34). In addition to allowing temporary export restrictions and prohibitions on agricultural products to prevent critical shortages of foodstuff, 'the Charter also recognized that Inter-governmental Commodity Agreements (ICAs) could play a role in the expansion of consumption of basic foodstuffs by

allowing "the distribution of basic foods at special prices" (UN 1948, 78). This is an important point showing that in addition to allowing states to apply export restrictions to agricultural trade, the Havana Charter also set making food available at low prices through ICA's a major aim of the ITO to promote food security. Yet, simultaneously, the temporary nature of the restrictions also suggested that regulating international trade was an exception to the 'normal' conditions (Margulis 2017), suggesting that the rules of free trade as the commonsense framework to be implemented. Despite allowing such measures for food security as exceptions, the projected vision for the ITO was to promote free trade. The Charter also authorized ITO for regulating labor laws and universalizing the protection of intellectual property. The developing countries largely opposed the Havana Charter mainly due to its free trade orientation to reduce tariffs.

The Havana Charter, thereby the ITO, was not ratified by the US Senate[46] mainly because of the concerns about losing economic and political power over global agricultural policy to a complex institution, which would also exert binding rules on trade. A major concern was that the ITO was not only based on a free trade agreement but implied a broader global governance mechanism capable of complicating US policies and could potentially interfere with the subsidies provided to American farmers. ITO was eventually replaced with the GATT perceived as a more flexible multilateral framework that allows bilateral trade agreements and negotiations rather than imposing strict, binding rules.[47] As Margulis (2014) highlights agricultural exceptionalism to free trade was maintained within the GATT, while the mechanism of ICA's that would regulate market prices was excluded from GATT.

These suggest the unique status of food and agriculture in the 'sea of liberalization'; namely that it is not a commodity tradeable like others whose price is to be determined by the market. This exceptionalism did not entirely stem from humanitarian concerns but was always intertwined with US interest as a major grain exporter to maintain its control over global policies over agriculture, which as discussed, had pivotal significance for its status of hegemonic leadership.

[46] Notably, US' rejection to ratify the Charter and thereby the ITO shows its reluctance to approve a formal international organization as a relatively autonomous body to govern international trade. This, according to scholars, prepared the ground for the food aid regime it later established which was operationalized along with the GATT.

[47] For a thorough analysis of debates on food security and agriculture in the pre-Uruguay Rounds of the GATT - Dillon Round (1960-62), Kennedy Round (1963-1967), Tokyo Round (1973-1979 - see (Margulis 2017).

Food (In)Security as Self-Sufficiency and the Shortage of Supply

Throughout the entire postwar period, food insecurity was ultimately framed as a problem of inadequate supply—whether due to low production, distribution inefficiencies, or disruptions in the market. Reflecting the ideological framework of the capitalist industrial development model, this view emphasizes increasing production efficiency and optimizing supply chains to meet demand as primary solutions. This aligns with the capitalist approach of improving production methods, such as through industrial agriculture and the application of modern farming technologies, to increase output and resolve perceived shortages. The underlying expectation was that market mechanisms—such as global trade and the expansion of agricultural productivity—would address shortages.

On the other hand, as our discussion so far suggests, the belief in the power of markets is balanced out by the recognition of 'the reality of power' which, as Polanyi (2001) suggested, was entirely denied in the liberal utopia of the market economy based on a self-regulated market. The postwar world order instead recognized the ontological and political significance of the state, epitomized in the Western liberal democratic state, as the primary agent responsible for the provision of basic needs, as political power was, to an extent, aligned with social reproduction (Fraser 2016). Rules on export restrictions, prohibitions and exceptions on international trade negotiated as early as the Havana Charter, all recognized that domestic food security came before international trade.

The Green Revolution and 'Miracle Seeds': Institutionalizing the 'Transfer' of Plant Genetic Resources from the Global South and Patents in Food Security

The so-called Green Revolution – a joint project of the US state and corporate philanthropy as a response to the inadequate food supply in the 1960s – is widely recognized as a pathbreaking period in the historical trajectory of agrarian modernization, particularly as the milestone of the US export of the industrial agriculture model to the developing world. Numerous aspects of the significance of the Green Revolution have been extensively explored, producing an immense literature. My specific interest lies in highlighting the ways in which the Green Revolution has come to shape the discourse of food security and its global governance. The Green Revolution, I

contend, is a systematic, deeply gendered and racialized devaluation of the forms of knowledge, and practices of subsistence.

Intellectual property rights and food security, which have largely remained separate converged, and eventually overlapped in ways that suggest a penetrating economistic logic into the governance of social reproduction. So, the following question must be addressed: how was the Green Revolution legitimated in the postwar context where the governance of agriculture and food security was largely distinguished and protected ideologically and institutionally from the economistic logic of the market economy and competition, especially when the immense transformations it introduced to the daily lives and social reproduction practices of the farmers and peasants in the developing countries?

As is well known, the Green Revolution is a joint project driven by the US state and public institutions in partnership with the Rockefeller Foundation, the World Bank and the FAO to replace the peasant agriculture based on traditional farming practices with an input-intensive industrialized agricultural production as a means of increasing the efficiency and productivity of agriculture in the developing countries. It included scientists, plant breeders, corporate executives, state officials, and private and public researchers from the US as well as the receiving countries. While it roughly took place between mid-1940s and 1970s[48], the project gained traction by the early 1960s, when concerns about a 'potential world shortage of food' resurfaced mostly "prompted by a Malthusian interpretation of the population growth and lagging agricultural production in the developing countries" (Margulis, 28; Patel 2013; Perkins 1997).

The outlook on hunger underpinning the Green Revolution, then, was continuous with the postwar common sense of hunger as a shortage of adequate supply which typically fits within the contours of the Malthusian language of scarcity and demand, intertwined with fears around national security and the 'tyranny of communism'. As scholars duly note, the Green Revolution was a geopolitical and biopolitical project (Perkins 1997; Cullather 2010; Patel 2013).[49] It can be

[48] It is typically dated from the beginning of the Rockefeller Foundation's Mexican Agricultural Program (MAP) in 1943 until 1970, when MAP's Norman Borlaug became the recipient of the Nobel peace prize for his innovations in plant breeding.

[49] The Rockefeller Foundation often invoked neo-Malthusian approaches that connected population growth, food scarcity, and U.S. national security, claiming the importance of the "price-credit-fertilizer-contraceptive combination" to "overcome the lethargy associated with traditional farming" (Cullather 2010, 67; Perkins 1997, 135).

argued that while it aligned with the postwar common sense of food insecurity as the shortage of supply, the perspective of the project was broader in its focus on the 'management of human life' in terms of hunger and food, and the organization of the ecological conditions of existence, and subsistence practices.

Thus, as much as it was a political-economic project of industrializing agriculture, it was equally a project of restructuring the social reproduction patterns, in the agrarian communities of the Global South where the distinction between social reproduction and production can hardly be drawn (Mezzadri 2024). Also notably, through various acts, and legislations, such as Plant Breeders' Rights (PBRs) embodied in international institutions such as the Union for the Protection of Plant Variety Rights (UPOV), and a public-private network of international research institutions the Green Revolution legitimized/institutionalized the 'transfer', as it were, of genetic resources from the Global South to the North. In many respects the apparent 'success' of the Green Revolution and its persistent legacy today rely on undermining, obscuring and undervaluing, in gendered and racialized ways, the various forces of social reproduction (Barca 2018) and forms of labour involved.

The label 'Green Revolution' was by no means arbitrary. Rather, as critical scholars emphasize, this label situated it on par with and as fundamentally different from, if not counter to, the red revolution of the Soviets and the white revolution of the Shah of Iran (Patel 2013; Perkins 1997; Nally and Taylor 2015).[50] This positioning implies that it is a radical transformation, on par with a revolution, yet without the deep political and social instability and the radical 'politics' of a revolution that topples the dominant relations of power.

What we can call the 'depoliticizing politics' of the Green Revolution was largely based on a political imaginary that technological breakthroughs in agriculture, could bring about deep social transformations without a radical political transformation. Compatible with a liberal ideological framework, this vision largely perceives knowledge production as a neutral, technical realm detached from power relations, rendering invisible the pressing questions around which kind of knowledge counts 'legitimate', 'relevant' and 'valuable' for agriculture and broader conditions of social reproduction.

[50] William Gaud, a U.S. government official and agricultural expert, is credited for coining the label 'Green Revolution' at a meeting of the Society for International Development in 1968.

This was of immense importance in the geopolitical context of the Cold War and the newly decolonized states where peasants' demands for land reforms and challenges to the present land entitlements and control over natural resources were largely inherited from the colonial era. Critical scholars (Ferguson 1994; Perkins 1997; Patel 2003; Gilly 2005) notably draw attention to a recurring pattern in the historical trajectory of the unfolding of the Green Revolution. Starting with the joint decision of the US government and the Rockefeller Foundation to start the project in Mexico, in cooperation with the Mexican ruling elites was a critical moment in the struggles over productive resources. Scholars (Gilly 2005; Patel 2013) note that the Green Revolution was initiated following the revolution, a peasant uprising, and the nationalization of resource wealth, all while elite consolidation was taking place. Critical scholars discern a similar pattern of quieting the politics of land, in the cases of India, the Philippines and Turkey (Humphrey 1969; Fitzgerald 1986; Patel 2013; Adalet 2022). [51]

In this respect, the Green Revolution brought together divergent social and political forces, including local government officials, agricultural sectors especially the middle and large-scale farmers, and big landowners under the promise of solving the food problem without toppling the existing property relations on land. In Kloppenburg's (1988, 158) words, it was a "volatile mix of business, philanthropy, science and politics that marked the Green Revolution". As Ferguson (1994, 251) succinctly puts it based on his analysis of the unfolding of the Green Revolution in Lesotho, "technocratic concerns trumped considerations of power and knowledge. The apparatus of the Green Revolution was an anti-politics machine". Remarkably, this 'machine' largely pivoted on a fetishized notion of knowledge (production) as 'innovation', which was, by the 1980s, exclusively associated with intellectual property and the private sector at the expense of the 'public' and the commons.

As previously noted, the Green Revolution, alongside Food Aid, was a pivotal component of the food regime, contributing to its legitimation through the narrative of the 'triumph of technology over hunger'—a 'technological fix' (Shiva 2016, Harvey 2003) that became the common sense approach to governing hunger and food security. The 'conquest of hunger by technology' served as a legitimizing story rooted in the common understanding of food (in)security

[51] New agricultural strategy in India was "an attempt by the government to solve the food problem of the country without upsetting existing land relations. It relied heavily on those who had to lose most from a policy of radical land reform" (Dasgupta 1977, 373).

primarily as a 'shortage of supply,' one that could be addressed by using productive and efficient 'miracle seeds.' This narrative obscured the fact that the seeds were also a product of plant genetic resources developed over generations by 'social reproductive forces' (Barca 2018), including the labour of peasants, subsistence farmers—often women—and the work of nature. It raises questions about which forms of knowledge and whose labour are considered 'relevant,' 'valuable,' and 'legitimately' appropriated.

This prompts political questions about the direction of scientific strategies, including which crops to cultivate and which sectors of farmers should receive support.[52] As Patel (2013, 4) underscores, "in legitimizing the Green Revolution, knowledge matters." This encompasses not only producing knowledge about the best methods of plant cultivation and propagation, which plant genetic resources are of [economic] value, but also knowledge about how governments must support and invest in agriculture, and which state policies and actions are known as legitimate[53], suggesting the creation of a Foucauldian 'regime of truth' that establishes the criteria, codes of conduct, and policy priorities for "legitimate" agricultural reform (Patel 2013, 4). The dominant narrative of the Green Revolution as a success story characterized by unprecedentedly higher yields promised that technology could effectively feed the world (Borlaug 1970, Alcántara 1974, Conway 1997, Davies 2003).

Between 1960 and 1985, the rise in agricultural yields across Latin America, Africa, and Asia was remarkable as food production, especially global cereal and grain production of new varieties in developing countries more than doubled (Conway 1997) and figures of hunger decreased over these decades. The Green Revolution also implied immense rapid transformations of the crop varieties traditionally cultivated in these regions, suggesting a shift towards crops and large-scale models of agriculture. The target and the main beneficiaries of the Revolution were big

[52] The choice of wheat as the 'miracle crop' in Mexico's Green Revolution instead of corn which was the most common one, with nearly ten times more land planted corn in 1950, is a good example in this respect, illustrating that the strategy was not geared towards peasants and small-scale farmers for whom corn was the widespread dietary preference and source of income (Patel 2013, 9). As early as 1957, "90 % of Mexican wheat acreage was planted with hybrid and improved seed" and the vast increase in fertilizer use by twenty times between 1949 and 1966 applied only to 15% of the entire harvested region. Notably, only 12 percent of the corn acreage received treatment by improved seeds (Patel 2013, 10; Fitzgerald 1986).

[53] Patel (2013, 4) references Friedmann's perspective on the changing views at the end of the second food regime, highlighting that subsidized exports were deemed undesirable and foolish, a viewpoint that gained legitimacy in the growing decades.

agribusinesses, which opened the gap between large agribusiness, wealthy landowners and small and medium-scale farmers of the *ejidos* (Hicks 1967), largely leaving the latter out of the equation of the 'success' story, with longer-term implications not only for their production capacities but also for the subsistence of the peasants and their families. In the vast literature on the Green Revolution, critical scholars observe similar trends in the different regions of the Green Revolution (Adalet 2022; Paddock 1970; Jerven 2012) Rising levels of malnutrition and persistent hunger in the following decades in the regions of the Green Revolution tend to show that the increase in food supply did not live up to the aspiration to 'feed the world'.

The form of knowledge generated by scientific institutions, corporate philanthropy, and organizations funded by Ford and Rockefeller—such as International Agricultural Research Centers (IARCs), the International Maize and Wheat Improvement Center (CIMMYT), seed companies, universities, state agricultural departments, non-governmental organizations, and international entities like the World Bank—is portrayed as neutral, objective, and beyond dispute. This representation facilitates the depoliticization of social reproduction, along with its contradictions and potential crises. Demands for more progressive social and ecological conditions based on social justice could be swiftly marginalized and demands for land redistribution could be transposed to issues of productivity in production and higher yields.

Changing the behaviour, attitudes and choices of the farmers and introducing these innovations into the daily lives of the poor farmers, was pivotal to the legitimation of the entire project of agrarian modernization. Scholars highlight the critical role played by the Rockefeller Foundation in the process of hegemony-making through training the peasants through farm tours, exhibits, fairs, frequent home visits, and group meetings to exchange knowledge. Central to the Foundation's official report titled "Strategy Toward the Conquest Hunger" (1967) was the conceptualization of farmers as 'unfulfilled entrepreneurs. Similarly, Nally and Taylor (2015, 60) highlight a shift in the conceptualization of rural peasants from 'objects of opprobrium' (Vernon 2017 cited in Nally and Taylor 2015, 60), noting that, "rural modernisers thus rejected the conventional fatalistic view of peasants as primitive, idle, and mendacious, stressing instead that it was possible to rouse rural labourers and 'upgrade' seemingly entrenched practices".

Coupled with the burgeoning idea that peasants must invest in themselves, Rockefeller agents depicted the farmers as "[risk-taker] aspirational subjects who yearned for a better life for themselves and their families" (Nally and Taylor 2015, 60). Training the youth in farming skills

and educating women in household management, efficient cooking, and 'improving their 'families' surroundings' similar to the emphasis on women's key role in household management in the Keynesian states of the North, were central to the legitimizing process. Despite the Rockefeller Foundation's partnership, the Green Revolution was largely led by the US government and rendered compatible with the active role of the state in agriculture and the promotion of social welfare in postwar Keynesianism (Perkins 1997, Patel 2013).

Overcoming 'Biological Barriers' to Capital Accumulation: Plant Breeding and Internationalization of the Commodity Form of Law

Approximately 95% of the plant genetic resources underpinning global food crop production have their origins in the Global South, particularly in Latin America and West-Central Asia (Kloppenburg 1988, Petit et al. 2001, Muzaka 2018). These regions are known as centers of origin or diversity for key food crops like maize, potatoes, and beans in Latin America, and wheat, barley, and legumes in West-Central Asia. These genetic resources are crucial for maintaining agricultural biodiversity, developing resilient crops, and ensuring long-term food security worldwide.

Notably, the private sector was not interested in plant breeding research and improving plant varieties before the development of hybridization techniques.[54] The main obstacles to capitalist integration into agriculture were mostly related to the biological makeup of the seed (Kloppenburg 1988). It is the "dual character that links both ends of the process of crop production: It is both means of production and, as grain, the product. In planting each year's crop, farmers also produce a necessary part of their means of production…. antagonistic to the complete subsumption of the seed (as opposed to grain) under the commodity form" (Kloppenburg 1988, 11). The development of hybridization was the first step in the control of reproductive capacities and the possibility of turning seeds into a commodity since hybrid seeds losing vigour each year would require farmers to regularly purchase seeds. A technological invention along with a legal one provided an unprecedented opportunity to scientifically codify and privately appropriate the genetic information that has been developed and exchanged by farmers throughout the generation.

[54] Developed by Donald Jones and patented in 1956, assigning the patent to a non-profit foundation, illustrating that it was driven for academic credit rather than the pursuit of profit (Kloppenburg 1988, 115).

Without this, there was little incentive for capital to engage in plant breeding to develop superior crops and until the publicly funded development of hybrid corn in 1935, the private sector was absent from the sector (Kloppenburg 1988, 12). The sector grew continuously with public research and development funding at federal and state levels since the mid-nineteenth century, and the US Patent Office (USPTO) initiated global germplasm collection in 1839, collecting seeds Agriculturally oriented Land Grant Universities (LGUs) and state agricultural experiment stations, crop improvement associations, and seed certificate programs, all under the mission of 'serving the farmer' produced new seed varieties and distributed them to the farmers. Germplasm collection and research that was not profitable for the private sector, yet fundamental for agriculture and industrial progress was undertaken by a strong public institutional structure, similar to the one we previously noted for the health sector.

Only after the invention of the process of hybridization, which eliminated the biological barrier' and the development of hybrid corn by public agencies, did the private sector turn to the sector (Kloppenburg 1988). However, the strong institutional structure dominated by the public sector became an obstruction to capital accumulation. After a struggle between social and political forces, a new division of labour was established reflecting the growing interest of the private sector and its dominance: The state would undertake 'basic research', and applied research/commercialization of its findings could be commercialized by the private sector. As scholars emphasize (Kloppenburg 2004; Muzaka 2018), over time, these actions prompted a redefinition of the boundaries between private and public sectors in germplasm research, like what occurred later in the biotech industry. This shift weakened once-strong public research institutions—ironically, the places where corn hybrid crosses were first developed—not just in the US, but also in Europe (Kloppenburg 1988; Muzaka 2018).

After the official onset of the Green Revolution in 1943 in Mexico, similar projects of hybrid corn breeding spread over many Latin American countries. Giant grain merchant, Cargill initiated hybrid corn production in Argentina in 1947. A major institution of the Green Revolution was the establishment of the Consultative Group on International Agricultural Research (CGIAR) by Rockefeller and Ford Foundations that extended and deepened the collection, classification and preservation of plant varieties and germplasm from the Global South and the development of their improved varieties as high-performing hybrids in this network of institutions.

Drawing a parallel with the eighteenth and nineteenth-century botanical gardens that facilitated plant genetic information flow from the colonies[55], Kloppenburg (1988, 161) identifies the CGIAR institutions as the "channels of flow for genetic information from the gene-rich periphery to the gene-hungry center".[56] Along with growing private interest in the sector, new legal categories such the Plant Breeders' Rights (PBR) were created in the US and Europe as a new legal form to extend protection to hybrid seeds, distinguishing them from the 'raw material' of the germplasm as commons, enabling a new wave of enclosure.[57] This was institutionalized in the International Convention for the Protection of New Varieties of Plants (UPOV) signed in 1961 (Dutfield 2011) by six European countries and revised in 1978, making the PBRs the universal standard in seed development. The UPOV marked a central institutional shift in the historical trajectory of the private appropriation of plant genetic resources, promoting the legitimation of the idea of commercial breeders' rights before the patent protection entrenched by TRIPS. As Muzaka (2018,72) writes, its significance cannot be overstated: "Before it, there were no IP titles over the appropriated and 'worked' germplasm." While the established rights were limited in scope and application than patents, the international legal document could be said to redraw the boundaries between 'valuable' and non-valuable knowledge and forms of labour, private and commons/ public and social reproduction and economic production.

Remarkably, a major point of conflict between the Global South and the North unprecedentedly came to the surface: Plant germplasm left the developing countries as 'the common heritage of humanity', yet they returned to the countries of origin after being modified as an improved variety, as a commodity that must be protected with patents. In Kloppenburg's (1988, 169-170) words:

> On the one hand, governments and companies of the advanced capitalist nations have encouraged the developing nations to adopt PBR legislation – that is to recognize private property rights in one

[55] The transfer of plants played a crucial role in boosting the fortunes of European empires by establishing the genetic base for profitable plantation crops in their colonies. Additionally, it helped reduce food costs in Europe, which supported the growing working class at home (Muzaka 2018, 74).

[56] Fowler (1994) highlights that by the mid-1990s more than 80% of the genetic material collected was at CGIAR's research centers and gene banks typically located in the Global North.

[57] Earlier 1930 Plant Act in the US, followed by similar acts in Europe in 1930s only covered asexually propagating plants such as trees and some fruits, thus excluding most food crops, plant varieties and medicinal crops. This changed with the UPOV.

> form of germplasm. At the same time, they have argued forcefully for the need to collect and preserve other forms of germplasm, such as *primitive* cultivars and landraces (*my emphasis*).

This distinction and the dispossession it facilitated mostly by these legal categories between 'elite' commercial germplasm as private property and 'primitive' germplasm as common heritage was a central agenda of the broader counterhegemonic movement of a coalition of some Global South countries in the NIEO. Notably, the developed countries of the Global North sought to keep germplasm as 'raw material' typically from the South as 'commons' under the 'common heritage principle', while seeking to establish PBRs as the common sense of plant varieties and the seed, obscuring that they embody numerous forms of social reproductive labour throughout generations (Kloppenburg 1988; Rodriguez and Dooren 2008; Muzaka 2018). The NIEO problematized the uneven ecological order generated through the dispossession of the Global South of their means of social reproduction, couching their opposition in terms of contesting the prevalence of 'intellectual property', a commodity form of law *per se*, as the common sense of governing the ecological conditions of social reproduction.

Two key counterhegemonic principles emerged from the NIEO movement relevant for us: The first was established by the UN General Assembly Resolution in 1962 titled "Permanent Sovereignty over Natural Resources", which affirmed the sovereignty of nations over their natural wealth and resources. This resolution came in response to the growing global demand for raw materials, much of which was still controlled by foreign companies, a legacy of colonialism. The second principle arose in 1967 from calls of the Global South countries to apply the concept of the 'common heritage of humankind'—rooted in Roman law and the public trust doctrine—to ocean and seabed resources. The principle of common heritage was adopted as a fundamental component of the United Nations Convention on the Law of the Sea (UNCLOS 1982), suggesting the escalating conflicts and pressures of developing countries over access and the distribution of benefits from these resources. Regarding genetic resources, these two principles shaped conflicting alliances in the 1970s and 1980s. Frontier states argued that 'primitive' genetic resources were the common heritage of humankind but opposed applying this principle to oceans and seabed resources. In contrast, many developing countries advocated for both genetic and seabed resources to be considered common heritage, eventually extending the principle of permanent sovereignty

to genetic resources within their territories by the late 1980s (Kloppenburg 1988; Petit et al. 2001; Brand et al. 2008; Muzaka 2018).

The FAO became a central platform for this shift. Following intense debates at the FAO's biennial conference in 1981, a coalition of the Global South and industrialized socialist countries successfully passed a resolution. This resolution called for the creation of an international agreement, later defined as a voluntary 'undertaking' by the political forces of the advanced industrialized nations, to regulate the flow of genetic resources. The agreement aimed to place all germplasm under the principle of common heritage, ensuring universal access and promoting their free exchange. The Undertaking stated that "Plant genetic resources are a heritage of mankind and consequently should be available without restriction", explicitly including the "gene stocks of elite and current breeders' lines" (FAO 1983 d:5). Albeit voluntary, the Undertaking had immense symbolic power as it was seen as a threat to private property rights over "elite" cultivars by the US and other frontier economies with a competitive edge in the seed and agrochemical industries. The "seed wars" continued until the early 1990s at the FAO and faded with the transformation to a post-Fordist accumulation model and the restructuring of the US economy towards the knowledge economy vested in the 'biotech revolution' of the Reagan era. The "biotech revolution", Cooper (2008, 11) writes, "needs to be understood in the larger context of the neoliberal revolution".

Conclusion

This chapter engaged with the critical concept of the 'commodity form of law' to, first situate the integration of the former colonies into the Paris Convention within the broader historical structures of the post-1945 global political economy and the US-led hegemonic world order of the *Pax Americana,* and second, to document the tensions surrounding the sovereignty of the former colonies through the lens of international law and the contradictions of the emerging patent regime and human security through the lens of critical global political economy. This chapter, like other chapters of the dissertation, explored the respective transformations pertinent to these historically specific regimes in terms of the major shifts in the social forces – namely in ideas, institutions and material potentials.

The chapter argues that the universal patent regime designates a major shift in global governance to institutionalize the primacy of capital accumulation and private forces as persistent,

long-term proto-new constitutional frameworks that reshape the ecological and social conditions under which labour power, the biological reproduction of the species, and the creation and the maintenance of communities (Bakker and Gill 2003, 2019; Gill 2014), whilst depoliticizing the question of human security.

Indeed, the globalization of the 'commodity form of international law' suggests that the formalism of international law does not only reify the structural asymmetries of colonial rule embodied in the interstate system but also denotes a long-term commitment to adopting their national laws to the juridical-political conditions of the expansion of capitalism, and the primacy of the protection of patents. Nevertheless, the commodity logic of the postwar patent regime was constrained by the hegemonic postwar efforts to moderate the fundamental contradictions of capitalism, including those of social reproduction, through welfare states, national regulation, and a number of international institutions and regional arrangements. Despite constraints, however, I contend that this process was central to the constitutional restructuring of the international liberal order and the postwar global political economy, entrenching the primacy of intellectual property protection as an integral part of the international rule of law (Gill and Law 1989; Cutler 2014, 2018; Gill 1989, 2000).

In the postwar era, a major shift occurred– that is, a shift away from 'patents' as sacrosanct on a par with uncontestable 'natural rights' to a retour of 'patents' as 'monopolies' that must be regulated by the state, specifically to control the concentrated private corporate power, notably high in the pharmaceutical industry largely due to the high traffic of strategic patenting since the early twentieth century. While in the nineteenth century, patents were deemed 'evil monopolies' threatening the free market and trade, in the postwar era, they were framed as 'monopolies', this time to protect society from the vicissitudes of the free market. This reflected the broader common sense forming around the idea that governments should and could intervene in the economy as well as in the provision of human security for the poor and marginalized sectors of the population.

Governments in the Global North and the South were relatively autonomous in developing and adopting patent policies in the pharmaceutical sectors; for the developing states guaranteeing patent protection was a means of attracting foreign investments in the globalizing market and they had to balance this interest in their development priorities and the provision of the social reproduction needs of their populations. Political power and a humanitarian logic underpinning the international institutions were registered on the side of human security, specifically concerning the

global governance of hunger.

The postwar '(re)discovery of hunger' as a geopolitical phenomenon and (human) security threat was central to the hegemonic world order, ideologically and institutionally predicated on alleviating the contradictions of capitalism. Nonetheless, the competing visions and founding principles for the FAO and its eventual institutionalization as a consultative organization of technical help and food aid, rather than a global governance mechanism to institute the primacy of the right to food as a politically grounded right, suggests, perhaps a *longue durée* tendency of liberal governance to relegate subsistence to a depoliticized realm of social reproduction. The Green Revolution was an important moment in the emerging consensus around patent protection and innovation as the common sense of human security. This was reinforced by the emergence of private enterprise as a major actor in plant breeding and the gradual private appropriation of public investments.

In the period just addressed, the governance of food security was a central concern also within the broader historical structures of state-managed capitalism, which sought to partially address, though often inadequately and in gendered and racialized ways, the contradictions between the material conditions of life — including health, nutrition, and the environment — and the growing power of capital (Bakker and Gill 2003; Bhattacharya 2017; Fraser 2014, 2017). While these contradictions unfolded unevenly across different scales, locations, and jurisdictions (Bakker and Gill 2019), particularly in the South as a part of the agrarian transformation to the industrial capitalist model of agriculture, the goal of mitigating these contradictions through national regulation was adopted, with varying approaches, by both welfare states and corporate provision in the capitalist core and newly independent states in the Global South.

Although the commodification of subsistence and integration of farmers into markets began in the second multilateral food regime, small-scale farmers in the Global South could still benefit from protectionist policies, such as subsidies, price supports, and input provisions by state agencies (Celik 2023), and also push for land reforms that were central to the processes of national liberation and decolonization. [58]

[58] Çelik (2013), following Araghi, identifies the status of rural peasants in the second food regime in terms of 'relative de-peasantization'.

CHAPTER 5

INSTITUTING THE NEOLIBERAL PATENT REGIME

> "We are no longer writing the rules of interaction among separate national economies. We are writing the constitution of a single global economy" (Renato Ruggiero, Director-General of the World Trade Organization, *UNCTAD and WTO: A Common Goal in a Global Economy Press Release,* 8 October 1996).

Introduction

Like the first and the second, the analysis of the third multilateralism of intellectual property law (1986-1994) links the development of the global intellectual system with the broader events in the development of international law and specifically takes issue with how they have shaped and continue to shape the form and the nature of the integration of the developing countries into the international intellectual property framework. The third multilateralism marks a breakthrough in the historical trajectory of international law. In this era intellectual property law has a more substantial role in the international economic order and international relations. Unlike the earlier eras, the states are now under the international binding obligation to protect intellectual property rights according to the designated minimum requirements and can enforce their right claims under the auspices of the WTO.

This chapter explores the substantial importance of the emergence of an enforceable global intellectual property framework for neoliberalism's world order by examining the global institutionalization of a neoliberal patent regime and how in this historical process, the narratives of hunger and food security and the terms of the *longue durée* controversy over patents that date back to the nineteenth century discussed in Chapter 3 are contested by transnational social forces and transformed to forge the strong protection of private property over knowledge, specifically the consolidation of the neoliberal patent regime as the pillar of free trade and the common sense of human security.

This chapter claims that the substantial importance of the intellectual property law of third multilateralism for the neoliberal global political economy, specifically for the asymmetrical relationships between the Global North and the South is revealed once it is understood as a part of

the ‘transnational legal order’ that goes beyond the state-centric ontology of international law as formulated by Cutler (2014). As a component of the transnational legal order, the neoliberal patent regime is a new constitutionalist mechanism of global governance (of social reproduction/human security) which is institutionalized through the contested process of the Uruguay Round of the GATT negotiations and the resulting agreements of the TRIPS and Agreement on Agriculture (AOA).

This chapter and the following Chapter 6, explore how the private appropriation of knowledge through the neoliberal patent regime shapes the neoliberal governance of social reproduction. The two chapters together seek to answer the following questions: How did the neoliberal patent regime institutionally and discursively shape and reorganize the global governance of social reproduction and the longue durée contradictions of capitalism? What is the distinctive operative logic of the contemporary patent regime that endows it with the institutional and ideational vigour it has today, distinguishing it from the intellectual property multilateralism(s) prevalent in the earlier eras of capitalism? Through which supranational institutions and ideas did the patent regime of global governance infiltrate into daily lives, forging the strong protection of patents on food crops and basic medicines as the ‘common sense’ human security? What are the major continuities and ruptures “in the long-run war of position in the battle of ideas” (Peck 2010, 49) concerning the private property of knowledge whose beginnings, as discussed in the earlier chapters of the dissertation, could be traced back to the nineteenth-century patent controversy.

Chapters 5 and 6 complement and support each other to argue that the neoliberal patent regime is a new constitutionalist mechanism that unprecedentedly taps into life-making processes and transforms the nature and the governance of social reproduction and social welfare in ways that lock in a market-dependent and commodified form of subsistence in the historical structures that are difficult to change, cutting across class, gender and race within and across states of the Global North and the South. The neoliberal patent regime entrenches the primacy of capital particularly in the crisis-ridden context of neoliberalism as delineated by feminist political economists, producing a deeply precarious form of human security as a permanent condition for the poor populations of the Global South.

PART I

Third Multilateralism and The Uruguay Round (1986-1994)

Okediji (2003) traces the beginnings of 'third multilateralism' to the institutionalization of a global intellectual regime through the TRIPS Agreement, which is one of the many agreements issued from the almost decade-long Uruguay Round (1986-1994) of the GATT negotiations. The third multilateralism is identified as the "era of consolidation" (Okediji 2003), suggesting a different logic of the IP law than in the previous eras. As Okediji claims, it involves globally implementing a universally enforceable legal framework and the integration of the developing countries of the Global South into this international framework rooted in the Bern and Paris Conventions of the nineteenth century discussed in Chapter 2.

Unlike the eras of the first and the second multilateralism which did not impose any substantive requirements and bindingness on the individual nation-states, Okediji (2003) highlights that third multilateralism distinctively introduces minimum requirements for the universal protection of intellectual property and significantly constrains the domestic policy routes and the legal room available to the developing countries to act (or not) on intellectual property laws and to "adopt policies, treaties and corresponding obligations as they deemed adequate for their domestic policies" (Okediji 2003, 334). The growing harmonization and standardization of formal multilateral rules of the GATT lead some scholars to emphasize that the Uruguay Round incorporates a distinctively 'constitutionalist focus' (Winters 1990, 1298 cited in McMichael 1993, 202), which tends to anchor its legitimacy in the 'absence of a hegemonic state'.

Thus, in the third multilateral era, intellectual property law is consolidated as a distinct component of international law that is harmoniously and universally enforceable across the Global North and the South. In this era of consolidation, developing countries are integrated into the international legal framework as members who are equally bound by the legal obligation to implement minimum protection in their national frameworks. However, they were not only integrated into a formal international legal framework, but they were also integrated into global markets where knowledge in the form of patents could be bought and sold as a commodity and a capital asset.

Drawing primarily on the works of critical political economists, particularly Gill (1995a, 2008), the current phase of multilateralism reflects the logic of "new constitutionalism". This

perspective highlights how contemporary international legal frameworks are being redefined as legal, quasi-constitutionalist mechanisms to reinforce the principles of free enterprise and the primacy of capital accumulation. Also, an exclusive focus on intellectual property rights merely as a component of the international legal order based on an interstate system overlooks the prevailing private corporate power within the international legal frameworks and tends to obscure the distinctive logic of new constitutionalism in the neoliberal patent regime that emerged as a pivotal mechanism of global economic governance. As such, I contend, that the 'constitutionalist focus' attributed to the Uruguay Round must be further qualified through the lens of 'new constitutionalism'.

Cutler's (2014) nuanced identification of a 'transnational legal order' is also useful at this juncture to capture the neoliberal patent regime in terms of a complex, multi-layered system of rules and norms, that extend beyond national boundaries with the interaction of states and non-state actors shaped by different interests and power dynamics. According to Cutler (2018, 66):

> *the transnational* does not displace the national or international. Indeed, *the transnational* requires both international and national laws to operate. *The transnational* operates in the shadow of the state, for it is state law that accords legitimacy to transnational laws by creating the politico-legal structures and ideological dispositions that enable and facilitate both the enactment and enforcement of these laws.

Furthermore, the state-centric perspective of international law obscures the corporation as a legal entity (Cutler 2018). Highlighting that "incorporation literally means the creation of a new corpus, a new person", Pistor (2019, 50-51) writes, the corporation "is considered a legal person and as such owns its own assets and contracts, can sue, and be sued in its own name. Neither churches, cities, nor corporations can act without humans, but humans are merely their agents; the legal entity is the principal". The personhood of the corporation as a legal subject outlives human persons and becomes, as it were a transcendental subject.[59]

The neoliberal patent regime operates at the level of the 'transnational legal order' per new constitutionalism. As Gill and Cutler (2014, 11) write, "new constitutionalism combines both the

[59] I owe this formulation to Stephen Gill.

old and new in a radically changed contemporary context whereby the forces of commodification are reaching ever deeper into new domains that have previously not been subordinated to capitalist market forces or encoded in contractual relations".

The neoliberal patent regime was a product of almost decade-long negotiations of the Uruguay Round. The Round marks an important legal, institutional as well as discursive shift to liberalize trade, particularly the integration of agriculture into the free trade regime, and its global regulation by multilateral rules equally applicable to all members rather than the somewhat different domestic policies, tariffs and the farm subsidies of individual members. With the TRIPS in force, patent holders can uphold their right to private property across jurisdictions.

Developing countries will no longer receive special treatment such as protectionist policies for their domestic agriculture and technology transfers under the new rules of this institutional form that are based on the principles of non-discrimination and reciprocity given that the states implement and enforce free trade policies and the protection of private property. McMichael (1993, 202) stated that "the guiding principle of the Uruguay Round is that any nation that decides to impose limits on the rights of foreign companies, for environmental or social reasons, can be retaliated against for creating a 'restraint of trade'".

TRIPS Agreement and the Agreement on Agriculture

The TRIPS and the Agreement on Agriculture (AOA), address two of the most deeply contested issues between the Global North and the South since at least the nineteenth century. These are milestone agreements out of the twenty-eight produced as a result of the Uruguay negotiations. Complementing the financial discipline of the IMF prevalent since the 1980s, they reorganize world agriculture under the "free trade" regime and institutionalize the commodification and financialization of knowledge fundamental for the development of agricultural biotechnologies. Reorganizing the production and the trade of agriculture and food according to the discipline of the free trade regime and the unprecedented development and adaptation of agricultural biotechnologies, since the early 1990s, have been pivotal for agrarian transformation and the dynamics in the global political economy of food production and consumption, in the 'corporate food regime' of neoliberalism (Pechlaner and Otero 2008, 351).

The TRIPS and the AOA are central to neoliberalism's global institutionalization. The TRIPS universally introduced minimum requirements of intellectual property protection and situated the governance of knowledge production and circulation within the regulatory framework of the free trade regime for the first time. A universal enforcement and a dispute settlement mechanism distinguished the incipient neoliberal patent regime from the earlier protection frameworks. Similarly, whereas in the previous GATT frameworks, agricultural goods were typically exempt from the trade disciplines applied to manufactured goods, the AOA for the first time introduced food and agriculture. Overseen by the WTO, the AOA aimed to internationalize agricultural trade and globally align national food policies through *binding* commitments. This was indeed an unprecedented change in the regulatory framework of agricultural trade and production from the nation-state to the WTO to redefine food security exclusively as a market-based good.

Particularly spearheaded by the US, along with the support of other industrialized countries including the European Community, Japan, Canada, Australia, New Zealand and Switzerland, a total of 125 countries participated in the long and contested process of the Uruguay Round, with the political power and the authority wielded by private corporate actors facilitating the TRIPS.

Pressures from the US and the EU on developing countries to liberalize their agricultural sectors began with 1980s structural adjustment programs. The 'geopolitical food order' of the postwar changed dramatically during the Uruguay Round as the agro-power countries, who were fiscally challenged in the post-war era because of their high budget spending on farm subsidies, mobilized to insert agriculture into the GATT. Concomitantly, the WTO increased pressures on developing countries' national policy-making mainly on three major issues – that is, to lower import duties, remove state subsidies for agricultural producers, and eliminate restrictions on the circulation of agriculture and food products in the global markets (Orford 2015, 7). Shifting state responsibility for managing and protecting agricultural sectors to corporate economic actors was a pivotal component of the neoliberal project.

The Preamble of the AOA (1995) states that it aims to create a "fair and market-oriented agricultural trading system" with "progressive reductions in agricultural support and protection," intending to correct market distortions. The Preamble (1995, 6) further states that commitments in these areas must "hav[e] regard to non-trade concerns, including food security and the need to protect the environment". Food security is redefined throughout the Uruguay Round fundamentally as a market-based good that is to be provided by free trade.

Among the AOA's three major areas—market access, export competition, and domestic support—the latter is most contentious. It demands “substantial reductions in trade-distorting domestic support”, affecting domestic policies on rural development, environmental programs, and hunger measures. A similar declaration was put forth by the OECD (2000), stressing the importance of minimizing trade distortions that emerge as a consequence of the state’s efforts to meet domestic agricultural development goals. The seemingly neutral (technocratic but economistic) language of multilateral treaties is important to highlight, as it masks the political nature of determining what constitutes “trade-distorting agricultural policy”. Also, there is no neutral stance from which to claim that free trade rules should unconditionally override national trade regulations and food policies to attain food self-sufficiency and other measures to end hunger. The claim that 'free trade' is neutral rests on the assumptions of neoclassical political economy, which reveal that what is labelled as ‘trade distortions’ are often national regulations that limit the flexibility and dominance of transnational corporations in global markets.

Both the TRIPS and the AOA were arenas of conflict. The new trade rules favoured large-scale farmers and agribusinesses in rich countries, disadvantaging smallholder farmers in developing nations, and furthering developed countries' goals to dominate markets, consolidate global trade control, and implement a global accumulation framework with agriculture and food regimes as its central pillars.

To stress the prevalence of corporate power in this process, Sell (1999, 171; 2003) describes the TRIPS Agreement as “an unprecedented global coup” that “twelve corporations made public law for the world”. Developing countries were structurally coerced to accept the terms of the Agreement, as a part of the so-called Washington Consensus, reflecting the fact that the US government was the most fervent proponent of a strong intellectual property provision, reflecting concerted efforts of companies, industry organizations like the Pharmaceutical Manufacturers Association (PMA) and the Intellectual Property Committee (IPC), a coalition of thirteen mostly U.S. based corporations including Pfizer, IBM, DuPont, Monsanto, General Electric, General Motors, Hewlett-Packard, Bristol-Myers, FMC Corporation, Johnson& Johnson, Merck, Rockwell International and Warner Communications. The committee was formed in 1981 with the lead of the Pfizer CEO Edmund Pratt who soon became the spokesperson for proponents of a ‘trade-based approach to intellectual property’ and was actively involved in the Uruguay Round of negotiations.

A major reason for reforming the intellectual property law, especially in developing countries, was to ensure "a competitive position in the international market... and an institutional framework that would make compliance with intellectual property laws an economic imperative" (Okediji 2003, 337). Writing about the prevalence of private corporate power in the early years of the Round, Raghavan (1990, 69) stresses that institutionalizing these relationships "amount to a potential reorganization of patterns of world production, and an associated erosion of national economic and political sovereignty."

The new WTO brought together agricultural trade and global patent protection, which had been separate before TRIPS. This was the result of a contested process between the developed countries which are major exporters of agriculture and the developing countries of the Global South most of which moved from being exporters to being net importers. If these two components were to be negotiated separately, Rao and Guru (2003) contend that resolving them would be much more challenging. "This is particularly important in TRIPS, where the developed countries take the position of 'demanders'" (Rao and Guru 2003, 29) who in turn offered to make some reductions in the protection of their domestic agricultural sectors. The benefits they respectively reaped were by no means symmetrical. McMichael (1997, 206) further stresses that agricultural liberalization (especially opening Northern markets to Southern exports) was also a significant lever for securing agreement on property rights in services and technology - especially rights in Southern markets (Raghavan 1990, 70). This included strong universal protection of biotechnological products and control of genetic resources, seeds, pharmaceuticals and other products, allowing for unprecedented penetration of corporate power into the governance structures of social reproduction and the provision of basic needs.

A WIPO Report in 1988 (WIPO, 1988) reveals the immense change in the extent of patent law variation before the TRIPS. Out of 98 members of the Paris Convention on Patents, 49 excluded pharmaceutical products, 44 excluded plant varieties, 35 excluded foods and 42 excluded biological processes (WIPO 1988). In addition to variations in the scope of patentability, the duration of protection in pharmaceutical patents also varied from 5 years in some developing countries to around 15 years in developed ones. "After TRIPS came into force, not only in pharmaceuticals but in all areas of technology, patents had to be granted without exception and for no less than 20 years" (Muzaka 2018, 65).

Recognizing the TRIPS was a watershed and part of the most comprehensive economic development legislation of the twentieth century, scholars claimed it to "shape the terms of global movements and struggles around drugs, epidemics, and health for many decades to come" (Cooper 2008, 55). Nonetheless, "for a piece of legislation with such far-reaching implications for the health and survival of whole populations," Cooper (2008, 55) writes, "the TRIPs agreement was passed and signed with remarkably little controversy by the member states of the newly formed World Trade Organization".

PART II

Forging a New 'Common Sense'

The Uruguay Round was a pivotal moment in the long process of constructing intellectual property as an *uncontestable* category of private property and the market-based understanding of food security and hunger as a new common sense of development. The (re)emergence of the tenacious idea that the market is and should be the sole and the best mechanism for the allocation of goods and the optimal decision-maker was coupled with a view that a depoliticized and 'fetishized' understanding of innovation driven by the private sector is the only way to attain human security across the Global North and the South. These notions, and the associated presentation of capital and the private sector as the only innovative force were fiercely defended and fought for throughout the negotiations.

Two decisive discursive shifts reflect the triumph of the transnational forces under the free trade regime. The first shift is from a contested understanding of patents as legal monopolies to their understanding as a pillar of free trade and the mobility of capital. The second one is the market-based understanding of food security, which was largely institutionalized under the governance of the WTO. These shifts in the ideas signal the ideological turn of the US and EU and they are a part of the 'neoliberal framework of thought' that underpins the structures of global governance. For the material and institutional transformations towards market-driven governance, the idea of patents as legal monopolies and the association of food security with domestic food sufficiency and agricultural policy-making had to be dismantled.

These discursive shifts were pivotal moments that marked the triumph of the neoliberal forces to institute and impose the meaning of patents as the markers of free enterprise, and

progressive innovation and the free market as the sole institution of global governance capable of securing food security and human development. These discursive shifts anchored in the institutions of global governance were major blows to the oppositional forces of the Global South.

The Preamble of the TRIPS Agreement (1995)[60] summarizes its overall aim – that is, harmonizing free trade and the protection of intellectual property rights:

> Desiring to reduce distortions and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade.

This was not only a legal breakthrough in international law-making, but it also marked a major shift in the understanding of intellectual property from a barrier to free trade to a "tradable commodity to facilitate trade" (Rikap 2003), institutionally and discursively forged as the common sense of the global economic governance order. This was indeed a major shift from the hegemonic ideas of the earlier era where patents could be contested as legal monopolies that threaten the health of poor populations and barriers to free trade and competition. It was a shift towards a new 'framework of thought' and a sense of direction to the transnational corporate classes consistent with the following formulation (Gill 2008, 94):

> These international organizations tend to express liberal economic discourses and promote associated liberal policies. Thus, they tend to give priority to market efficiency, and particularly the virtues of free trade, foreign investment and free foreign exchange markets, the control of inflation and public expenditure, and the private sector relative to the public… These connected ideas can be said to make up a 'framework of thought' which, firstly, helps orientate the actions of 'the transnational capitalist class', secondly, serves to legitimate its leadership and thirdly, restricts the ability of subordinate classes to analyze the nature of the political economy, and to construct an alternative to this form of 'hegemonic rationality'.

[60] The TRIPS Agreement including the Preamble is available at WTO | intellectual property (TRIPS) - agreement text - preamble

By contrast, in the postwar era of the second multilateralism discussed in the previous chapter, the common sense of the governance of IP largely pivoted on understanding them as 'dangerous monopolies' that obstruct free trade and further the pace of innovations. Yet, the 'dark ages' for patents was the 'golden age of innovation' in the pharmaceutical sector with "around 93 new entities introduced annually on average during the 1960s" and the number started to decline as the protection for pharmaceuticals became stronger from the 1980s onward, going down to 44 in the 1990s and around 25 in the late 1990s (May and Sell 2005, 66). As Pistor (2019, 123) claims, "TRIPS, created major carve-outs from the free trade regime for monopolies under the label of intellectual property rights … [giving] the technologically more advanced companies of the global North the option to enclose their know-how and thereby remove free access to it by potential competitors in less advanced countries".

In the earlier eras of capitalism, patents were typically criticized for their inherently monopolizing tendency due to the immense power they confer to patent holders to control market access. Based on the non-rival nature of knowledge Pagano (2014, 1420) aptly observes that to be treated as a commodity, knowledge must first be *made* scarce, and the neoliberal intellectual property produces and governs scarcity in the knowledge-based economy. The monopoly character of intellectual property is that "not only can *disembodied knowledge* (i.e. the knowledge that can be separated from the intelligence and skills of the workers) become part of a firm's private capital, but when it does so, it necessarily becomes intellectual *monopoly* capital. Even if additional uses of a piece of *disembodied knowledge* do not decrease the total amount of knowledge available to society, other firms have no liberty to use it" under the available patent regime:" (Pagano 2014, 1421).

The monopoly character of a patent is also related to the ability to move across boundaries due to their relatively more mobile nature as intangible assets. Instead, a patent is more mobile than other capital assets, hence entailing a binding monopoly across boundaries. In addition to the spatial dimension, the monopoly character is also related to the extension of a patent in time. As noted earlier, the TRIPS Agreement universally extended and fixed the duration of a patent to twenty years. However, the "masters of the legal code" (Pistor 2019), namely the legal experts, patent lawyers and legal firms, can prolong the life span of a patent either by making minute changes in the inventions or by "recoding them with legal modules that do not have an expiration date, such as trade secrecy law" (Pistor 2019, 108). Reinstating the central role of law in the making

of capital and its protection as private wealth, Pistor (2019, 57) clarifies that "the key to understanding the basis of power and the resulting distribution of wealth lies instead in the process of bestowing legal protection on select assets and to do so as a matter of private, not public, choice."

The labyrinths of the legal system thus provide the 'masters of the legal code" with the advantage of using legal-technical knowledge to further entrench the power of the patent holders. As such, the neoliberal patent regime entails forms of power accessible only to the ruling elites and the transnational classes, funding and including the corporate lawyers who, in Pistor's (2019) succinct words, have been promoted from their role as 'helpful auxiliaries' to the role of the "masters of the code of capital". This legal-juridical knowledge entails a form of power to strengthen and extend the structural power of capital through the legal inventions and modules that facilitated the knowledge economy and generated a significant chunk of corporations' wealth.

Identifying a legal monopoly not only by the ability to extend beyond national boundaries but also by extension in time, Rikap (2022, 26) similarly adds, that their "extension through time is the result of proactive [legal and technological] innovations". She (2022, 26) further stresses that the temporal extension of patents denotes the power to monopolize access to knowledge.

> …once a firm continuously wins the innovation race, the resulting gap with the rest of the firms producing the same or similar products widens, blocking these other firms. *It is the capacity to continually renew its intellectual monopoly that we state constitutes a source of lasting power*. In other words, systematically winning the monopolistic competition for knowledge entails a cumulative causation effect that lies in the hands of a few (leading) corporations. *(Emphasis added)*

The extension in time is of substantial import because it enables the multinational corporation to continuously win 'in the innovation race', while committing the developing and the least developed countries of the Global South to policy and development routes that favour the primacy of capital for longer periods, and further entrenching market-based forms of power and accumulation as if they are inevitable norms rather than the limited set of choices delineated by the structural power of capital (Gill and Law 1989). This has led some scholars to claim that 'the holders of property rights on knowledge end up with rights equivalent to the imperial powers of

the past. They can decide whether a certain production process can be undertaken in a particular country, and they thus come to own the future opportunities of firms in other countries (Pagano 2014, 1414). As Pistor (2019, 118) succinctly stresses, the "legal code of capital does not follow the rules of competition; instead, it operates according to the logic of power and privilege".

In this way, the emerging neoliberal framework of thought precluded the non-economic concerns such as their implications for public health and social welfare that have been a key axis of contestation in the era of welfare capitalism, and the formerly prevalent idea that the protection of public goods and the commons is necessary to spur innovation and help ameliorate the livelihood of the poor populations.

With the onset of the neoliberal patent regime, whether and the extent to which the state could and should be the locomotive of knowledge production and develop policies to provide for the basic needs, especially of the poor and the marginalized sectors of the population are gradually effaced from the terms of the debate to be replaced by the idea that private sector is *inherently* innovative. Globally instituting an intellectual property regime (re) emerged as a key engine and incentive structure of innovation-based competition and development. This is despite the strong historical evidence that most breakthrough innovations pivotal for public health and social welfare were developed in the earlier eras of capitalism through public infrastructure and financing in the absence of strong patent protections (May 2007; Boldrin and Levine 2010; Mazzucato 2013).

As such, patent-based knowledge production is part of the unprecedented penetration of capital into life-making processes and the forging of a new common sense of human security. Paradoxically, however, "this is one area", May (2007, 20) writes, "where few if any private actors are willing to see less state involvement" since their protection relies on a harmonized legal codification and regulation at the global level as well as the coercive power of the states to adjust their domestic laws and enforce them under the requirements of the multilateral agreements and supranational institutions. Thus, this shift in the scale of governance and the rise of private corporate power was not a "retreat of the state". Rather the neoliberal patent regime can be seen as a milestone in the process of the transformation to the competitive, internationalizing neoliberal state-form hypothesized by Cox (1987) and Gill (1991).

Food Security, Food Sufficiency and Free Trade

As discussed in the previous chapter, discourses of innovation and food security started to increasingly become intertwined during the 1960s with the Green Revolution. This trend found expression in the formulation of food insecurity as a 'technical problem' to be partly overcome by the technology transfer facilitated by the scientific philanthropy of the Rockefeller Foundation and the US 'food aid'. In the postwar world order and the second multilateralism (Okediji 2003), the developing countries of the Global South operationalized the principle of self-determination and sovereignty, which was also reflected in the trends toward self-sufficiency in food and agriculture. Yet, the institutional structure of the geopolitical food order of welfare capitalism and the discourse of food security took a dramatic ideological turn towards an aggressive free market ideology during the Uruguay Round (1986-1994) and its outcome, namely the AOA.

The discourse of food (in)security had already replaced the earlier debates on global hunger before the Uruguay Round and came to dominate international debates with the rise of neoliberalism in the 1980s. Discourses on global hunger have seen a complete reversal from the 1979 FAO Report entitled *The Struggle for Food Security* to the 1986 World Bank Report, *Poverty and Hunger: Issues and Options for Food Security in Developing Countries.* These two reports illustrate the vast shift that has taken place in less than a decade in the hegemonic understanding of global hunger and the ways to address it. Briefly, this was a shift from the understanding of food security as a fundamentally global political challenge that must be addressed by international policies that aim to overcome the global disparities of income and land ownership and to attain domestic self-sufficiency in food and agriculture. The importance of democratic decision-making for food security was also a part of the progressive approach of the 1979 FAO Report. The 1986 World Bank Report, on the other hand, understands food (in)security as an individual problem of insufficient purchasing power to be addressed by "alleviating poverty, accelerating economic growth, structural adjustment, and building the capacity to purchase food in the globalized market". In this view, food security is to be secured as a function of economic growth that would trickle down to more purchasing power for the poor in the market. This was indeed a major shift both in scale and content – from a global political problem to an individual economic problem specifically of insufficient purchasing power and poverty understood as a problem to be addressed by market mechanisms.

The historical context of world agriculture during the Uruguay Round was largely shaped by the falling prices of basic staples such as wheat, maize, and rice. Additionally, this was the context of the Washington Consensus and the withdrawal of state support from agriculture in developing countries, including food subsidies for urban populations and subsidized inputs. "Though export subsidies made food cheap on international markets, they also had the effect of discouraging staple food production in developing countries while also undermining the competitiveness of other grain exporters." (Margulis 2017, 42)

While food security has been a critical item in multilateral trade negotiations since 1947 (Margulis 2017), the Uruguay Round and the resulting AOA marks a turning point in making the market-based view of food security hegemonic. For the first time, food security was recast and institutionalized within the overarching aim and the framework of trade liberalization, suggesting a decisive shift from the era of welfare capitalism to understanding free trade and the market as the best and the sole viable means to address global hunger and poverty.

Controversies during the Uruguay Round pivoted on how and whether food security should be included in the negotiations on the liberalization of agricultural trade. Initially, the net food importer developed countries including Japan, Switzerland and Norway pushed for food security to be treated as a non-trade concern (GATT 1989b). They emphasized that non-trade concerns encompass interconnected issues such as food security, significant changes in the livelihoods of rural and indigenous communities, environmental issues, and potential food crises resulting from price volatility in the world market due to trade liberalization[61]. They suggested that the rules of the WTO should permit flexibility regarding these non-trade concerns, including allowing for looser commitments to liberalize agriculture. For instance, Japan asserted that "stable supply of such 'basic foodstuffs' is essential for every country from the viewpoint of food security…a political requirement which transcends a mere logic of economy" (GATT 1988, 7 cited in Margulis 2017, 45), proposing that net food importers should secure a minimum level of production of basic food staples against the potential volatility in the world markets.

As with other similar proposals, this was met with the objection of 'protectionism' by the leading food exporters, namely the US, Canada and Australia, reflecting a decisive turn to a

[61] Margulis (2010, 46) refers to the increase in the world food prices between 1987-1989 and the economists' consensus at the time that the high food prices are likely to be an ongoing consequence of the liberalization of trade.

neoliberal economistic discourse on food and agriculture. A closer look at the debates in the Uruguay Round shows that any non-trade concern was reduced to and brought under the pejorative banner of 'protectionism' by the developed countries, pushing the economistic framework of the trade regime as the common sense of the international agricultural order. In the concerted efforts of the major grain exporters to win over the discursive struggle, 'protectionism' of the Bretton Woods era was juxtaposed with free trade/market which was typically used as if it represented a neutral, objective and uncontestable criterion rather than the ideological preference of an economistic logic. The official WTO document (GATT 1988a) stresses that to have a comprehensive understanding of the terms of the debate on food security in the Uruguay Round, one must read the competing proposals of the US and Jamaica, respectively the unrivalled agricultural exporter and the net agricultural importer, presented in the Negotiating Group on Agriculture. While the Jamaican proposal shows the existence of resistance among the countries of the Global South to the US stance, our focus will be on the US perspective which has been the dominant view since then, signifying the making of a new constitutionalist governance from above and the expansion of the structural power of capital.

The US Proposal for Food Security

The US position during the Uruguay Round largely reflected the historical context of world agriculture mostly informed by the US competition with the European Commission (EC) in the world markets and the 1985 US Farm Act which had the liberalization of the world food market as a primary aim (McMichael 1993). Grain prices that saw unprecedented spikes immediately after the world food crisis in the early 1970s have declined after a couple of years[62] and returned to the pre-crisis level, principally due to the agricultural export subsidies in the US and federal income supports to put agricultural surpluses in the world markets which made staple grain prices fall to their lowest levels at the international market since the 1920s.

Margulis (2017, 43) notes that in the early 1980s, the price of the US wheat imported by Mali and Burkina Faso was 40% less than the domestic product. The upshot of these policies was to discourage staple grain production elsewhere, particularly in the Global South, which was a

[62] Note that the food crisis in 2007-2008 was different in this respect. The return to the 'cheap food' did not take place at a similar pace and the volatility of food prices continues, marking a historical disjuncture from the long historical era of the decline of food prices and the era of cheap food.

major blow to domestic agricultural production and trade, and food security for most developing countries. This upshot was by no means unintended. In effect, Republican Senator Ruby Boschwitz (cited in Watkins 1991, 41) articulated it in Congress as the strategic goal of the 1985 Farm Act in his defense of the cuts in domestic farm prices and the attendant increase in federal income support payments: "if we do not lower our farm prices to discourage these developing countries from aiming at self-reliance now, our world-wide competitive position will continue to slide... This [discouragement] should be one of the foremost goals of our agricultural policy".

The US proposal had two major interlocking claims. The first is that "free trade is the best way to address food security concerns" (GATT 1988b), calling for the elimination of all market access barriers, tariffs and the removal of the right to impose export embargoes from Article XI 2(a) of the GATT (1947) for the reasons of short supply. The US representative emphasized 'this would permit a more rapid development of the agricultural sectors of developing countries and eliminate the major reason for export stoppages"[63]. According to the proposal, all non-trade concerns such as food aid and stockpiling should be evaluated in the light of the priority of free trade, which would help developing countries achieve food security faster.

The second major proposition of the US proposal delinks food security from national food self-sufficiency. In 1986, the Former US Secretary of Agriculture John Block made a similar point claiming, "the idea that developing countries should feed themselves is an anachronism from a bygone era. They could better ensure their food security by relying on US agricultural products, which are available in most cases at lower cost" (cited in Bello 2008, 452). The US Proposal foregrounds that "free trade provides the best way to address food security concerns, particularly if the right to impose export embargoes for reasons of short supply were removed from Article XI 2(a)". The second part of this article suggests that food security is, and must be disassociated from the idea of self-sufficiency, arguing that free trade in agriculture is the most effective way for food security.

[63] The Article XI 2(a) of the GATT (1947) prohibits quantitative restrictions on the importation or the exportation of any product, stating "[n]o prohibitions or restrictions other than duties, taxes or other charges shall be instituted or maintained by any Member..." Quantitative restrictions are considered to have a greater protective effect than tariff measures and are more likely to distort free trade. When tariffs are used to restrict imports, it is still possible to increase exports as long as foreign products become price-competitive enough to overcome the barriers created by the tariff. However, when quantitative restrictions are used, it is impossible to export beyond the quota no matter how competitive the price of foreign products might be.

Reflecting the moral and intellectual American leadership in the concerted efforts to liberalize global agricultural trade, the proposal indicated that the US "is prepared to discuss appropriate means of building national food security for all GATT members as part of the process of global agricultural trade liberalization" (US Agricultural Proposal on Food Security, 1988). Hence the US proposal defines food security as a function of free trade, which is recognized as the best and the sole means to address global food security dissociated from self-sufficiency perceived as an outdated notion. The Article suggests a shift in the scale of governance, handing over the governance of agriculture from the nation-state and domestic policies to the institutions of global economic governance such as the WTO and the free market.

It must be stressed that the US position went beyond delinking food security from self-sufficiency. It further suggested that the latter could even become an impediment to food security insofar as the domestic production of food supply and protectionist measures entail an illegitimate intervention to the market forces that presumably ensures a food-secure future (US Proposal 1988). Export embargoes and limitations on imports to protect domestic markets were deemed equally pernicious. To this end, the US proposed to revise the GATT Article that gives the states the permission to "restrict or prohibit exports of agricultural food products to relieve critical shortage" (1988). The market-based view of food security spearheaded by the US was coupled with the repudiation of developing countries' potential programs and agricultural policies to improve their production capacity and decide on what to produce as the inefficient allocation of resources and a threat to food security.

In this respect, the Uruguay Round was a major turning point in the governance of social reproduction and human security, transposing them to the 'depoliticized' realm of economic and technical expertise and innovation, that reflects the historically specific logic of new constitutionalism as it insulates economic policies from democratic accountability and popular contestation (Burnham 2001, 2014; Hay 2007).

The Proposal of the Jamaican Delegation

While the market-based view of food security which reflected the predominant neoliberal ideology was supported by many of the Cairns group countries of major agricultural exporters, some developing countries of net importers spearheaded by Jamaica, drew attention to their limited purchasing power to buy foodstuff at the world prices and the subsequent importance of national

policy-making following their development objectives in food and agriculture. Highlighting the potential political and nutritional risks that price fluctuations in basic crops might give rise to, the delegacy of the Jamaican government, belatedly supported by Mexico and India, claimed that the dependence on world markets for basic needs impinges on national sovereignty and conflicts their right to determine national development priorities.

The Jamaican proposal stressed that national food sufficiency does not necessarily result in distorting free trade and that under the conditions of growing world interdependence, self-sufficiency could be effective if supplemented by measures to facilitate normal trade flows. The Jamaican delegacy challenged the US position and also the 'rhetorical goal' to produce a 'level playing field' which paradoxically and asymmetrically advantages industrialized countries, and particularly the US. To reveal the existing asymmetries of power, the Jamaican delegacy argued that the negotiation process of the Round must distinguish between Northern subsidies for overproduction and export dumping and the Southern subsidies that target sustainable agriculture, rural employment and food sufficiency.

Even though the commitment to uphold the 'special and differential treatment' especially of the least developing countries, namely that they are not required to adopt the liberalisation measures that do not align with their development needs, was acknowledged at the opening of the Uruguay Round and in the mid-term review in 1989, the US persisted on the removal of special treatment for all, including the poorest countries, or at the best 'applying it on highly conditional terms'. According to Watkins (1991, 47), this gesture intended to transform the outcome of the GATT Round "into an extension of the World Bank-IMF system with the force of international law and the threat of retaliation". One of the earliest examples of the possible consequences of violating the new trade rules for developing countries was the 1988 Nigerian ban on US wheat imports, which used to be the biggest external market for the US. Initially threatening to ban Nigerian textile export to the US, "the Bush Administration has warned that it will use a Uruguay Round settlement to outlaw the ban and secure the free import of US wheat into the country" (Watkins 1991, 49).

Notably, Jamaica's approach to the US proposal of food security was not a total rejection of the market-based approach. Instead, it emphasized that the self-sufficiency needs and interests of the less developed countries and free trade are not necessarily mutually exclusive, suggesting a

potential ground for rethinking and renegotiating alternative views. However, this perspective could overcome the structural power of the transnational neoliberal forces, typically led by the US.

At this juncture, it is important to point out that the ruling elites of most African countries did not show a strong response to the liberalization of agricultural trade and the associated concerns of rising food insecurity (Watkins 1991). Instead, their primary concern was to ensure an incessant supply of cheap food imports to urban consumers, the military and the government officials. Thus, the 'cheap food' recognized as a distinctive feature of neoliberalism provided a strong ground for a hegemonic consensus between the ruling elites of the Global South and the North.

Nonetheless, as Anne Orford (2015, 59) duly observes, the WTO Agreements, are not only multilateral trade agreements that set the formal rules of regulation of liberal trade for the new world order.

> [They] are concerned with broader issues about the limits of state intervention in the operation of the market. As a result, [they] should properly be thought of as governance agreements rather than trade agreements. For example, the ambition of the AOA is to remove any form of "support" for agricultural production. The idea that governments should protect their populations by guaranteeing the supply of food is dismissed by today's free traders just as it was dismissed by nineteenth-century free traders.

Similarly, the TRIPS and the AOA are substantial governance mechanisms that reconfigure the relationships and the separations between the economic sphere and the state and redefine the latter's roles concerning the agriculture and food sectors that are fundamental for human security. Despite their multilateral appearance to construct a 'level playing field' through the formal rules (McMichael 1993, 198), they have substantive ramifications for knowledge production and the provision of basic needs as they "substantially intensify new global hierarchies within and between states". Drawing on a distinction between multilateral formal rules of regulation and their substantive dimensions that "concern structural consequences of such inter-state formalities," McMichael (1993, 198) writes, the liberalization of trade initiated by the GATT complements "the IMF in a new, intensive disciplining of economic trade relations by global institutions in a context where Third World special treatment (e.g. farm sector protection, technology transfer) is

withdrawn". As such, these outcomes of the Uruguay Round are vital steps in the institutionalization of a new 'social structure of global accumulation'.

While these global governance mechanisms unfolded in variegated ways depending on each state's wealth and power, states were subject to similar privatization measures that systematically eroded existing regulatory frameworks, state infrastructure and the public institutions of the earlier era. In addition to the neoliberal measures thoroughly explored by feminist scholarship, including the unprecedented privatizations of public services and institutions including those of healthcare, education, child and elderly care that seek to transfer the costs and the labour of reproduction to the households, typically as women's work, the liberalization of agriculture dismantled the considerable security and protective measures that farmers and the agrifood sector enjoyed in the earlier era of state-centered welfare capitalism, subordinating livelihoods, resources, trade and the flow of credit to the workings of the market. The agreements of debt with the IMF and the World Bank which carried the conditionality of overall liberalization of the economy and commitment to the requirements of the WTO and the TRIPS contributed significantly to these erosions.

Notably, "poorer countries made the transition more abruptly, while in richer countries, especially the United States, the EU member states and Japan, agricultural subsidies continued as part of the national regulation of the economy" (Keyder and Yenal 2011, 60). Countries unable to resist the pressure of international agencies due to their financial constraints, for instance, in countries such as Turkey, policy conversion to adapt to the global markets and repeal the regulatory framework of national development was swift through legislative reforms (Keyder and Yenal 2011). Nizam and Yenal (2020, 6) note that in Turkey "more than 20 different laws were passed between 1999 and 2007 that enabled further liberalization and privatization of agricultural production and trade", emphasizing the 2006 Seed Law, as the one causing the most social discontent.

The TRIPS and the AOA were therefore key new constitutionalist mechanisms of the neoliberal restructuring of state forms and the nature of welfare. They reduced the expenditures for public infrastructure and investment in agriculture and immensely restricted the state's abilities to promote food sufficiency, non-market subsistence practices and protective measures against the fluctuations in the food markets while facilitating the intrusion of capital into human and nonhuman life. In addition, public institutions including agricultural research centers, and public

banks that supported agricultural research and innovation to support for instance the cultivation of landraces were gradually dismantled and appropriated through a series of privatizations. For instance, in the case of Turkey, the state did not withdraw from the sector but rather introduced market-friendly policies and supported the subjection of the agriculture and food sectors to competitive global markets (Keyder and Yenal 2011; Nizam and Yenal 2020). The farmers and firms who produce for export and replace traditional crops with 'cash' crops were selectively rewarded with governmental support.

Rethinking Orford's (2015) and McMichael's (1997) claims in light of the insights of the feminist social reproduction lens, it is possible to further claim that the TRIPS and the AOA are neither solely trade agreements nor *only* concern economic governance. They are also global governance mechanisms that substantially restructure the nature and the governance of human security and social welfare, particularly associated with the provision of basic needs, and the distribution of food security between the poor intertwined and engrained with the transformations in agriculture and the shifts in 'food regimes`.

Critical scholars (Pechlaner and Otero 2008) notably highlight the two key main trends that shape the neoliberal 'corporate food regime' (McMichael 2009, 2013, 2021); namely the liberalization of agriculture and the development of agricultural biotechnologies, through the AOA and the TRIPS, together consolidate the deepening corporate power in the global food system and the intensification of the contradictions of social reproduction across the poor of populations of the Global South and the Global North. The neoliberal patent regime substantially informs the dynamics of the 'corporate food regime' and the consolidation of 'food security' as a market-based good – the (re)organization of agriculture under the free trade regime and the unparalleled permeation of agricultural biotechnologies, hence the reach of private property to the food regime, the different ecologies and social relations of agriculture, food quality, human health and the production of agricultural knowledge and seeds, which are the 'first link in the food chain' (Kloppenburg 1988).

PART III

An Overview of the TRIPS Agreement and New Constitutionalism

Let us now turn to an overview of the articles and the principles of the TRIPS Agreement (1994) that feature the logic of 'new constitutionalism'. Rather than providing a comprehensive outline of the Agreement, the points below aim to highlight the key points and major themes I revisit in the next chapter.

The Preamble declares the aim of the signatories "to reduce distortions and impediments to international trade and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade".

The Dispute Settlement of the WTO The members must "ensure effective action against the infringement of intellectual property" (TRIPS 1994, A1C: 19). Unlike the earlier diplomatic dispute settlement processes of the GATT that were diplomatic in nature and the absence of enforcement mechanisms in the WIPO, the WTO's dispute settlement is legally binding.[64]. When a satisfactory settlement is not reached, economic sanctions apply. This 'robust mechanism of appeal' and enforcement (May 2006, 72) indicates the coercive and disciplinary power that underpins the neoliberal patent regime, suggesting it is a new constitutionalist mechanism that enforces the primacy of capital and the pursuit of rent, dominantly in the fields of biotechnology.

This is indeed a major triumph for the corporations who are the prevalent patent holders and are granted "the extension of the protection of IP in the international realm as well as the harmonisation of law within WTO" May (2006, 72). Notably, through this institutional armour, private corporate rights are protected and the disputes over corporations' rights are settled at the WTO through the agency of inter-governmental diplomacy[65]. This 'transnational legal order'

[64] The Agreement grants to the patent holder the right to access the premises of the defendant to investigate and collect the materials that have the potential of infringement (Blakeney 1996 cited in May 2006, 71). This is an important divergence from the earlier legislation in extending the protection of the right holders before an actual infringement (May 2006, 71).

[65] Cutler (2018, 66) states that "*the transnational* does not displace the national or international. Indeed, *the transnational* requires both international and national laws to operate. *The transnational* operates in the shadow of the state, for it is the state law that accords legitimacy to transnational laws by creating the

central to global governance tends to obscure the centrality of the *de facto* political-legal powers of the corporations as private actors (Cutler 2018).

The significance of private actors in settling international regulatory frameworks did not emerge in the neoliberal era; as noted earlier, trading corporations and organizations, and guilds were influential actors of the nineteenth century. However, Cutler (2018, 63) observes, "the global scope of private systems of governance has never been as pervasive as it is today". Their pervasiveness is related both to the geographical scope they cover and also to the domains of human and nonhuman life the power of capital extends to and shapes. This is a vast transformation in global governance that exhibits the pervasive logic of new constitutionalism, enhancing the structural power of (transnational) capital in the global political economy and codifying its primacy over domestic laws and policies. The protection of private property and the priority of capital accumulation become the main principles of global governance and the 'rule of law' that underpins it.

The immense legal, political and economic power of the private actors, specifically the corporations, over the decisions that shape the daily lives, health and human security are obscured through the institutionalization of increasingly complex mechanisms of governance that are evidently out of the reach of those who are most affected by it. The dispute settlement mechanism attends to corporate rights and conflicts through the public authority of intergovernmental agencies and legal experts from member states and can be seen as legally recognizing corporations as significant governing entities on a par with states, while obscuring their *de facto* power over human security, including food security and basic health. This dynamic reshapes the conditions for survival through governance mechanisms that people hardly have any control over.

politico-legal structures and ideological dispositions that enable and facilitate both the enactment and enforcement of these laws."

Article 27[66] is known as the most divisive article between the global North and the South. For the first time, *it removes any limitation to what is patentable*, leaving it at the discretion of member states to exclude diagnostic, therapeutic and surgical methods as well as plants and animals. Making any invention, whether *product or process*, in any field of technology a legitimate object of private property, the first part of Article 27 ends another long-debated issue of product or process patents discussed earlier. Obscuring the product-process distinction, which may seem like a mere legal-technical issue, undermined the strategic role it has played in developing countries' generic drugs industry as we discussed in Chapter 4, and facilitated the pervasive tendency to recognize product patents as the standard patenting practice.

Another upshot of removing this distinction can be observed in the regulations used to assess the health standards of genetically engineered products in the US. Ruling out the substantially different processes involved in cultivating crops, the US and Canada use a regulatory framework based on the 'substantial equivalence' of genetically modified products with conventional products, concluding that their safety is "on a par with traditional foods with an established history of safe use". Ironically, what counts as an invention that does not exist in nature when it comes to deciding on the eligibility for patentability is nonetheless considered to be

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[66] Article 27 (1) 'Subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. […], patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

(2) Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect order public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

3. Members may also exclude from patentability:

(a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement'. (https://www.wto.org/english/docs_e/legal_e/27-trips_04c_e.htm)

substantially equivalent to a conventional crop when it comes to assessing its safety for health. Accordingly, Health Canada declares that its Novel Food Regulations assessing genetically modified crops are product-based and do not consider the processes by which the product is developed (Health Canada 2024; Pechlaner and Otero 2008, 361).

Article 27 has ignited intense controversies between Canada, the European Union (EU), Japan, the USA, and the developing countries, and "almost stalled the latest round of multilateral trade negotiations" (Linarelli 2003, 197). Before the TRIPS Agreement, the "majority of countries expressly excluded plant varieties from IP protection, including most countries in the Global South, and even some countries with industrialized agricultural sectors" such as Canada and Norway enacted their first plant breeder rights respectively in 1990 and 1993 (Peschard 2022, 22).

The United States demanded to remove all exceptions to patentability (GATT 1988b). On the other end of the spectrum was a group of Global South countries known as the G14, spearheaded by Brazil and India defending that exclusion must be extended to inventions contrary to public health as well as "discoveries; material or substances already existing in nature; methods for the medical treatment of humans or animals; and nuclear and fissionable material (GATT 1990)" (Preschard 2022, 23). The EU took a balanced approach by restricting exclusions to "plant and animal varieties, processes that were purely biological, and inventions that went against public order or morality" as per GATT 1988 (Preschard 2022, 24).

Article 27.3(b) refers to plant varieties, stating that the member states are under the obligation to apply patents or other forms of intellectual property protection, such as the plant variety rights (PVRs) already existing in the US and Europe under the International Convention for the Protection of New Varieties of Plants (UPOV 1991). The protection authorized by the TRIPS occluded two major exceptions allowed by the UPOV Convention (1991, Article 15(1)(iii)). These are known as the breeders and farmers exemptions which, up until then, allowed the use of protected varieties for breeding and research, and for subsistence farming without the permission of the patent holder. This led to vast changes in the patterns of subsistence, agricultural organization and the social reproduction of small to mid-scale farmers and rural families in the Global South. For these communities, seed-saving and sharing have been crucial means of producing, sharing, and disseminating agricultural knowledge to manage their livelihoods. However, these practices fundamental for their 'material life' (Braudel 1992) have now been effectively criminalized and legally prohibited.

The relationship between private rights and public interest/good is most explicitly articulated in Article 8.[67] However, a closer look shows that the article in effect pays no more than lip service to potential conflicts between patents and public goods by identifying public interest with the protection of intellectual property (see the italicized part of the Article), and thereby hollowing out any understanding of public health and public good defined independently of patent protection or rendering them legally and economically irrelevant. As we shall see, this pervasive economistic logic that hollows out the substantial significance of the public domain and public goods is evident also in the definition of food security articulated in the preamble of the AOA.

The duration of the IP protection by member states is universally harmonized in Article 33 as twenty years from the filing date. In Chapter 3, we saw that the controversies about the duration of protection largely reflected concerns about balancing the time required for the public dissemination of knowledge and the profits accrued from the patents as private rights. Thus, a fair distribution of the benefits of the inventions among private actors and the public was a major concern of the debates over the duration of patents. Since the implementation of the TRIPS agreement, it has become common practice to extend the official 20-year patent protection using various legal strategies and tools. These include layering patents (diversifying and increasing the number of patents to safeguard a specific product), creating patent thickets, combining existing drugs to generate new patents, initiating lengthy litigation against alleged infringements, and lobbying to hinder the entry of generic products into the market.

Flexibilities **and** ***compulsory licensing of innovations*** to enhance developing states' access to technologies and treatments, for instance, of life-saving medicines were constrained by the developed states' negotiators. While Article 31 of the TRIPS Agreement allows compulsory licensing, it is *de facto* difficult and conditional on the efforts that must have been performed for

[67] 1) Members may, in formulating or amending their national laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote public interest in sectors of vital importance to their socio-economic and technological development, *provided that such measures are consistent with the provisions of the Agreement*

2) Appropriate measures, *provided that they are consistent with the provisions of this Agreement*, may be needed to prevent the abuse if intellectual property rights by rights holders, or the resort to practices which unreasonably restrain trade or adversely effect the international transfer of technology (GATT 1994, A1C:5, *emphasis added*)

a reasonable time [the duration of which is suggested by the patent holder] to get authorization from the patent holder on reasonable commercial terms before evoking compulsory licensing.

The Agreement recognizes waiving of these limitations in times of national emergency and extreme urgency but even then, requires the right holder "to be notified as soon as reasonably practicable" (May 2007, 77). The most recent example is the proposal of a temporary waiver filed by India and South Africa in October 2020 for the prevention, containment, and treatment of COVID-19, requesting the suspension of some of the key articles of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) until global vaccination was widespread (WTO TRIPS Council, October 20, 2020), highlighting that the urgency of a global response requires "unhindered global sharing of technology and know-how". Even though the proposal gained support from more than sixty mostly developing countries, along with a declaration of support from the World Health Organization (WHO), it faced strong resistance from the EU, the UK and Big Pharma. At a TRIPS Council meeting, the EU asserted that "there is no indication that IPR issues have been a genuine barrier to COVID-19-related medicines and technologies" (Balasubramaniam 2022), showing the prevalent reluctance to resort to the flexibilities even in cases of extreme health emergency.

The early steps of new constitutionalism as a part of the neoliberal project can be observed in the landmark cases and the decisions of the U.S. Supreme Court and the USPTO before the global institutionalization of the neoliberal patent regime through the TRIPS and the AOA. Before concluding this chapter, I briefly turn to these milestone cases that set the precedents of the legal-political structure that make possible the production of agrobiotechnology, more broadly the neoliberal model of knowledge production and "GM agriculture as its quintessential example" (Tyfield 2016, 344). Rather than discrete cases, I take these decisions as critical moments in the making of a new constitutionalist governance framework and the common sense of 'market civilization'.

The Early Legal Steps of New Constitutionalism

The early 1980s represented a transformative era in intellectual property law, setting the stage for the rise of neoliberal constitutionalism. This period saw critical developments initiated by the U.S. Supreme Court and the formation of the Court of Appeals for the Federal Circuit (CAFC),

signalling a renewed emphasis on intellectual property rights. These changes catalyzed essential structural reforms within the Patent and Trademark Office (USPTO), reshaping the landscape of intellectual property in profound ways (Brown-Keyder 2007). This shift, described by Brown-Keyder (2007, 159) as the "spread of trade-based IP like thick ooze" began in the US and extended to the EU and Japan, facilitating the rapid privatization of technological advancements and exacerbating the divide between the Global South and North (Muzaka 2018, 49). Simultaneously, neoliberal restructuring decreased state investments in innovation in countries like India and Brazil, in contrast to the Reagan administration's efforts to promote advancements in life sciences and biomedicine in the US (Cooper 2008, 3). Supreme Court decisions played a crucial role in establishing a legal framework that reinforced neoliberal principles by redefining the boundaries between public and private sectors and between economic and political spheres.

1980 Bayh-Dole Act (PL 65-517; Patent and Trademark Amendments Act, December 12, 1980). The Bayh-Dole Act was a key legislation in the neoliberal restructuring of knowledge production in the US. Under the Act, academic institutions and publicly funded researchers are allowed to secure private ownership of inventions resulting from publicly funded research and ensure their commercialization by transferring their knowledge to corporations through exclusive licenses. The Act thus reorganized the social and political forces of knowledge production by institutionalizing "an entrepreneurial public-private alliance" (Cooper 2008, 27).

The Bayh-Dole Act significantly benefitted not only biotechnology companies but also the pharmaceutical companies that collaborate with the universities. In 1965, research areas related to the pharmacy industry accounted for 15% of total university patents in the USPTO, increasing to 35% by 1988 (Mowery 2005). The U.S. Government Accounting Office Report in 1978 shows that before the Act, the government owned almost thirty thousand patents and only less than 5% of these were commercially licensed. Through this Act, the production of knowledge, particularly in the pharmaceutical sector, was turned into a competitive advantage (Coriat et al. 2006). [68]

Drahos and Braithwaite (2002, 163) highlight that in the first five years following the Act, patent applications by universities in the field of human biology increased by 300%. The major beneficiaries of the Act, then and now, are the burgeoning coalition of massive corporations

[68] Brazil and India's introduced similar Acts in the upcoming decades, following the lead of the US, respectively introducing the Innovation Act of 2004 and Indian Utilisation of Public Funded Intellectual Property Bill of 2008 (Muzaka 2018, 52).

especially in the pharmaceutical and agribusiness sectors, "start-ups, and elite universities all interested in 'biotech' and all dependent, if in different ways, on private ownership of research results in the form of patents" (Tyfield 2008, 344).

This marked a crucial step in dismantling the public infrastructure of knowledge production from the postwar era, enabling the private appropriation of publicly funded knowledge that significantly supported the Green Revolution discussed in Chapter 4. Delinking the public-funded process from the product which could then be owned as a capital asset and further commercialized through licensing, the Act was a substantial step in socializing the risks and the cost, while privatizing the benefits and the profit of the patent-holder corporations. The legislation was an ideological and institutional turning point towards the understanding of the private sector as *the* bold risk-taker engine of innovation, which brushes under the carpet many earlier publicly funded breakthrough innovations thoroughly documented by critical scholars (Boldrin and Levine 2002; Mazzucato 2011).

1980 Diamond v. Chakrabarty (447 U.S. 303, 1980) This Supreme Court case is a landmark decision in the expansion of patentability to living organisms, including plant genetic resources. In 1972, General Electric filed a patent application listing its genetic engineer employee A. N. Chakrabarty as the inventor of a genetically modified bacterium[69] capable of breaking down crude oil. General Electric made the case that there is no natural bacterium that possesses this feature, and the new human-made bacterium is to be used for the control of destructive oil spills. At first, General Electric's application was rejected because a microorganism is a 'product of nature' and as a living being, it is not a patentable subject matter under the Patent Act of 1952.

Upon appeal, the U.S. Supreme Court overturned the decision, claiming that the criterion of patentability does not rely on the distinction between living and non-living beings, but rather on being a man-made invention or a discoverable product of nature. The decision illustrates the difficulty of maintaining a clear-cut distinction between a discovery and an invention for the products of biotechnology. It was indeed a turning point in the expansion of the scope of patentable subject matter such that by the turn of the millennium, "the USPTO had issued patents on about 6,000 genes, one-sixth of which were human genes" (Irzık 2007, 139). As Irzık (2007, 139)

[69] "Chakrabarty had created the bacterium by manipulating four rings of DNA plasmids from different bacteria strains into one host bacterium. These plasmids would replicate when the host replicated… The new *Pseudomonas* bacterium was capable of degrading four different components of crude oil… whereas the host *Pseudomonas* bacterium itself had no capacity for degrading oil." (Marciniszyn 1987, 142)

highlights, before this, "no one could claim monopoly control over the organism independently of how it was used in an invention." As the Court decision remarkably stated, the U.S. patent law could create a right for "anything under the sun that is made by man."[70] This expansionary view of intellectual property set the stage for an unprecedented process of legal enclosures that would in less than a decade become universally protected and enforceable.

The decision opened the doors to the first patent in 1988 on a genetically modified cancer research animal called the 'oncomouse'. The USPTO granted the patent to Harvard University which was then licensed to Dupont. Showcasing an instance of the ongoing 'accumulation by molecularization' (Nally 2011) that we discuss in the upcoming sections, the patent "covered the resulting whole mouse, and for that matter, *any* non-human mammal genetically engineered to develop cancer" (Prudham 2007, 16). This landmark ruling established a crucial precedent for the 1985 Hibberd case decision by the USPTO Board of Appeals regarding genetically engineered corn, significantly advancing the scope of patents on plant varieties and seeds. In no more than twenty years, three main corporations' (Syngenta, Monsanto, DuPont[71]) had a 70-80% share of the genetically modified seed market. It is essential to recognize that this development allowed for the patenting of germplasm ownership over traditional varieties, extending the reach of patents beyond merely genetically modified traits like herbicide tolerance and insect resistance that are typically isolated in the well-funded laboratories of multinational corporations.

1985 Ex parte Hibberd (227 U.S.P.Q. (BNA) 443, 445, Sept. 24, 1985) complements the *Diamond v Chakrabarty* ruling on the patentability of microorganisms. The United States Board of Patent Appeals and Interferences has reversed a fifty-year-old patent policy by applying the language and logic used in the earlier decision regarding microorganisms to seeds and plants. This decision indicates that protection under the Plant Protection Act (PPA) of 1930 and the Plant Variety Protection Act (PVPA) of 1970 does not prevent patent protection. The decision to grant patents to scientist Kenneth Hibberd and his co-inventors for the tissue culture, seeds, and whole plants of a corn line selected from tissue culture (Kloppenburg 1988, 263) marked a significant

[70] *Diamond v. Chakrabarty*, US Supreme Court, March 17, 1980, 447 U.S. 303.

[71] After the mergers, today they are respectively ChemChina, Bayer and Corteva – three of the corporations with the highest patent ownership in the market with a rather narrow range of seeds of corn, canola, soybean and cotton https://www.mordorintelligence.com/industry-reports/seeds-industry.

shift in perspective.This decision moved away from the earlier hegemonic common sense that patent protection was inadequate and even at odds with the Plant Patent Act (PPA) and the Plant Variety Protection Act (PVPA), both of which primarily aimed to protect plant life and agriculture. Exhibiting the logic of the 'accumulation by molecularization' (Nally 2011) at work, "claims can be taken toward an "assemblage" as a whole, and also to individual components of this "assemblage"' (Van Brunt 1985, 1060). The *Hibberd* decision broadens the scope of patentability by licensing components such as the 'gene for herbicide tolerance' to third parties. Notably, the original patent application included over 260 claims, showing not only the unprecedented permeation of private property but also the complexity, if not the impossibility, of legally challenging and overruling an issued patent.

For the private sector, the *Hibberd* case decision was a dream come true. Its most profound effect was to legally require farmers to buy their seeds from the market each year, overriding the breeders' rights protection under the PVPA. The decision represents a critical turning point in the systematic dispossession of small farmers in both the Global South and the North of their historic rights to save and replant seeds. This action strips them not only of their means of production but also of their fundamental right to subsist. In many respects, it echoes the abolition of the 'right to live' faced by the propertyless in the making of the nineteenth-century human security regime discussed in Chapter 2.

In addition to these landmark cases, we must highlight a more recent decision in 2013 when the Supreme Court had to decide whether unaltered human genes were patentable (Pistor 2019, 110) While the Court unanimously refused their patentability, the legal debate and the decision turned to interpret the Patent Act of 1790, whose new version uses the vague term of 'improvement' as a condition for patentability: "Whoever invents or discovers *any new and useful* process, machine, manufacture, or composition of matter, or any new and useful *improvement* thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." (cited in Pistor 2019, 110). Inserting 'improvement', which evokes the prevalent discourse of the nineteenth century used to justify colonialist land enclosures, as a contemporary condition for patenting life, the substantial question regarding the limits of patenting was left, with a swift of hand, to the discretion of the judiciary and the patent offices.

Forging A New Common Sense: A Reprise

Rather than discrete cases, I take these decisions as critical moments in the making of new constitutionalist governance of human security and the common sense of 'market civilization'. Within the scope of the neoliberal regime, political-economic questions can easily be rendered technical-legal issues and impartial decisions rather than politically contentious decisions, reflecting Gill and Cutler's (2014, 27) claim that with the shift to the neoliberal rule of law in global politics, social problems "are conceived as involving narrow technical choices between rules and jurisdictions, in a process managed by lawyers who are often part of a transnational legal-commercial community". In this context, institutions such as the U.S. Supreme Court and the judicial review tend to "preserve the oligarchy of private property by declaring the economy as a 'private sphere' outside of the realm of politics" (Gill and Cutler 2014, 27).

As we will recall from the earlier chapters, what counts as an invention as opposed to discovery and striking a balance between the protection of public goods and private gains and incentives has been a matter of contestation since at least the nineteenth century. These cases at the onset of neoliberalism in the 1980s showcase the ease with which the distinction between invention and discovery is blurred for biotechnological products, leading to the claims of intellectual property rights over 'mere compilations of facts' or a particular arrangement of already available data which was perceived as a part of the commons and the public domain.

This shift unsettles an important premise of the earlier patent frameworks, namely that "unoriginal compilations of facts would remain in the public domain, that this protection of the raw material of science and speech was as important to the next generation of innovation as the intellectual property rights themselves" (Boyle 2003, 39). A comparison with a Supreme Court decision in 1966 of a patent case based on the significance of the public domain is insightful in illustrating the shift between different social ontologies and rationalities that respectively underlie the decisions.

> The Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. Nor may it enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby. Moreover, Congress *may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain or to restrict free access to materials already available* (cited in Boyle 2003, 58; emphasis added)

Notably, the decision recognizes the ontological status of the public domain, and it is anchored in the knowledge existing in the public domain whose status as commons cannot be changed.

By contrast, concerns about securing the commons and the public domain, and balancing private gains with public goods and benefits which have been central to the debates on patents in the *longue durée* and even during the Green Revolution, appear to be excluded from legal reasoning in the neoliberal era. This marks a major break from the past, a complete reversal of a worldview, a paradigm shift in the Kuhnian sense. The perception of the public domain and commons has transformed dramatically. Once regarded as essential for driving innovation, promoting social welfare, and providing legal and political legitimacy, they are now increasingly seen as barriers to capital accumulation reinforced by 'objective' and 'neutral' legal codes and legislations.

The discursive shift to ‘market civilization’ becomes even more evident in another more recent milestone decision, this time of the Supreme Court of Canada, which overruled a former decision that had initially banned patents on the ‘oncomouse’ granted in the US. In his analysis of the case[72], Prudham (2007) highlights the unprecedented recourse of the judges to international economic competitiveness and the mobility of capital in their defense of the patent: “The mobility of capital and technology”, the judges reasoned, “makes it desirable that comparable jurisdictions with comparable intellectual property legislation arrive at similar legal results” (cited in Prudham 2007, 25).

The intrusion of the priority of economic competitiveness and capital mobility into legal reasoning as decisive criteria signals a broader tendency of neoliberal governance – that is, to frame the rulings that extend the reach of private property as technical-legal decisions rooted in the presumably ‘objective’ criteria. The presumed authority of the ‘science of economics’ largely based on the assumptions of neoclassical economy presented as ‘neutral’ and scientific’ offers ‘objective’ criteria for political and legal decisions, largely informing the dominance of intellectual property-based, neoliberal knowledge production. The interconnection between the neoliberal ‘rule of law’ and the principles of Chicago School economics creates a formidable framework that not only legitimizes but actively reinforces the neoliberal transformation. This synergy establishes

[72] *Harvard College v Canada* 2002, SCC 76, Per McLachlin C J and Major, Binnie and Arbour J.J

a powerful narrative and an institutional armour that shapes legal and economic structures, further entrenching neoliberal ideals in societal norms and policies.

Evoking Margaret Thatcher's (in)famous claim that denied the existence of society (September 23, 1987)[73] , one can plausibly claim that such legal reasoning is predicated on a similar ontological denial of the public domain, social and natural commons and particularly the "agency of social reproductive forces"[74] (Barca 2020) that render them invisible as the constitutive components of society, nature and knowledge production, forging the hegemonic idea of the private enterprise and the forces of production as the principal locomotive of innovation.[75]

Like the 'fictitious commodities' of land, labour and money (Polanyi 2001), we could say that these milestone decisions were a part of the construction of the fiction necessary for the commodification of knowledge[76]. This fiction largely pivots on what Haraway calls the "myth of autonomous invention" (Haraway 1997 cited in Prudham 2007, 414). It suggests that, despite "the complex social and biophysical contributions", including the social and ecological contributions of human and nonhuman labour, "involved in the (re)production of the mice and canola, they can be legally sustained (and exchanged) as the inventions (and thus property) of single authors",

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[73] Accessible at the Margaret Thatcher Foundation, interview for Woman's Own ("there's no such thing as society") | Margaret Thatcher Foundation

[74] All human and nonhuman labour that "reproduce humanity by taking care of the biophysical environment that makes life itself possible" reproduction of life itself, yet its existence, Barca (2020) is obscured and denied by the narrative of the Anthropocene.

[75] In a long passage, David Tyfield (2016, 343) explains the specificity of neoliberalism as a market fundamentalist epistemology and the centrality of restructuring knowledge production for the neoliberal project, suggesting what I call above the ontological denial of the public domain and the commons:

> …neoliberalism necessarily wears the garb of rational legitimacy but also hands
> questions of rational judgement over to the market, rather than preserving them within the field of rational argument itself. Neoliberalism, therefore, is a project that is not only foundationally inimical to institutions of knowledge production that claim for themselves intrinsic criteria of rational argument – arguments that may well (often, if contingently) contradict the judgements of marketized outcomes and so represent intransigent critical outposts against the rule of the market. More specifically, by vesting the construction of legitimate knowledge *not* in critical, rational and (quasi-)public debate, or an idealized 'republic of science' (Polanyi 1962), but in the outcomes of market-based entrepreneurialism, neoliberalism is also thereby foundationally opposed to the structures and professionalized institutions of modern scientific research and education in the 'public good' form they had taken in the post-war period.

[76] See Irzik (2007) and Jessop (2007) for a thorough discussion of 'knowledge as a fictitious commodity'.

undermining the significant role of collective forms of labour, the public domain and social commons in knowledge production.

By redrawing the boundaries between the economic sphere and social reproduction, valuable and ‘non-valuable’ forms of knowledge, these decisions legitimatized and consolidated the making of the neoliberal patent regime and the so-called ‘Bio Revolution’. Despite their shared orientation to develop and extend the use of 'miracle seeds' to end global hunger, the emergence of the neoliberal patent regime as a part of the broader project of new constitutionalism and the dominant idea of the private sector as the driver of innovation are among the key factors that differentiate the BioRevolution from the Green Revolution.

The next chapter will build on these insights of the neoliberal patent regime as a new constitutionalist mechanism arguing that these tend to reinforce the unfolding food crisis as an expression of the crisis of social reproduction. It will further expand on the neoliberal patent regime as a new constitutionalist mechanism that generates a depoliticized financialized human security regime which tends to lock in the precarity of subsistence for impoverished populations, specifically of the South, as a permanent condition that is difficult to change.

CHAPTER 6

THE NEW CONSTITUTIONALIST ARCHITECTURE OF SOCIAL REPRODUCTION AND THE NEOLIBERAL PATENT REGIME

The law locks up the man or woman
Who steals the goose from off the common
But leaves the greater villain loose
Who steals the common from off the goose.

The law demands that we at one
When we take things we do not own
But leaves the lords and ladies fine
Who take things that are yours and mine.

The poor and wretched don't escape
If they conspire the law to break;
This must be so but they endure
Those who conspire to make the law.

The law locks up the man or woman
Who steals the goose from off the common
And geese will still a common lack
Till they go and steal it back.
Anonymous, 17th century poem (cited in Linebaugh 2010)

Towards a Critical Political Economy of the "Plants of Market Civilisation"

In a section titled 'Daily Bread', Braudel (1992, 104) refers to rice, wheat and maize as the 'plants of civilization' that consist of the staple food of the majority between the fifteenth and eighteenth century in most parts of the world. The plants of such civilizations, he eloquently writes, organized material and sometimes spiritual life, to the point that they have become ineradicable historical structures. Historical structures – the ideas, institutions and material forces of that epoch – based on the plants of civilizations of that era are central to the continuities and transformations that occur over a long period. These include ecological and climatic changes, changing diets and food deficiencies, the practices of subsistence deeply engrained in daily lives, the health and the existence of the populations over the *longue durée* including deaths, famines, epidemics, cycles of diseases, levels of mortality and births.

This situation has now changed dramatically, and one of the key factors driving such changes, analyzed from a political-legal perspective in the previous chapter, is associated with the emergence of what I call the *plants of market civilization*. These plants and associated living things today – and perhaps increasingly tomorrow – are shaped by a number of social forces associated with new constitutionalism and disciplinary liberalism and the power of capital in the shaping of an increasingly global market civilization. These developments are serving to reconfigure the nature of social reproduction in fundamentally new ways. As a new constitutionalist mechanism, the neoliberal patent regime shapes the provision of basic needs—such as food staples—by linking them to genetically modified and privately-owned plant varieties and seeds, that are owned by transnational corporations through patents. This monopolizes supply, granting corporations unprecedented power over people's daily lives, subsistence patterns, and health; as such, it constitutes in effect a corporate (bio)power over human and nonhuman life and shapes patterns of precarious social reproduction and human in/security, that cut across the lines of class, gender, and race.

The neoliberal patent regime that governs this, driven by the corporate-controlled 'BioRevolution,' suggests an 'ontological shift' in politics and everyday life akin to Polanyi's (2001) description of the nineteenth-century 'great transformation' as a metamorphosis rather than a continuous process of growth.

This development is exemplified in, but is not limited to, the increasing dominance of herbicide and pesticide-resistant transgenic crops, fertilizer-responsive hybrid varieties, or the (in)famous Golden Rice that remarkably "contains 70 pieces of intellectual property and 15 pieces of technical property spread across 31 institutions" (Feindt 2012, 285). The global institutionalization of (bio) patents on plants, animals, and essentially biological processes, particularly based on traditional agricultural breeding techniques implies the end of agricultural exceptionalism. The innovation process in plant breeding requires access to genetic information, which was treated as a common pool resource in the 1961 UPOV Convention. In Europe, agricultural exceptions to patentability were established in European law through the 1963 Strasbourg Convention and the 1973 European Patent Convention (EPC), which led to the creation of the European Patent Office (EPO). This legal-political framework did not require the member states to provide intellectual property protection on products associated with agricultural plants, generating a policy space for states to maintain their provisions typically legitimated by the "embeddedness of those issues in the economic and political fabric of States" (Pila, 2009, 448).

The extent and significance of the changes that have occurred since then are clear. "From 1999 until the end of 2020, nearly 4000 European patents were granted, mostly for genetically modified plants. In many cases, the plants and animals themselves were patented …confer[ing] absolute protection: this means that all plants and animals with the patented traits are covered by the patent, independently of how they are bred" (Then et al. 2021, 1). Notably, two highly controversial decisions in 2002 granting patents to plants, namely a 'patent on broccoli' (EP1069819) and a 'patent on wrinkled tomatoes' (EP1211926)[77], fundamentally derived from conventional breeding, opening the way for companies to make private property claims over conventional plants, seeds and breeding techniques (Then and Rippe 2009, Pila 2009; Feindt 2012).

[77] For a detailed discussion, see www.no-patents-on-seeds.org. Subsequently, on September 13, 2023, EPO **"**granted a patent [EP2708115, to Seminis (Bayer/Monsanto) covering conventionally-bred broccoli varieties with an increased content of healthy compounds (glucosinulates)**".** The decision was met with activists' claim that there was no major differences between this patent and the earlier one in 2002. "A patent was granted on broccoli with higher levels of glucosinulates as far back as 2002, which was also obtained from crosses with wild broccoli found in Sicily (EP 1069819). There are only minor differences between these patents. In essence, this patent was granted twice" (https://www.no-patents-on-seeds.org/en/news/super-broccoli).

Notably, producing the plants of market civilization relies on the genetic traits isolated from the endemic landraces typically based in the genetically rich and diverse countries of the Global South and their private appropriation. As Kloppenburg (1988) observes, biodiversity is concentrated in the developing countries of the Global South. "Ironically", Kloppenburg (1988, 46) writes, "the gene-rich are currently the world's least developed nations, while the gene-poor are the advanced industrial nations". The former serves as the "fertile germplasm pool for the rest of the world and the basis for advances in plant genetics. Emphasizing the interdependence of plant genetic resources for the major crops of global agricultural production, Kloppenburg and Kleinman (1987, 194) note that "the West Central Asiatic and Latin American regions have made the largest genetic contributions to feeding the world." Kloppenburg and Kleinman's (1987) thorough empirical research illustrates that "nearly all of the world's less developed nations … together have contributed the plant genetic material that has provided the base for fully 95.7% of the global food crop production" (Kloppenburg and Kleinman 1987, 194).

Consequently, a significant number of the genetic traits utilized in creating hybrid varieties that are resistant to diseases and responsive to fertilizers have their origins in developing nations. For instance, wheat landraces endemic to Turkey are paradigmatic examples as they have provided the genetic resources for the rest of the world. However, today, only a very small portion of wheat production in Turkey relies on the landraces (Kaan et al. 2016**;** Zencirci et al. 2018). In these processes, the production of the 'plants of market civilization' ensures that the primacy of capital is entangled in the (re)production of ecologies and its control over the production of life and life-making processes.

Building a global governance framework of social reproduction based on the neoliberal patent regime has also involved the efforts of the corporate elites to forge private property as the 'common sense' of social reproduction, together with a broad set of ideas, principally on food security and hunger, innovation, the public and private and the market. These ideas are discussed in detail later in this chapter.

These discursive strategies are intended to fortify and complement the invention of diverse legal tools such as 'patent thickets', evergreening strategies, new categories of patentability, and complex mechanisms that are often "developed behind the closed doors of large law firms, with

only a rare airing in a court of law or parliament" (Pistor 2019, 19). These deepen the reach of private property, expand corporations' capacity to generate wealth globally, undergird capital's mobility and obscure the processes of private appropriations, enclosures and dispossessions, placing them out of the accountability and the reach of the poor populations. The 'complexity' (Sassen 2010, 2014) of the neoliberal patent regime, the labyrinths of the intellectual property law accessible only to the legal experts – the "masters of the legal code" (Pistor 2019) – typically of the corporations located in the Global North operate as practices of depoliticization that tend to further insulate the global policies of food security and hunger from democratic contestation and legal challenges.

As the alternatives to liberalized capitalism collapsed in the late 1980s and early 1990s (Fukuyama 1992), social and political forces in the capitalist states and international institutions sought to institutionalize long-term market-based frameworks of governance to deepen and consolidate the neoliberal restructuring of economic, social and political life. In addition to their central role in the rise of neoliberalism and the decline of welfare state capitalism, they simultaneously attempt to govern the multifaceted 'organic crisis' (Gramsci [1971] 2012), which critical scholars have shown to be integral to neoliberal societies, in ways that do not obstruct the free circulation of goods, services and capital, and do not compromise the market disciplinary reforms and the "political preferences of investors and big capital" (Gill and Cutler 2014, 6-7).

As such, it is important to stress that these efforts to anchor the neoliberal transformations of economic, political, social and ecological life in the quasi-constitutional mechanisms and strategies are *future-oriented* as they aim to consolidate (neo)liberal frameworks of governance as historical structures that are difficult to challenge and transform. As such, they seek to conclusively preclude any alternatives to liberal capitalism, and neoliberal development models as unfeasible, unrealistic and even 'primitive'. This long-term, future-looking orientation of new constitutionalist governance is also entailed in Gill's framing of new constitutionalism in terms of the concerted 'civilizational' efforts to, in Cutler's (2018, 61) words, "reconstitute the material, the ideological, and the structural foundations of societies and political economies" under the discipline and the common sense of "an increasingly transnationalizing market civilization".

This development also involved a shift of power to the judiciary and the national intellectual property offices performing as lawgivers (Mylly and Griffiths 2021) by issuing decisions and precedents and interpreting laws and guidelines. Neoliberal reforms since the 1980s

have transformed national patent offices as a part of the public service into "client-oriented, corporately managed and relatively autonomous fee-dependent agencies" (Drahos 2010, 24) driven by market rationality. "Market rationality", Drahos (2010, 22) highlights, "was perhaps more likely to take hold in patent offices than in other parts of the public service as patent offices, since their emergence in the nineteenth century, have always provided a highly specialized service to a clearly identifiable group for a fee". Notably, the patent offices of the developing countries "receive help from outside players like the WIPO and the EPO in building the case within their own countries for budgetary autonomy" (Drahos 2010, 24). By the same token, Mylly (2021, 64) draws attention to their roles within and outside of national jurisdictions, acting "as global networked regulators, by cooperating intensively, streamlining their approaches, and affecting patent law developments and interpretations in other patent offices through technical assistance and training" exemplified in the case of the United States Patent and Trademark Office (USPTO), the Japanese Patent Office, and the EPO. This signals a transfer of power from the democratically accountable representative institutions to the judiciaries, arguably forming what Hirschl identifies as 'global juristocracy' (Hirschl 2004; Biscahie and Gill 2022).

In sum, whilst often deployed as a modality of crisis management, new constitutionalism anchors neoliberal capitalism in the structures of global governance that underpins the legal-juridical separation of the economic sphere from the political, acting as a depoliticizing force that seeks to 'lock in' "neoliberal frameworks of accumulation, with American geopolitical power as its ultimate guarantor". (Gill and Cutler 2014, 4). As such, new constitutionalist mechanisms are a part of the institutionalization of neoliberalism as a political project, intending to expand and deepen the reach of capital in human and non-human life, remove potential obstructions to capital accumulation, and delineate the new 'limits of the possible' (Braudel 1981; Gill 2014, 2017) to prevent progressive forces to radically challenge private forms of power. The following section discusses some of those mechanisms, specifically the patent regime associated with patents and property rights over key elements of social reproduction.

The Neoliberal Patent Regime: ideas, institutions, and material capabilities

Following the critical methodology of historical structures (dominant ideas, institutions, and material capabilities and potentials), this section identifies key material forces, institutions and

ideas that give coherence to the neoliberal patent regime, such as the market-based view of food security, and a fetishized understanding of innovation that echoes colonialist discourses of 'improvement', the transformation of patents as institutionalized into "free trade" pillars, and the corporate and political power structures giving material weight to processes of transformation. In doing so I will show how the neoliberal patent regime is a key component of the restructuring of social reproduction, in ways that include the commodification of knowledge, production, land, and patterns of agrarian change.

Material Capabilities

The Rise of the 'Knowledge Economy'

The neoliberal patent regime played a pivotal role in the upsurge of intangible assets following the crises of Fordism and the Keynesian welfare state and the subsequent rise of what has been typically coined as the so-called post-Fordist 'knowledge economy' in the frontier economies, seeking to open up new spheres of human and nonhuman life for capital accumulation and provide relative stability and coherence to this new growth model. The 'knowledge economy", however, is a complex range of forces of power and production and it is partly shaped by governments, corporations and research capabilities both public and private, and as such, its complexities cannot be discussed in detail in this final chapter. The purpose here is to indicate some of its modalities principally concerning food provisioning.

As we discussed in earlier chapters, the private appropriation of knowledge has been used as a 'strategic business tool' (May and Sell 2006; Muzaka 2018) by corporations to extend and control markets since they were granted the right to claim private property over the products of the collective labour of their employees since the late nineteenth century (Pashukanis 1978). In this long historical trajectory, the institutionalization of the neoliberal patent regime is a turning point because of the depth of the private appropriation it enables and the legitimacy it provides. The patent regime consolidated in the specific historical conjuncture when a new wave of enclosures was organized to secure the primacy of capital and maintain the advantageous position of the Global North in a hegemonic world order led by the US. As such, it could be viewed as part of the efforts and the long history to reinvigorate capital accumulation on a world scale.

Like the enclosure of land, which mobilized the capital accumulation necessary for the emergence of industrial capitalism, the enclosures and the commodification of knowledge through the global institutionalization of a patent regime made possible aspects of the knowledge economy, which in May's (2000, 42) words, "moved to the centre of capitalism's expansionary logic". The knowledge economy distinctively "relied on a more extensive and intensive mobilization of economic and non-economic forms of knowledge in the service of value generation" (Muzaka 2018, 45). Thus, how the commodification of knowledge and the restructuring of knowledge production as a part of the neoliberal project shapes social reproduction, mobilizes agrarian transformations predominantly in the Global South, and its impacts on the contradictions of social reproduction emerge as pivotal questions to be addressed.

Since the early 1980s, the welfare state form, particularly in the Global North, transformed into the internationalizing competitive state form and catching up in the knowledge economy typically relied on adopting the conditions of innovation-based competition, hence on the neoliberal model of knowledge production. This included a shift away from the domestic policies of the Keynesian era oriented towards full employment, a level of self-sufficiency in food and public provisioning to ensure a certain level of social welfare, especially for the working and non-working poor and a democratization of access to educational opportunities. These were replaced by strategic policies to gain a competitive advantage in the world markets. Throughout the 1970s and 1980s the governments of many countries in the Global North and South, facing high levels of debt and rising interest rates, either chose to or were compelled (through the lending conditionalities imposed by the international financial institutions) to liberalize their economies and drastically reduce public expenditures.

While state forms have always been partly shaped by competition in world markets, scholars stress that the transition to post-Fordism in a more open global economy has created a stronger and more pressing "whip of external necessity' (Muzaka 2018; Selwyn 2011). The international competitive treadmill noted by Jessop (2012) as based on innovation, as other scholars highlight, "manifests itself in the relocation of wealth generation in the limitless creativity of the human mind, a move which relies on ever-larger appropriations of society's comprehensive productive powers" (Muzaka 2018, 19).

Shift from the Green Revolution to the BioRevolution

The efforts to build a global patent regime prevailed in the wake of the failed attempts of a broader movement (Muzaka 2018) of the developing countries of the Global South, known as the G-77, that influentially advanced the set of ideas, policies and institutional structures known as the NIEO, (Murphy 1983; Cox 1979; Muzaka 2019) as noted in Chapter 4. This was one of the few moments when the deeply uneven power relations between the countries of the Global North and the South were critically rethought and the hegemonic *status quo* was thoroughly challenged by "a series of specific demands and considerations embodied in an impressive range and number of official documents adopted by international conferences" (Cox 1979, 729).

What makes it noteworthy for our purposes is that the demands and grievances by the developing countries included the inequities associated with the terms of the 'global exchange' of plant genetic resources between the rich but 'gene-poor' North and the poor but 'gene-rich' South (Kloppenburg 1988, 181). The efforts spearheaded by Brazil and India to reform the intellectual property regime and technology transfer conditions to prioritize the development needs of the Global South were a significant component of this counterhegemonic challenge, as noted in the previous chapter. The demands of the NIEO included the demand to regulate the ongoing flow of plant genetic resources from the South to the North, a demand that has notably initiated the so-called 'Seed Wars[78]' fought at the FAO in the late 1980s.

To recall our earlier discussion in the previous chapter, the NIEO insisted that the structural inequities in the global economy included the patterns of the global plant germplasm exchange and access to plant genetic resources (Kloppenburg and Kleinman 1987, 8; Kloppenburg 1988, 171), which much relied on the Global South's 'primitive' genetic resources enclosed and extracted by the developed countries to be then transformed into 'commercial 'elite' cultivars and traded back to the Global South as commodities. In Kloppenburg's (1988, 171) succinct words, "Third World nations found their own genetic resources, albeit transformed by plant breeders, confronting them as commodities".

[78] An article titled "You have heard of 'Star Wars'. Now there are 'seed wars'" in the *Wall Street Journal* (1984, June 15) announced the growing tension between the Global North and the South, signalling the geopolitical significance of the 'primary-ecological production' and the growing efforts to recast it within a neoliberal security apparatus.

While there is no systematic work on the monetary value of the benefits that the developed world reaped through this exchange, Kloppenburg (1988) approximates billions of dollars for the developed countries. Some examples for the US include "a Turkish landrace of wheat supplied the American varieties with genes for resistance to stripe rust, a contribution estimated to have been worth $50 million per year (Myers 1979:68)…an Ethiopian gene protects the American barley crop from yellow dwarf disease to the amount of $150 million per annum (*New Scientist* 1983: 218)…or the value to the American tomato industry of the genes from Peru that permitted an increase in the soluble content of the fruit is $5 million per annum" (Kloppenburg 1988, 169).

In addition, an alternative patent regime in India with a different set of rules was also a serious threat to Global North's corporate control of knowledge. Recalling the previous chapter, the 1970s featured the rising costs of R&D, the declining rate of discoveries in the chemical and pharmaceuticals sectors as well as the competition from generic manufacturers such as India who used an alternative patent system to deliver reasonably priced medication. For the Global North, particularly the US, "the gaps in the patent system when it came to the global control of knowledge would have to be closed" to prevent the potential challenges of a counterhegemonic patent system. Pharmaceutical companies learned their lesson well from their earlier experiences with penicillin and sulphanilamide that publicly accessible research and widely licensed technology would mean lower prices and lower profits (Drahos and Braithwaite 2002; Sell 2003; Sell and May 2006).[79]

Furthermore, the neoliberal patent regime was consolidated as a force to open new opportunities of valorization enabled by the life sciences "in the multitudinous and limitless biological processes, human or otherwise" (Muzaka 2018, 27; Cooper 2008; Rajan 2012), securing biotechnological advances to facilitate the commercialization of agrarian systems and to entrench the subordinate position of the Global South. The development of biotechnology in tandem with a strong and universal patent regime came to be viewed as a viable solution to the declining profits of the earlier chemical industry, more broadly of Fordist industrial capitalism, and to overcome,

[79] After World War II, this led to what one might call a patent rush among the pharma companies to attain IP protection for antibiotics such as streptomycin and more broadly to what is known as the era of 'wonder drugs' with drugs vast with immense sales, bringing vast and fast profits. The objections to their patentability, defending that their discovery depended on substances that naturally occur in soil and kill harmful microorganisms, were skillfully ruled out by the patent experts, or by 'patent engineering' as it is often called (May and Sell 2006, 152-53).

as it were, the social and ecological 'limit' to economic growth.

Castells highlights that the 'BioRevolution', particularly genetic engineering and the different applications of biotechnologies[80], is "at least as major a historical event as was the eighteenth-century Industrial Revolution, inducing a pattern of discontinuity in the material basis of economy, society, and culture" (Castells, 1996, 30). As Nally (2010, 44) highlights "this means that human, animal and biological materials – including the 'very reality of the grain' (Foucault 2007, 36) – can be restructured and harnessed to facilitate the commercialisation of agrarian systems" and food regimes.

While the so-called BioRevolution is continuous with the Green Revolution in terms of its aim to develop 'miracle seeds', the Green Revolution as discussed in Chapter 3, was largely carried out and promoted by the public sector initiatives whereas the BioRevolution was largely conceived by the private sector (Clapp 2012, 42). Buttel et. al (1985) compare the Green Revolution and the BioRevolution, stressing the latter's fundamentally private character as the feature that differentiates it most sharply from the Green Revolution. Even though the Green Revolution was funded by public-private initiatives, including the governments of developing countries, private foundations such as the Rockefeller and the Ford Foundation, and the International Agricultural Research Center (IARC), it is important to remember that "it was conceived by and implemented an institutional structure composed mainly of public organizations" (Buttel et. al 1985, 40).

A pivotal point in this respect is that a "strong public-sector overlay of the Green Revolution at least theoretically assur[ing] public participation in setting search priorities" and the "private industry had no critical contributions to make to the research process" (Buttel et. al 1985 1985, 41; Patel 2013). By contrast, the neoliberal model of knowledge production relied on making knowledge scarce through the neoliberal patent regime by restricting access to the products and the processes of public research, by subjecting the process of knowledge production and the

[80] 'Biotechnology" is a contested and contestable concept. General Accounting Office (GAO) of the U.S. Congress provides an official definition which captures the broad scope of such technologies: "Today, biotechnology is generally considered to be a component of high technology, and the 'new biotechnologies' are those resulting from recently developed, sophisticated research techniques, including plant cell and protoplast culture, plant regeneration, somatic hybridization, embryo transfer, and recombinant DNA methods" (GAO 1986, August 8).

research results to private appropriation in the search for profit and the ‘commercialization of science’ including the university research centers and public funding agencies.

The consolidation of the neoliberal patent regime is intertwined with the material capabilities enabled by biotechnology and genetic engineering. The pharmaceutical industry increasingly focused on ‘blockbuster’ drugs that required strong patents to yield windfall profits. (May and Sell 2006). Crop firms increasingly believed that technology would similarly revolutionize agricultural breeding, enabling them to capture innovation rents for their benefits (May and Sell 2006; Muzaka 2018). As thoroughly discussed by Kloppenburg (1988), the Green Revolution’s reliance on hybrid seeds and capital-intensive farming practices encountered significant biophysical limits. In other words, profitability in this sector relied on overcoming nature’s capacity to reproduce itself. The BioRevolution was largely a response aimed at overcoming these biophysical limits and socio-economic constraints, particularly the Green Revolution’s inability to overcome the reproducibility of life built into the features of a seed. While the Green Revolution encountered the capacity of the reproducibility of life as a limit to capital, the BioRevolution introduced a new era of biotechnological advancements that aspired to overcome them through innovations such as genetically modified organisms (GMOs), and other gene editing technologies, along with the new legal categories, such as biological patents (biopatents). By focusing on creating crops and seeds with stable, reproducible traits and reducing the reliance on external inputs, BioRevolution built on and advanced beyond the foundations laid by the Green Revolution.

The biotechnology revolution is arguably rooted in the (neo)liberal fiction of 'unbounded accumulation' which, according to the transnational social forces, could overcome the biophysical and social ‘limits’ that faced the Green Revolution. Scholars (Raustiala and Victor 2004, 283) highlight that the “biotechnology revolution created the impression that valuable genetic resources were abundant and, once discovered, could generate huge revenues”. This was largely made possible by the global institutionalization of the neoliberal patent regime reinforced by the fiction of ‘autonomous invention’. The global institutionalization of the neoliberal patent regime was a major difference between the Green Revolution and the BioRevolution of the neoliberal era that was based on an exclusively privatized form of knowledge production/innovation model that unprecedentedly tapped into life-making processes and the daily lives of the populations.

Corporate control over agriculture and biotechnology

There is indeed a dissonance between the concerted efforts of the transnational neoliberal forces to ideologically delink patents from monopolies and the prevalent trend of a 'global monopolization of knowledge'. As Rikap (2021,1) highlights, the "[l]eading corporations of the 21st century are intellectual monopolies, who rely on a permanent and expanding monopoly over portions of society's knowledge. Eight of the top ten companies in market capitalization can be considered as such" (PWC 2019, 2020 cited in Rikap 2021,1).

The associated upsurge of intangible assets is noteworthy: While intangible financial, assets were only 17% of the 500's total assets, by 2020 that figure reached a historical high of 90%. During this period, the remarkable shift from 32% to 68% occurred between 1985 and 1995, and since then a predominantly steady upward stream continues with another jump from 84% to 90% between 2015 and 2020. The dollar value of intangibles between 1975 and 2015 rose from 122 billion US Dollars to 21 trillion US Dollars. "Overall, in the 21st century, intangible assets accumulate at an increasing pace and lay in the hands of leading global corporations from core countries" (Rikap 2021, 5).

The TRIPS compliance has been a turning point in the vast flow of rents to the developed countries of the Global North where knowledge monopolies are typically located; for instance, the World Bank Report (2001) estimated the net inflow of $19.1 billion to the United States from rent transfers. According to the US Patent Office, more than 4.5 million patents were granted between 2002 and 2015 with only 12 percent granted to individuals and 43.5 percent granted to foreign, and 44.1 percent to US corporations. According to Drahos' (2010, 151-52) thorough inquiry, "10,000 patents were granted in the United States from 1790 to 1836, an amount that by the 1920s was being granted every three months, and by 2006 the USPTO was receiving more than 417,000 patent applications per year", an astonishing number, which makes one consider whether the US office had the personnel or capabilities to effectively process such applications.

In the massive relocation of capital accumulation in intangible assets, the two sectors closely linked to human security, namely, the pharmaceutical and agrifood industries have become increasingly central to capital accumulation (Panitch and Leys, 2009), emerging as two of the most highly profitable, and heavily centralized sectors in the global political economy. These sectors are known as 'life science industries' have taken over the biotechnology research in the frontier

economies (Cooper 2008; Muzaka 2009) and become the locomotive sectors to gain competitive advantage in the world markets and economic growth, as exemplified in the cases of Brazil and India that have adopted the imaginary of the 'knowledge economy' to become a competitive knowledge frontier.

Agrifood and pharmaceutical industries have seen a series of mergers and acquisitions between 1988-2000 with a worth of 514 billion dollars (Muzaka, 2009). A massive merger of 130 billion dollars took place in 2015 between the two giants of seed and agrochemicals, Dow and Dupont, setting off a rush of mergers and acquisitions. Two-thirds of the global supply of seed today is controlled by only three companies. A more recent study found that the concentration in the agrifood industry from 1997 to 2012 was sharper than the other sectors (Fixing Food, 2018). "A traditional yardstick for oligopoly industry concentration is when four firms control 40% or more of the market [known as CR4 Index]. For agribusiness, "that percentage is exceeded in beef slaughter (82 percent of steers and heifers), chicken processing (53 percent), corn and soy processing (roughly 85 percent), pesticides (62 percent) and seeds (58 percent)" (cited in Otero et al. 2018, 542).

According to the IFPRI's sector-based report, on the crop seeds and biotechnology sector the global CR4 index of 58% in 2011 increased to 65% in 2014. The Report states the "market share of the four largest firms in the global seeds market increased from 21% in 1994 to 54% in 2009, based on firm sales data" (IFPRI 2023, 82). The US Department of Agriculture (MacDonald and Fuglie, USDA 2023) reports that between 1990 and 2020, crop seed prices increased an average of 170% and "seed prices for crops grown predominantly with genetically modified (GM) traits rose 463 percent. That compares with a 56 percent increase in commodity output prices". The USDA further adds that seed companies motivated by the opportunity to raise seed prices and boost revenues enhanced their research and development (R&D) investments and quickened the process of creating new crop varieties (MacDonald and Fuglie, USDA 2023).

Gill and Benatar (2019, 171) draw attention to a close correlation outlined by recent scholarship "between the increasing profits of the world's largest food conglomerates and a simultaneous rise in global hunger levels since 2000: poorer 'consumers' are priced out of food

markets".[81] A similar trend is present in the pharmaceutical industry. Compared with the figures of the late 1980s, "the pharmaceutical market has become highly concentrated, with the 10 largest proprietary pharmaceutical companies having increased their share of the global sales from 12 percent to around 50 percent in the early 2000s" (Muzaka, 2009, 291).

We must thus highlight the unprecedented status of the neoliberal patent regime today in the global political economy. The patent regime has become a major global governance mechanism today that links the two sectors vital for the provision of the conditions of human security – namely basic health as the access to basic medicines and food security. On the one hand, the patent regime integral to the neoliberal restructuring of the global political economy, underpins and links these two sectors as the key nodes of innovation/knowledge-based competition and capital accumulation. And on the other hand, it is a pivotal institution for the provision of human security, which is increasingly tied to purchasing the commodities in the global markets produced by private corporate power that increasingly relies on the deepening and the extension of the commodification and the enclosure of social and natural commons. As such, it is situated at the crossroads of the intensified contradictions between capital accumulation and the social and ecological conditions and relations, life-making processes which the scholars of feminist political economy have aptly claimed to characterize the neoliberal governance of social reproduction and its crises-ridden nature.

The 'Second Enclosure Movement' and the Neoliberal Patent Regime

Critical scholars have duly highlighted that the enclosures of the commons and the accumulation of dispossession, are ongoing processes rather than historical moments of the past that facilitated the emergence of capitalist relations. Instead, they are ongoing processes inherent to the dynamics of capitalism that take novel forms in historical capitalism. Critical feminist political economy made fundamental contributions by highlighting that the enclosures and dispossessions restructure the ecological and social conditions of existence in deeply gendered and racialized ways and

[81] Notably, it is important to point out that not all food conglomerates are dependent upon patents for their products and profits. However, intellectual property has been a major driver of market concentration. The data on the top food and agriculture patent holders from 2002 to 2020 can be accessed at https://www.globaldata.com/data-insights/macroeconomic/global-top-food-and-agriculture-patents-holders-in-the--sector-2131915/

similarly reshape the ideological and institutional separations between production and social reproduction, private and public and political and economic to ignite capital accumulation.

As we discussed earlier, the enclosure of 'the commons' in England between the fifteenth and eighteenth centuries was a direct attack on the livelihoods of the poor, mostly the peasants, whose subsistence depended on the use of the common land and forests to pasture livestock, obtain water, food and gather wood. Social and natural commons do not simply refer to a pool of finite resources but are coined as 'commoning' (Linebaugh 2007; Standing 2019; DeAngelis 2001; 2004), they involve practices, relations and forms of labour of collectively reproducing themselves, communities and social and natural commons as social wealth. In Braudelian terms, they are constitutive of the 'material civilization' that consists of collective processes of life-making that support the reproduction of human and nonhuman life.

The right to commons recognized in the thirteenth century in the Charter of the Forest (also known as the Charter of the Common Man) was a fundamental yet relatively undermined legal document regarded as complementary to the Magna Carta. It legally guarantees the rights of the propertyless to the means of subsistence, to natural resources and partly the right to the means of production. The collective rights to use land were delimited by the obligations to preserve and reproduce them. Notably, the Charter also recognized the commons "as a place of refuge for those who had fallen on hard times or who were excommunicated from their community for whatever reason" (Standing 2019, 19). Thus, the commons were recognized as a safety net for the propertyless, aiming to secure the poor from the devastating impacts of poverty and social inequalities, and substantiating and concretizing the right to subsistence in the legal and political structures as well as in the daily lives of the commoners. The enclosures of land were a series of attacks, both by outright violence and by parliamentary acts, that forcibly separated the propertyless from the means of (re)production, destroyed their collective resources, social wealth and the networks pivotal for their subsistence and livelihood, while marginalizing and criminalizing non-market ways of reproducing life which were seen as potential threats to the newly established structures and relations of private property. The Charter, Guy Standing (2019, 160) writes, "lasted longer in the English statute books than any other piece of legislation, only being fully repealed after 754 years" in 1971, signalling the rise of the neoliberal era of Thatcherism in Britain.

As the anonymous poem at the beginning of this chapter eloquently expresses, fencing off common land was the necessary step for its commodification and the institutionalization of private property, signalling not only the outright physical violence of the process but also the 'enclosure by law'. The British Parliament had passed five thousand Acts by the nineteenth century, giving 95% of the land to the elite minority as private property, dispossessing the commoners of their means of production and subsistence, and institutionalizing their dependence on the market for livelihood[82]. In a long passage, Polanyi (2001, 34) articulates the enclosures as a "revolution of the rich against the poor" packaged in the hegemonic discourse of economic progress and 'improvement' beneficial for society as a whole[83]. The *longue-durée* persistence of the hegemonic liberal discourse with colonialist overtones still resonates in the recent joint call by the United Nations World Food Program (WFP), WTO, IMF and the World Bank, to the private sectors, mainly to corporate elites, philanthropists and celebrities to act against global hunger by technology transfers and innovation is indeed nothing short of remarkable.

[82] The enclosures further involved the subordination of the powers of the Crown under the rule of law, entailing the accumulation of the political power of the emerging capitalist classes and the separation of their interests from the Crown (Stephen Gill, 2008, 51), along with the protection of private property from expropriation by the Crown *and* the poor peasantry who were dispossessed of common lands and their livelihood in the transition to capitalism.

Patel and Moore (2018) also emphasize that after 1750, "a quarter of England's cultivated land, previously open fields and commons, was privatized'. This was facilitated by a vast amount of parliamentary legislation. Patel and Moore (2018) write that "in response to growing food rebellions and rising grain prices 'six times as many Enclosure Acts were passed between 1760 and 1790 as in the three decades prior".

[83] "An official document of 1607, prepared for the use of the Lords of the Realm, set out the problem of change in one powerful phrase: 'The poor man shall be satisfied in his end: Habitation; and the gentleman not hindered in his desire: Improvement.' This formula appears to take for granted the essence of purely economic progress, which is to achieve improvement at the price of social dislocation. But it also hints at the tragic necessity by which the poor clings to his hovel, doomed by the rich man's desire for a public improvement which profits him privately. (37) …Enclosures have appropriately been called a revolution of the rich against the poor. The lords and nobles were upsetting the social order, breaking down ancient law and custom, sometimes by means of violence, often by pressure and intimidation. They were literally robbing the poor of their share of the common, tearing down the houses which, by the hitherto unbreakable force of custom, the poor had long regarded as theirs and their heirs. The fabric of society was being disrupted; desolate villages and the ruins of human dwellings testified to the fierceness with which the revolution raged, endangering the defenses of the burdened soil into dust, harassing its people and turning them from decent husbandmen into a mob of beggars and thieves' (Polanyi 2001, 36-37).

Contemporary critical scholars agree that the strategies of the enclosure of the commons and the key processes of dispossession by no means only characterize the historical past of capitalism, but they continue with different strategies to the earlier enclosure of the 'social commons' for example involving privatization of public assets and provisions such as health, education, water supplies (Bakker and Gill 2003; Gill, Bakker and Wamsley 2021) or the neoliberal enclosure movement of what has been called the 'intangibles of the mind' (Boyle 2003; May 2003) 'Social commons' are identified in broad terms to reflect "community-based and collectivist alternatives to the capitalist enclosures or appropriation of social spending, taxation, and other entitlements associated with privatization or sale of such public provisions and revenues by the state…" (Gill, Bakker and Wamsley 2021, 251; Gill and Benatar 2019).

Erecting the neoliberal patent regime as a key global governance mechanism was a major step in the 'new enclosure of the social commons', which first underpinned the social and political construction of knowledge as a scarce, exclusive good to be privately owned. In this process, the private appropriation of collectively produced knowledge that used to be 'free as the air to common use' and a part of the public domain came to be a primary driver of capital accumulation. A good example is the private appropriation of the results of basic research conducted by public research centers and universities during the Green Revolution that formed a 'common knowledge basis' (Orsi et al., 2006, 329) for further research. Like the enclosure of land, which set in motion the capital accumulation necessary for the emergence of industrial capitalism, the enclosure, and the commodification of knowledge through the global institutionalization of a patent regime underpinned the knowledge economy and the unprecedented increase in the intangible assets in neoliberalism which "moved to the center of capitalism's expansionary logic" (May 2000, 42)

Institutions

Accumulation by Molecularization and Inventing 'Life' as An Object of Private Property

A universally binding, harmonious patent regime with a universal enforcement mechanism was a necessary political condition to invent 'life' as an object of private property and a source of surplus. Thus, the neoliberal patent regime institutionalized an unprecedented tapping into biological life-making processes and enabling the restructuring of the ecological-social relations of reproduction

to align with the reproduction of capital was of paramount importance for the neoliberal project, playing a constitutive role in its emergence and consolidation.

In contrast to the liberal and some critical accounts regarding the emergence of the neoliberal economic order and the development of technologies, the biotechnological revolution was by no means an outcome of the spirit of entrepreneurship or the development of productive forces without any political intervention or institutional arrangements. Rather, it involved the concerted efforts of the transnational elites, particularly led by the US, to construct a global legal-political institutional structure "designed to relocate economic production at the microbial and cellular level so that life becomes annexed within capitalist processes of accumulation" (Cooper 2008, 19).

By legally and technologically inventing the category of 'biological patents', the neoliberal patent regime taps into not only life-making processes, but it allows the private appropriation of 'organism's *principle of generatio*n without having to own the actual organism', thus the capacity to reproduce 'from which innumerable life forms can be generated' (Cooper 2008, 24). The epitome of this is the seed patents which facilitate the production of plants of market civilization. With the plants of market civilization, the provision of basic needs becomes unprecedentedly entangled in the dynamics of capital accumulation which is made possible by patents.

'Accumulation by dispossession' took a specific form and was institutionalized in the knowledge economy facilitated by the neoliberal patent regime. With breakthroughs in molecular biology following the coding of DNA, multinational corporations shifted attention to biotechnology (May and Sell 2006), and to erecting a neoliberal patent regime that enables a high and quick rate of return on capital. This is what scholars call the 'molecularization of life' (Braun 2007; Nally 2011) to refer to "encoding biological life at the microbial and cellular level". This, in turn, facilitated profound changes in the broader structures of social reproduction and human security facilitating new objects and categories of patentability that deepen and entrench the reach of private property.

'Molecularization of life' provided at least four new categories of patentability – namely, units of life including cells, micro-organisms, plants, animals, the molecules and other basic elements of these units such as proteins and amino acids, the information regarding the compilation of these molecules such as the DNA sequence and methods and processes associated with their

analysis and manipulation (Sell and May 2006, 156). Through these categories and the legal invention of the category of 'biological patents' through intellectual property law, the aspiration was to overcome, as it were, the social and ecological 'limits' for an unbounded economic growth. The development of biotechnology was perceived as one of the primary means by which the spheres of "biological reproduction and capital accumulation [were] moving closer together" (Cooper 2008, 4). Notably, the unprecedented development of biotechnology took place in the ambit of the prevalent rhetoric of the ecological 'limits'[84] articulated in the Report titled 'The Limits to Growth' (Cooper 2008, 16) as a part of the Club of Rome's (1972) Project of the Predicament of Mankind.

The reactions to the report varied. A follow-up report, *The Global 2000 Report,* commissioned by President Carter led to a series of legislations on environmental issues, while for the 'organic intellectuals' of the new right, the solution was "not to falter in the face of undeniable limits but rather to relocate beyond the limits of industrial production – in the new spaces opened up by molecular biology" Cooper (2008, 22). "The relocation of wealth in the creative sources of human [and nonhuman] biological life rather than the fruits of the land" (Cooper 2008, 5) facilitated unmatched opportunities and venues for expanded accumulation and economic growth based on perpetual innovation to counter, the Report claims, the era of 'irreversible decline' and the crisis of industrial capitalism.

Notably, the Report did not formulate the looming crisis narrowly in economistic terms. Instead, as its title suggests, it could be said to evoke what the critical political economists, in particular, the feminist IPE literature comprehends as an unfolding crisis of social-ecological reproduction and appears to rely on an implicit ontological denial of the ecological and social conditions and relations that make knowledge as capital possible in the first place. Instead of the

[84] The Report prepared (Meadows et al., 1972, 16) writes that 'Fordist manufacture had entered a period of irreversible decline". Arguably evoking the feminist historical materialist notion of an ecological-social reproduction crisis, the Report claims that what is at stake is not an economic crisis of growth or productivity but a new one that can't be framed in economic terms. Instead, it pertains to "the continuing reproduction of the earth's biosphere of hence the future of life on earth" (Meadows et al., 1972, 16).

The report developed models based on five main variables (population, industrial production, resources, food production and pollution), concluding that "a trajectory of endless economic growth, would deplete world's resources and pollute the biosphere in the next 100 years resulting in an uncontrollable collapse" https://www.ecologicaleconomicsforall.org/limits-to-growth.

conditions that economic growth necessarily relies on, they are perceived as its 'limits' that could and should be overcome. Cooper's (2008,16) words arguably support this observation: "[N]ot an economic crisis of growth or productivity but a new one that can't be framed in economic terms … [about] the 'continuing reproduction of the earth's biosphere of … the future of life on earth'".

The promise of biotechnology, or 'bioeconomy' was "a move from heavy industry to an innovation-based economy, in which the creativity of the human mind would replace the mass production of tangible commodities" (Cooper 2008, 17-18) and we can further add, would overcome, as it were, the social reproduction contradictions that feminist scholars have thoroughly shown to be one of the major nodes of contradiction and an axis of crisis in capitalist societies.

'Complexity' of the Neoliberal Patent Regime: 'Predatory Formation' and Locking in the Precarity of Subsistence

New constitutionalist frameworks of governance are difficult to change as they are insulated from democratic challenge and accountability, and they often operate as the institutional apparatus of technocratic governance which requires specialized knowledge accessible only to the elite technocracy. The complexity of the neoliberal patent regime must indeed be noted as a factor that reinforces its new constitutionalist logic. The juridical conundrum of the procedures to challenge, appeal, or revoke a patent, the numerous procedures required in the different jurisdictions to adopt the domestic laws to the requirements of the TRIPS, the knowledge of the in-and-outs of the legal framework exclusively available to the "masters of the legal code" (Pistor 2019) such as the patent experts, legal firms and the lawyers of the knowledge monopolies known as the 'biogopolies' (Drahos 2017) reinforce the institutional rigor of the neoliberal patent regime.

'Complexity' here goes beyond the bureaucratic difficulties associated with patenting. We can gain a deeper understanding of the significance of 'complexity' to advanced capitalism's logic and dynamics through Sassen's (2014) framework in *Expulsions: Brutality and Complexity in the Global Economy.* Using financial instruments and legal systems as examples, Sassen persuasively argues that financialized capitalism operates by expulsions made and conducted within 'complex assemblages' of institutions, systems, and techniques, which require specialized knowledge. These highly complex 'predatory formations' are characterized by an unmatched capacity to concentrate wealth and control over trade and land, entailing the expulsion of people and the flora and fauna

from life spaces, communities and the biosphere for the needs of high finance as, for instance, in the case of the land grabs by corporations to grow palm for biofuels.

Writing from a different vantage point, Braudel also stresses 'complexity' as a distinctive feature of capitalism, which for Braudel (1981) has always been global and monopolized by multinational corporations. Economic life involves complex processes and calculations unknown to ordinary people (Braudel 1981). Analogously, the neoliberal patent regime that deeply impacts the livelihood and the security of the poor populations operates at the levels of governance with complex interactions that are entirely foreign and out of reach for the populations under its sway. Rather than a shift of the level of governance to global, supranational institutions, the neoliberal patent regime appears to exhibit a centralizing trend of the national patent offices worldwide **(**Drahos 2010, 46-47) dominated by the US Patent and Trademark Office (USPTO), the European Patent Office (EPO), the Japanese Patent Office (JPO). Drahos underlines that

> [t]he network of patent offices is not a flat structure of equals …. it is the core that leads when it comes to developing a global system of patent administration …. Developing-country offices … are being encouraged to accept the standards and decisions of the core offices. Progressively an automation of decision-making taking place in which independent examination by many offices will be replaced by examination by a very few and mechanical acceptance by the many.[85]

Monsanto's intellectual property rights to Roundup Ready (RR) Soybean in Brazil and the royalty collection system they initiated triggered a massive legal dispute against Monsanto, "widely regarded as one of the most important cases worldwide involving intellectual property in agriculture", stands out as a paradigmatic case showing how the complexity of the patent regime could be put in use in the service of the corporations. In her ethnographic study of legal disputes in seed activism in India and Brazil, Peschard (2022) shows the high level of legal and scientific expertise required to challenge the status of Monsanto's Brazilian patents, documenting the corporate strategies that Monsanto's lawyer team developed, using the complexity of the patent system, to further muddy the waters. "No one knew which patents protected RR soybeans in Brazil

[85] This could be said to reflect Biscahie and Gill's (2022, 721) identification of a 'dialectic of centralization/decentralization' as a distinctive feature of new constitutionalism.

since the RR soybean was essentially a 'black box' in terms of patent information…Monsanto did nothing to clarify the situation" (Perschard 2022, 51). Monsanto did not disclose the patent number despite many requests from the court and once it did provide that information, it was found to belong to a patent entirely irrelevant to the case. A legal expert observed, this "must only have been introduced to the procedure to obscure the central legal matter of the lawsuit" (cited in Preschard 2022, 53).

This obscurity was partly lifted once the investigation deepened with consultations from the USPTO and the National Institute of Industrial Property, it was confirmed that the patent had already expired in Brazil in 2010, twenty years after it was filed in the US (Preschard 2022, 51). It showed that "while the original US patent contains eight claims, the corresponding Brazilian patent contains no fewer than 73 claims" (Preschard 2022, 52), which implies that Monsanto had sought expansion of the scope of the patent protection and perhaps also the difficulties involved in legally challenging this complex bundle of claims.

Moreover, this obscurity is underlined by Pistor (2019, 3) who eloquently writes that "the legal coding of capital [of which patents is a paradigmatic example] is an ingenious process without which the world would have never attained the level of wealth that exists today, yet the process itself has been largely hidden from view." This invisibility is largely linked to the complexity of the patent regime, which effectively insulates the reach and the primacy of capital from democratic accountability and the challenges of the poor populations and the countries of the Global South.

Seeds at the Nexus of Ecological-Social Reproduction and the Plants of Market Civilization

As discussed above, critical scholars broaden the ontology of global political economy by incorporating the processes of social reproduction as a substantial aspect of the capitalist economy which is typically ignored by mainstream approaches of international political economy as well as some critical ones. Such theoretical interventions allow a deeper and multifaceted understanding of the contradictions and crises of capitalism, and aptly situate life-producing processes, including the uneven production of bodies (their health, nutritional intake, etc.) and ecologies, the ecological and corporeal conditions and contradictions in the analyses of power, production and social reproduction. This significantly deepens the ontology of (feminist) historical materialist analyses,

facilitating an understanding of the interlocking relations between bodies, ecologies, communities and the social organization of different forms of labour (Foley 2019; Moore 2003, 2011).

Foley's analysis of the production of life, in particular the view that ecological and social reproduction are co-constitutive (Foley 2019, 546) is useful to highlight that the food regimes are central to the interlocking relationships between social and ecological reproduction, and how the conditions and the health of the ecological environment are inseparable from the health of the populations and communities. Integrating and building upon Bakker and Gill's social ontology and their Coxian political economy framework and Moore's conception of the 'production of life' through the integrated capacities of human and extra-human 'work/energy', Foley (2019) sheds light on the intimate relationships between the human and extra-human forms of labour and integrates the 'primary – ecological – production of the substance of life'[86] (Foley 2019) into the critical political framework of power, production and social reproduction. The "primary – ecological – production of the substance of life", Foley (2019, 555) writes, "captures the productive, reproductive and dynamic capacity of biophysical structures and forces as they interact and co-produce life through class, gender, property, and commodity relations, as well through different state-civil society and global governance interactions".

This critical perspective goes beyond a consequentialist analysis that delineates how the primary – ecological – production of the substance of life is transformed into commodities for the world markets and its social and ecological consequences[87], highlighting that capital accumulation relies on the primary – ecological – production that includes the typically gendered social reproductive labour and the similarly unpaid ecological production. It provides a lens to analyze how 'biophysical relations and ecological production interact with class, gender and racialized asymmetries to transform households, labour relations and communities" (Foley 2019, 555), suggesting a deeper understanding of the long-term capitalist contradictions, social and ecological transformations, and fundamentally the interrelated nature of the struggles that would otherwise appear disassociated from each other.

[86] Polanyi (2001, 3) writes that the final consequence of market liberalism is to ultimately "annihilate the human and natural substance of society", referring to the destruction of human and extra-human life as his surroundings.

[87] See Foley (2019) for a thorough analysis of the cod fisheries in Newfoundland.

Reorganizing the intimately linked relationships between ecological and social reproduction of human and extra-human life and the "primary – ecological – production of the substance of life" has been pivotal to the creation of agrarian frontiers facilitated by the biotechnologies reinforced by the private and public actors of neoliberal governance and the neoliberal patent regime. The "neoliberal model of innovation/knowledge production", whose paradigmatic example is agricultural biotechnologies, in particular, GM agriculture (Tyfield 2010) made possible by the patent regime to "the primary – ecological – production of the substance of life" (Foley 2019) and unprecedentedly involves the concerted efforts of the neoliberal social and political forces to transform it by the demands of capital accumulation.

A seed has a distinctive ontological status at the juncture of these intertwined relationships between the (re)production of new ecologies, bodies, communities and the different forms of labour and patterns of social reproduction that have been used in their cultivation throughout history. Thus, a seed embodies the work of extra-human nature as well as the often unpaid or underpaid labour of women, peasants, agricultural workers and their knowledge developed over thousands of years of subsistence and agricultural practices. The primordial and multifaceted ontology of a seed is situated at the intersections of the human and nonhuman production of life, production and reproduction, illustrating how ecological production and social reproduction are intertwined.

Indeed, agricultural life in all its forms begins, and ends, with seed. In Shiva's (2000, 80-81) words, 'it is the first link in the food chain'. Jack Kloppenburg's (1988, 201) definition in his groundbreaking analysis of the long historical trajectory of the political economy of plant biotechnology titled *First the Seed* is helpful:

> Now, a seed is, in essence, a pocket of genetic information, an envelope containing a DNA message. In that message are encoded the templates for the subsequent development of the mature plant. The content of the code crucially shapes the manner in which the growing plant responds to its environment. Insofar as biotechnology permits the scientific and detailed 'reprogramming' of the genetic code, *the seed, as embodied information, becomes the nexus of control over the determination and shape of the entire crop production process*. (emphasis in original)

The seed as the plant germplasm substantially embodies the potentiality and the actuality of the production of life, meaning that it is the embodiment of the capacity for producing life including, the work/energy as well as the social reproductive labour of families, small scale farmers and predominantly women's labour throughout generations who are "the subsistence farmers of the planet" (Federici 2018; Shiva 2016). This includes various forms of labour, including human and non-human nature's work, which has developed perhaps over a hundred thousand years. One might then claim that the seed is the pinnacle of what Foley theorizes as the "primary – ecological – production of the substance of life". Primary ecological production refers to the extra-human processes of nature to produce "biochemical production of organic matter and life in the biosphere', including, for instance, the 'transformation of sunlight energy into organic matter by terrestrial and ocean-based plants through processes of oxygenic photosynthesis" (2019, 546).

Furthermore, the cultivation of seed also illustrates the difficulty of maintaining a sharp separation between the work of non-human and human natures as well as their co-production in the "web of life" (Moore 2015). Indeed, patents on seeds are the poster child that perhaps best illustrates the multifaceted dynamics and the far-reaching implications of the neoliberal patent regime for human security As Nally (2011, 47; Roberts 2008, 25) stresses, the commodification of seeds "is one of the biggest transfers of wealth in human history", facilitated by the neoliberal patent regime.

Given our discussion in this section, it is possible to claim that patenting seeds is capital's attempt to overcome the 'biophysical limitations' encountered during the Green Revolution (Kloppenburg 1988) by controlling and transforming the primary-ecological production of the substance of life. The 'neoliberal utopia' that the social-ecological contradictions of capitalism could be overcome and 'the primary-ecological production of the substance of life' could be wholly aligned with the reproduction of capital and the imperatives of the market monopolized by multinational corporations, I suggest, underpins the 'corporate food regime' (McMichael 2009; 2013; Friedmann 2005).

The neoliberal patent regime, in particular patents on seeds and plant varieties, was a breakthrough in the creation of new agrarian frontiers and constituted a key difference between the Green Revolution and the BioRevolution. Currently, the reorganization of agriculture

according to the framework of free trade and biotechnology's development as a central technology for capitalist agriculture, are recognized as the two powerful dynamics that shape the 'corporate food regime' of neoliberalism (Pechlenar and Otero, 2008; Mascarenhas and Busch 2006 cited in Pechlenar and Otero, 2008). Thus the AOA and the TRIPS that institutionalized the neoliberal patent regime as a new constitutionalist global governance mechanism are also recognized as the dominating trends of the 'corporate food regime'.

Ideas

The neoliberal "framework of thought" and depoliticization

Ideas that underpin the neoliberal patent regime are effective historically specific means of governing human security and have significantly shaped the narratives of hunger, food security and the global food crises. As a part of the new constitutionalist governance of social reproduction, ideas and frameworks of thought have played a significant depoliticizing role. The political process of depoliticization has been a (neo)liberal governance strategy largely rooted in ideas, such as those of 'free trade' as the site of freedom, the market-based understanding of food security decoupled from national food sufficiency, developed and circulated by a broad range of actors including policy-makers, ruling and corporate elites and philanthropists, supranational institutions, the legal experts of intellectual property law. As depoliticizing forces of governance, ideas are particularly important in times of crises when what counts as acceptable governance frameworks, the limits of change, the terms of what counts as a legitimate contestation, hence the 'limits of the possible' are strongly challenged.

The process of depoliticization within the realm of subsistence is a historical process. "The apparatus of the Green Revolution," Patel (2013, 10) observes, "is an 'anti-politics machine'" (Ferguson 1990) which started with the Rockefeller Foundation's decision to initiate a program in Mexico after the revolution with the onset of the peasant uprisings and struggles over resource wealth. The program largely put an end to social and political struggles and contestation by introducing technocratic concerns and technological solutions to the problem of subsistence and agriculture, removing the governance of the resources from the mechanisms of democratic oversight (Patel 2013, 10).

The predominance of the discourse of intellectual property rights is a pivotal moment in the historical process of formulating global hunger and food crises as apolitical technical problems whose solutions are to be most effectively found in the development of life science industries with the promise that technology could "overcome hunger, pollution, the loss of biodiversity, and waste in general" (Cooper 2008, 11). As discussed earlier, the liberalization of agriculture was reinforced by the concerted efforts of transnational policy circles to implement a market-based view of food security that perceived national sufficiency programs and public policies as impediments to the dynamics of the free market that would allegedly solve global hunger without any recourse to the 'artificial' and 'unfree' political realm. This is indeed a part of the longer liberal process of ideologically and institutionally separating the 'economic' and the 'political' spheres of human activity that critical scholars have analyzed and thoroughly explored.

The ideas underpinning the neoliberal patent regime and seeking to institute it as a hegemonic governance mechanism of human security have further consolidated and reinforced the depoliticization process. As highlighted earlier in this thesis, even the term 'Green Revolution' was deliberately juxtaposed with the political revolutions such as the 'red revolution', stressing that social transformations beneficial to the entire society would come from agrarian changes based on technology rather than on political transformations (Harris 1972; Patel 2013).

The myth of 'autonomous invention' largely formed and legally legitimated through the landmark decisions of the US Supreme Court was pivotal both for restructuring the US economy beyond industrial production and also marked the early steps of implementing the neoliberal patent regime as a new constitutionalist mechanism of global governance. Notably, the historical lineage of the idea of `autonomous invention' predicated on the ontological denial of the public domain and commons discussed earlier could be traced to the liberal idea of the Promethean inventor of the nineteenth century explored in Chapter 2.

The Private Sector and the Corporate Philanthropist as the Promethean Inventor

The *longue-durée* persistence of the liberal idea of the individual subject who does not owe anything to society and the social wealth generated throughout generations could be said to have taken a critical twist with the emergence of the corporation as a legal entity on par with the abstract individual as the bearer of rights. In the neoliberal framework of thought, the idea of the

Promethean inventor reemerged as the corporate philanthropist who is celebrated as the heroic Promethean entrepreneur. "An entrepreneurial public-private alliance", Cooper (2008, 27) writes, was the result of the Bayh-Dole Act of 1980, giving way to "a new academic personage, the scientist entrepreneur, and a new form of public-private alliance, the joint-venture start-up, in which academics and venture capitalists come together to commercialize the results of public research". With the subsequent consolidation of the neoliberal patent regime as a global governance mechanism, the 'public' as a locomotive of innovation wholly dropped out of the picture, and the corporate philanthropist alone came to represent the Promethean mission of unbounded innovation.

The emergence of the discourse of intellectual property as a part of the neoliberal framework of thought added new dimensions of depoliticization, reinforcing the new constitutionalist logic of the neoliberal patent regime. A 'fetishized notion of innovation' (Rikap 2004) and the (neo)liberal view of unbounded capital accumulation motivated exclusively by intellectual property, are pivotal moments in the process of formulating global hunger and food crises as technical problems whose solutions are to be found in the development of life science industries. Nonetheless, the recent figures by no means support this promise. According to FAO, around 193 million people across fifty-three countries were acutely food insecure and in need of urgent support in 2021 (FAO, 2022a) whereas almost 3.1 billion people could not afford a healthy diet in 2020 (FAO, 2022b). Despite the outright failures of the neoliberal governance exemplified in the crisis of social reproduction dramatically expressed by ascending food insecurity and increased risk of global hunger unevenly located in the Global South, the persistence and the depoliticizing role of the dominant ideas should not pass unnoticed. This is not only the long-term persistence of the idea of the free market as the 'best decision maker', as it were, but also the perseverance of a fetishized view of innovation (Harvey 2003; Birch et al. 2010; Tyfield 2010) as a solution to be accomplished by corporate philanthropy and corporations who are predominantly major patent owners should be ignored.[88]

[88] Scholars emphasize that while leading corporations today are intellectual monopolies (Rikap) the link between innovation and growth has been weakening since the 1980s, 'at least in part – by the perpetuation of intellectual rentierism.' This is coupled with a growing share of corporate profits and concentration of wealth. 'Overall, the 0.001% of global largest corporations earn around one-third of all corporate profits (Wier & Reynolds, 2018). Intangible intensive corporations enjoy the highest profit rates (Covarrubias et al., 2020; Orhangazi, 2018)' (cited in Rikap 2021, 5).

While some countries took measures that diverted from the WTO framework including "food export restrictions, national food self-sufficiency policies, efforts to regulate agricultural derivatives, and the acquisition of farmland abroad"[89], the crisis does not seem to have led to a decline in the hegemonic market-based views. Paradoxically, the calls of the global policy elites and international institutions to address the crisis persisted on 'more free-trade for food security' under the WTO and "tackl[ing the systemic distortions in the international market for food" as the common sense solution, suggesting that insufficient international trade was the main reason of the crisis. By the same token, the G8's 2008 *Statement on Global Food Security* declared that "food security also requires a robust world market and trade system for food and agriculture" (cited in Margulis 2014, 333).

As a response to deepening crises, leading organizations of neoliberal governance such as the World Food Programme 2022 (WFP), WTO, World Bank and the IMF call for the private sector, corporate philanthropists and celebrity entrepreneurs to support technical and financial assistance, knowledge transfers and emergency food aid. Their joint statement (World Bank 2022) calls for emergency food supplies, financial aid and increased agricultural production. As Celik (2024, 4) notes, the statement urges governments "to keep trade open and avoid restrictive measures such as export bans on food and fertilizer that further exacerbate the suffering of the most vulnerable"'.

As noted, Peter Burnham (2001, 2014) states that depoliticization can take the specific form of 'international regimes' whereby governments align their economic governance to the demands of international systems such as central banks, and technocratic bodies. This tends to rid policy makers of their political responsibilities by deferring to global forces and blaming 'those external forces' for burgeoning social problems and global inequalities. The neoliberal patent regime is a depoliticizing force in this sense that seeks to 'normalize' the crisis-ridden nature of social reproduction and locks in the deepening precarity of human security as a permanent condition for the poor populations of the Global South through the allegedly neutral ideas

[89] Land acquisition, also known as 'land grabbing', came to be a prominent development agenda of the FAO, the Committee on Food Security (CFS), the World Bank, as well as the G8 and G20 summits, the European Commission, and the African Union's regional land policy framework (Margulis, 2014).

promoting more free trade, more technology, and more agricultural production. As such, burgeoning crises tend to be perceived as permanent phenomena that cannot prevented but can only be managed and administered.

Market-based view of food security and the Malthusian view of hunger

In his groundbreaking work *Poverty and Famines: An Essay on Entitlement and Deprivation* (Sen 1981, 1), Sen argues that starvation is neither a scientific question nor a technical matter of the shortage of supply that could be sufficiently addressed by the experts of the science of economics and agriculture. In his opening paragraph, he succinctly writes, "starvation is a characteristic of some people *not having* enough food to eat. It is not a characteristic of *there not being enough food to eat.*" Some of the worst famines in the world, Sen highlights, have occurred without a decline in food supply – a point stressed also by Davis (2017) who argued that the Indian famine of the late nineteenth century occurred in tandem with an annual increase of the grain export from India to Britain from three to ten million tons.

Sen persuasively concludes that starvation and famine occur as a function of "the *relationship* of people to food," which is fundamentally a political relationship that involves questions of law, power and property. Rather than the shortage of supply, starvation is about the structures of entitlement that condition people's ability 'to establish entitlement to enough food'. (Drèze and Sen, 1991; FAO, 2003). Emphasizing supply, availability, utilization and access as the different dimensions of food security, this new conception initiated a major shift in international food security policies away from the old approach of the bulk transfers of food supplies including food aid toward policies that target the challenges facing poor households and the factors preventing their access to food. Building on Sen's view, Orford (2015, 2) highlights the relatively less visible role of "the place of (international) law in constituting an economic system that benefits from people's dependence on food while growing numbers are undernourished", claiming that international law today stands between food availability and entitlement.

Sen's influential intervention was a major challenge to the hegemonic understandings that tend to depoliticize hunger, exemplified in the recent calls to eradicate global hunger noted above. These calls perceive food insecurity as a problem of supply that must be addressed by increasing agricultural production growth led by the private sector. We can depict here the persistence of the

Malthusian view of hunger that remained hegemonic throughout the 1950s and 1960s as we discussed in Chapter 3. There too, hunger was associated with population growth and the shortage of food supply to be addressed by technology experts and scientific philanthropy spearheaded by the Rockefeller Foundation. Similarly, the neoliberal patent regime and the fetishized view of innovation aspire to overcome the "Malthusian trap of the population/supply ratio" (Barca 2024).

Concluding reflections: social reproduction and human in/security

In line with the recent calls to reorient feminist analyses to survival and livelihood, my analysis highlights that the neoliberal regime of 'reproduction-cum-production' and its contradictions increasingly manifest through escalating insecurity in meeting basic subsistence needs. This phenomenon is most clearly illustrated by the fluctuating food prices in the world markets since the late 1990s, in particular, the 2008 global food crisis and the ongoing food insecurity and hunger that have plagued the poor populations, especially of the Global South with devastating impacts on the small farmers. Thus, the neoliberal governance of social reproduction tends to generate a precarious human security regime with prevalent food insecurity and food crises at its core. The precarity of human security not only entails the transformation to competitive state forms but also a profound departure from the postwar food regime's role, which was principally hegemonic, as opposed to being a catalyst for a global subsistence crisis that unfolds unevenly between the Global North and South.

The neoliberal fiction of unbounded economic growth that was presumed to trickle down to eliminate poverty and hunger together with technological innovations projected to mobilize radical agrarian transformations in the Global South to end food insecurity, instead exposed a pervasive yet uneven subsistence crisis unfolding in variegated ways and 'want amid plenty' comparable to that of the nineteenth century. Despite the UN development goals to eradicate poverty and hunger by 2030 (UNDP 2015), poverty has been 'rediscovered' in the last decades through the extension of food insecurity and the extension of basic health deficiencies over the boundaries of the developing world to the working and nonworking poor of the advanced capitalist countries. The prevalence of hunger and food insecurity, typically perceived as a phenomenon endemic to the Global South, among the poor in the advanced capitalist states and the unprecedented rise of foodbank use despite rising employment levels and economic growth has

been a source of perplexity for the corporate elites and policymakers[90].

As we noted earlier in this thesis, based on the 1994 UNDP formulation, Bakker and Gill (2003,11) defined human security of a population in terms of a 'collective sense of confidence about the future, premised on a condition where unnecessary dangers associated with everyday life and situations of crisis are minimized or eliminated'. Contemporary feminist scholars' insights on the social reproduction contradictions of capitalism and theorization of "historical regimes of "reproduction-cum-production" are useful in facilitating a more rigorous, historicized understanding of human (in)security as a component of distinct social reproduction. Food is central to all the distinct, yet interrelated aspects of human security and social reproduction as examined earlier: food as a basic need is at the juncture of the biological reproduction of the species, the reproduction of the labour force and communities, and the reproduction and provisioning of caring needs. In addition, as a basic need for survival, "all patterns of social reproduction [despite their variegations] involve food" (Bakker and Gill 2019, 517) at the fundamental material level of life-making. In this respect, Mezzadri et al. (2024), write, "food systems are constitutive of social reproduction". The reproduction 'of and through food' (Lambordozzi 2024) is at the heart of the transformations of social reproduction and the "complex, shifting and transforming agrarian lifeworlds" (Mezzadri et al., 2024).

Through this lens, food crises typically perceived as conjunctural price spikes and the volatile prices of the free market are in fact the expressions of the contradictions of capitalism and the crises-ridden nature of social reproduction in the neoliberal era. This point is underlined by Braudel (1992) who criticizes those studies that analyze the prevalent hunger and malnourishment in seventeenth-century Europe exclusively in terms of the spike in bread prices. Analogously, in the neoliberal era, the social and ecological contradictions of capitalist society increasingly find expression in the deep insecurity pertinent to the provision of basic means of subsistence, more

[90] In his two-week tour to the UK in 2018, the world's fifth-richest country, the United Nations special rapporteur for extreme poverty and human rights, Philip Alston has paid visits to the "food banks job centers, community charities and government ministries…. to assess why about a fifth of Britons remains in poverty despite rising employment levels, economic growth and pockets of enormous wealth" (New York Times. 2018, Nov. 13). The director of the Townsend Center for International Poverty Research at the University of Bristol did not hold back his astonishment: "When you think of the special rapporteurs on extreme poverty and human rights, you expect them to be visiting sub-Saharan Africa or Haiti. You don't expect them to be visiting the U.K." (New York Times. 2018, Nov. 13)

particularly in global food crises, which are, in effect, expressions of the underlying (organic) crisis of social reproduction rather than an imbalance between supply and demand (Celik 2024).

As discussed earlier, liberalization of agriculture and subjecting food and agricultural products to the free trade regime was pivotal for the neoliberal project. This major change from the nation-centered agriculture of the postwar involved subjecting agricultural trade to the discipline of free trade and transforming food into a commodity for international trade with important consequences in the agricultural and food sector, especially for small farmers in developing and the least developed countries. This involved the elimination of agricultural policies including subsidies, cheap credits and minimum price policies and protectionist trade measures.

These were accompanied by a wave of privatizations, including the state enterprises in the agricultural sector, such as farmers' cooperatives, and agricultural public banks to support farmers, which were privatized and restructured. For instance, in the case of Turkey, the state did not withdraw from the sector but rather introduced market-friendly policies and supported the subjection of the agriculture and food sectors to competitive global markets. The farmers and firms who produce for export and replace traditional crops with 'cash' crops were selectively rewarded with governmental support. Complementing these measures was the rampant commodification of land and natural resources, including the opening of, agricultural lands, forests, and meadows to the private sectors, including tourism and mining as contemporary examples of the enclosure of commons.

I further add that complementing the politics of land, the question of knowledge, its commodification and financialization in neoliberalism, is similarly important to orient the focus of feminist analyses to the substantive questions of survival and livelihoods, and for human security. Thus, analyzing the corporate food regime as a way to explore the ramifications of the neoliberal patent regime for social reproduction unravels that not only the commodification of land but also the commodification and the financialization of knowledge, is a key yet relatively underexamined factor in the neoliberal restructuring of social reproduction, particularly for the shifts in the food systems and agrarian transformations. Notably, in neoliberalism new agricultural frontiers and the corporate food regime are also increasingly shaped by innovations in biotechnology.

CHAPTER 7

CONCLUSION

This conclusion offers a concise reflection on the main arguments of the dissertation, highlights its contributions to the existing literature, and suggests potential areas for future research.

A central argument of this dissertation is that the neoliberal patent regime functions as a 'new constitutionalist' governance mechanism, which not only entrenches the socio-economic disparities between the North and the South, but also establishes the growing structural power of capital in the global governance of human security and the management of social-ecological contradictions. This generates a precarious human security regime for the poor, making it a 'permanent and inescapable reality', by locking in the neoliberal governance of human security and market-driven solutions to the deepening crises of social reproduction in neoliberalism as the as the common-sense crisis response.

With the advent of TRIPS, frontier states were, for the first time in history, able to pursue technological rents, armed with the WTO's arbitration and sanction mechanisms. These mechanisms could be used to set the lexicon and the normative contours of the debate and hold those who engaged in "unfair" practices in the global market accountable as soon as the WTO was established as a major institution, establishing the 'limits of possible change' in the global political economy. Under neoliberal governance, the provision of basic needs, as fundamental as health and food, is subsumed under a global trade regime underpinned by the primacy of economic concerns.

The unprecedented merging of human security and patent protection as new constitutionalist governance entails the silent ways in which conditions of survival come to be increasingly organized by governance strategies seeking to ensure the primacy of capital and its insulation from democratic policy-making and popular contestations from below. As elaborated in Chapter 6, the production of the plants of market civilization and the complexity of the neoliberal patent regime which requires developed expertise in legal and technical knowledge accessible only to the elite technocracy further entrenches financialized, depoliticized, profoundly uneven and precarious insecurity patterns as historical structures resistant to change.

The dissertation offered a novel synthesis of a historical materialist framework that incorporated Cox's methodology of historical structures, the feminist framework of social reproduction, insights from critical political economy and critical approaches to international law all situated in Braudel's long historical approach, which enabled the research to go beyond 'event-based' or 'conjunctural' approaches to critically analyze the unprecedented convergence of human security and patent regimes in neoliberalism. While the former would focus on discrete cases of pandemics and health emergencies, such as the COVID or the AIDS/HIV, or seed or pharmaceutical patents to explore the links between the global governance of social and ecological conditions, and intellectual property, a conjunctural lens would, for instance, tend to remain at the level of the conjunctural changes in market price. However, the historical approach of the dissertation elucidated the long-term patterns of continuity between these two regimes in the historical trajectory of capitalism. For instance, through this lens, the patent-based response to COVID-19 or the promotion of patented seeds as a panacea for food security as discussed in the Introduction can be perceived as the enduring legacy of the new constitutional logic of depoliticization.

This brings us to another major argument developed throughout the dissertation, namely that the ideational and institutional origins of the complex relationships between intellectual property and human security regimes today can be traced back to nineteenth-century liberal capitalism, showing that the contemporary problematization we started with is inherent to the dynamics of capitalism. Through an analysis of historical structures, the dissertation discerned that the ideas, frameworks of thought, norms, strategies and institutions that seek to legitimize intellectual property are despite immense changes of material capabilities, as exemplified in the development of biotechnology facilitated by the neoliberal patent regime.

As discussed in Chapter 3, despite the limited relevance of 'industrial patents' to the liberal governance of social reproduction in nineteenth century Britain as the first industrialized nation and the hegemon of the liberal world order, the normative frameworks, key concepts, and central issues in contemporary debates about the legitimacy of patents on food crops, seeds, and essential medicines are deeply intertwined with the historical foundations of nineteenth-century economic liberalism and colonial/imperial rule. These historical structures continue to influence the fundamental institutions and ideas that shape neoliberal patent governance, as well as the socioeconomic and health inequalities they perpetuate between the Global North and South.

The enduring idea of innovation which largely serves the depoliticization of subsistence today is rooted in the colonial discourse of improvement which was institutionalized and circulated through the nineteenth-century conference system (Murphy 1994) which set the foundations for the Paris Convention that is still a founding document of the neoliberal patent regime. The patent regime, since its beginnings, was a transnational elite project rather than an international legal regime or an agreement. The patent regime is a part of the political-juridical, new constitutionalist underpinnings of modern liberal economic governance. The pathbreaking legal invention of the nineteenth century, the 'corporation', is still a major locus of the structural power of capital that shapes human and nonhuman life today. The corporate philanthropist/entrepreneur of the current conjuncture is the 'Promethean inventor' of the nineteenth century in new clothes.

Notably, like the nineteenth-century natural rights discourse justification of intellectual property rights that presumes their uncontestable primacy, the neoliberal patent regime today seeks to ensure their protection through global institutions and ascertain, in a secularized fashion, the protection and the expansion of private property as a viable governance form of food security. Taking a long-term historical perspective reveals that the current situation is more similar to the nineteenth century than one might imagine.

The *longue durée* analysis of human security and patents through historical structures the dissertation found that the logic of depoliticization featuring a new constitutionalist governance form has prevailed in the liberal governance of social reproduction, particularly in the provision of basic needs. The *longue durée of* the governance of social reproduction, in particular human security, in capitalism has been shaped by the enduring logic of depoliticizing subsistence, which is enshrined today in neoliberalism with the prevalence of the patent regime as the new common sense of human security. The historical-critical analysis unsettled the dominant discourses often shared and woven together by various global actors, including states, ruling elites, a wide range of international organizations, corporations, lawyers, scientists and philanthropic global leaders and businessmen. Notably, they tend to tackle hunger, food insecurity and the precarity of subsistence primarily through technological investments and propose the naturalized presentation of intellectual property rights as the exclusive incentive for innovation and an uncontested pillar of global governance. This supports the point that feminist social reproduction approaches have long defended. Redrawing the ideological and institutional boundaries not only between economic and

political spheres but also between social reproduction, production and polity has been pivotal to liberal governance throughout the different eras of capitalism.

The dissertation contributes to the feminist social reproduction and political economy literature in various ways and suggests potential for future research. First, it provides a novel examination of how intellectual property regimes shape not only the organization of capital of production and capital accumulation but also how basic needs provision, forms of subsistence and human security regimes are organized historically. Through this perspective, the commodification and financialization of knowledge emerges as another question that *must* be central to the social reproduction framework along with the question of the commodification of land and labour. Pursuing the various aspects of knowledge production and their financialization as an issue of social reproduction based on the findings of this study is one of the projections for future study.

Secondly, by placing human security within the social reproduction framework, it enables situating the "unnecessary dangers associated with everyday life and situations of crisis" (UNDP 1994) which have largely become the rule for impoverished populations, in the persistent historical structures of capitalism and "historical regimes of social reproduction-cum-production**"** (Fraser 2017, 22). Additionally, suggesting that human insecurity is deeply rooted in the historical structures of capitalism, specifically in the (neo)liberal governance of social reproduction, which fails to provide the basic means of subsistence such as food, the dissertation proposes that issues around subsistence and survival should inform debates on the nature of social reproduction and its crises.

Finally, the dissertation also offers an integrated historical material perspective that can potentially facilitate further research and provoke novel questions about concrete cases of the commodification of food crops and seeds, such as the immense wealth transfer and dispossession that has been taking place, for instance in Turkey, through agribusiness and land grabs. The theoretical framework of this study would enable situating such practices as novel instances of new constitutionalism as they profoundly, and often silently, shape the lives of propertyless populations.

To conclude the dissertation, I will briefly draw attention to some methodological and conceptual limitations of the research. The first one concerns the level of analysis of the study and the long-run historical patterns in global governance it seeks to trace. While the macro-level

analysis of the research serves the purpose of highlighting the invisible ways in which global governance frameworks deeply impact the daily lives of millions of people, at times, this has inevitably led to prioritizing breadth over depth. The level of analysis has inevitably led to prioritizing a world-order level of analysis, which has forfeited insights that could be derived from more spatially grounded analysis in different countries concerning the variegated forms of social reproduction and its contradictions. What may have been sacrificed in terms of historical context and specificity in this study has hopefully been compensated for by its breadth and the potential it facilitates for future research.

Second, the research has predominantly focused on the "corporeal" (Rioux 2019) and social-ecological contradictions associated with the "primary ecological production of the substance of life" (Foley 2019). It is further essential to delve deeper into the gendered and racialized implications that intersect with these issues. Future studies in this area could significantly address the urgent calls from feminist scholars to prioritize survival and subsistence at the heart of the social reproduction framework. As a point of future research, this would involve analyzing the historical struggles around subsistence and food, and the extent to which they could be organized as counter-hegemonic forces challenging the status quo. This shift in focus could enhance our understanding of the complexities surrounding these critical topics and drive meaningful change.

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