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## The Economy of Nature as the Logic of Government: On the Birth of Political Bioeconomy<sup>1</sup>

### Keywords

liberal governmentality, political economy, liberalism, naturalism, Foucault, Darwin

### Abstract

The aim of this paper is to show that Foucault's genealogy of liberal governmentality necessitates reconsideration in light of the history of biology and its societal implications. In his lectures at the Collège de France in the late 1970s, Foucault argued that the natural growth of the market is what ultimately verifies or falsifies the excellence of liberal governmentality. Liberal governmentality recognizes the intimate correlation between the physical and social dimensions in order to adapt its political action to the natural processes of the market. It follows that liberal governmentality rests upon a certain kind of naturalism and the knowledge that defines this form of naturalism is political economy, which explicates both the foundations and the limits of governmental action in the name of the nature of the market. Foucault thus accords significant importance to the concept of nature in liberal governmentality. However, his genealogy is confined to an inquiry into the naturalism of classical political economy, without considering the economicism of the emerging biological sciences. To expand upon Foucault's genealogy, the present paper focuses on the influence of political economy in the development of the theory of evolution by natural selection. The locution "economy of nature" is introduced to denote the *discursive formation* that brings together the naturalism of classical political economy and the economicism of early evolutionary biology. This study contends that this construct played a critical role in shaping liberal governmentality.

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## Ekonomija narave kot logika vladanja: o rojstvu politične bioekonomije

### Ključne besede

liberalna vladnost, politična ekonomija, liberalizem, naturalizem, Foucault, Darwin

### Povzetek

Cilj pričujočega članka je pokazati, da je treba Foucaultovo genealogijo liberalne vladnosti ponovno preučiti v luči zgodovine biologije in njenih družbenih konsekvenc. V svojih predavanjih na Collège de France konec sedemdesetih let prejšnjega stoletja je Foucault trdil, da je naravna rast trga tista, ki nazadnje verificira ali ovrže odličnost liberalne vladnosti. Liberalna vladnost se zaveda intimne soodvisnosti med fizično in družbeno razsežnostjo, da bi svoje politično delovanje prilagodila naravnim procesom trga. Iz tega sledi, da liberalna vladnost temelji na določeni vrsti naturalizma, vednost, ki opredeljuje to obliko naturalizma, pa je politična ekonomija, ki v imenu narave trga pojasnjuje tako temelje kot meje vladnega delovanja. Foucault tako konceptu narave v liberalni vladnosti pripiše velik pomen. Vendar je njegova genealogija omejena na raziskavo naturalizma klasične politične ekonomije, ne da bi upoštevala ekonomizem porajajočih se bioloških znanosti. Da bi razširili Foucaultovo genealogijo, se pričujoči članek osredotoča na vpliv politične ekonomije na razvoj teorije evolucije z naravnim izborom. Vpeljemo izraz »ekonomija narave«, da bi označili *diskurzivno formacijo*, ki združuje naturalizem klasične politične ekonomije in ekonomizem zgodnje evolucijske biologije. Pričujoča raziskava namreč trdi, da je imel ta konstrukt ključno vlogo pri oblikovanju liberalne vladnosti.



In this paper, my objective is to demonstrate that the genealogy of liberal governmentality delineated by Foucault necessitates reinterpretation in light of the history of biology and its societal implications. One of the central themes that Foucault addresses in his lectures at the Collège de France in the late 1970s pertains to the relationship between liberal rationality and nature. According to Foucault, the natural growth of the market is what ultimately verifies or falsifies the excellence of liberal governmentality. If liberal governmentality justifies its authority through its knowledge of the natural processes of the market,

then it rests upon a certain kind of “naturalism.”<sup>2</sup> The knowledge that defines this form of naturalism is political economy, which explicates both the foundations and the limits of governmental action in the name of the natural functioning of the market. Foucault thus accords significant importance to the concept of nature in liberal governmentality, going so far as to suggest that “what we see appearing in the middle of the eighteenth century really is a naturalism much more than a liberalism.”<sup>3</sup> Nevertheless, he thinks it is appropriate to “employ the word liberalism inasmuch as freedom really is at the heart of this practice or of the problems it confronts.”<sup>4</sup>

It is noteworthy that, despite the significance Foucault places on the issue of nature, his genealogy is confined to an inquiry into the naturalism specific to classical political economy, without considering the economism of the emerging biological sciences. A similar genealogical approach appears to characterize the secondary literature on governmentality. The introduction of the theme of liberal government into Foucault’s later works has provided a fertile field of inquiry, yet its relation to the history of biology has received little attention.<sup>5</sup> In the present study, I shall propose that Foucault’s genealogy of liberal government necessitates reconsideration in light of the history of biology and its societal implications. Specifically, I will concentrate on the theory of evolution by natural selection, which played a pivotal role in the establishment of biology as a scientific discipline.

Extensive research has been conducted on the relationship between Darwin’s theory and political economy. Already Marx expressed to Engels his astonishment at Darwin’s depiction of nature as a marketplace driven by competition and a division of labour. However, it would be a gross oversimplification to suggest that the theory of evolution by natural selection can be reduced to a polit-

<sup>2</sup> Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977–78*, ed. Michel Senellart, trans. Graham Burchell (Basingstoke: Palgrave Macmillan, 2009); Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France, 1978–79*, ed. Michel Senellart, trans. Graham Burchell (Basingstoke: Palgrave Macmillan, 2008).

<sup>3</sup> Foucault, *Birth of Biopolitics*, 62.

<sup>4</sup> Foucault, 62.

<sup>5</sup> On the question of Darwinism in Foucault’s genealogy, see Mitchell Dean, *Governmentality: Power and Rule in Modern Society* (London: Sage Publications, 2010), 161–63; Nikolas Rose, *Powers of Freedom: Reframing Political Thought* (Cambridge: Cambridge University Press, 1999), 115–18.

ical bioeconomy. This was not even Marx's intention, as he acknowledged the fundamental value of Darwin's discovery for a materialistic conception of human beings. Advocating for the importance of this emerging scientific worldview—in which the Darwinian revolution plays a central role—does not, however, eliminate the possibility of exploring the connections that this worldview maintains with the socioeconomic ideas of the time.

The structure of this article is as follows. After a concise examination of Foucault's genealogy of liberal governmentality, I will draw upon existing literature on the history of scientific ideas to demonstrate the influence of economic concepts on Darwin's theory. This inquiry will primarily focus on the connection between Darwin and two key figures in the history of economics, namely Thomas Malthus and Adam Smith, elucidating how Darwin incorporated two fundamental economic concepts of his era into his theory. Specifically, Smith's division of labour, which constitutes the basis of his theory of divergence, and Malthus's population theory, which functions as the impetus for natural selection. Finally, I will focus on the societal implications of the theory of evolution by natural selection, devoting particular attention to laissez-faire Darwinism.

In light of this analysis, I will make a case for the reciprocal influence between the naturalism of classical political economy and the economism of early evolutionary biology. I shall use the term 'economy of nature' to refer to the discursive formation that gathers political economy and biology together, and will contend that it is indispensable in shaping liberal governmentality. Because this type of government acknowledges the close connection between nature and society, laissez-faire Darwinism and its effects on society are essential to understanding its origins and developments.

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### **"Governmental Naturalism"**

The aim of this section is to explicate Foucault's usage of the term "governmental naturalism" (*naturalisme gouvernemental*).<sup>6</sup> In his lectures at the Collège de France in the late 1970s, Foucault employs this expression within his genealogy of liberal government, specifically in the course focused on the emergence of biopolitics.

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<sup>6</sup> The term appears several times in Foucault's *The Birth of Biopolitics*.

Foucault's investigation of liberal government begins with the historical rupture between the modes of government of the medieval European empires and the model of *raison d'état* that emerged during early modernity. While the former had as their ultimate reference point a theological order, the latter referred to a secularized logic of the prosperity and security of states. This new logic of government is articulated on two distinct planes: the external, which concerns the relations between states, and the internal. On the external front, states tend to place a limit on the exercise of their power in order to ensure mutual coexistence and independence. A characteristic feature of this strategy is the subordination of the army to diplomacy. On the internal front, the logic of government is not equally constrained but enjoys almost unlimited power. In fact, while the capillarity of internal state power encounters legal limits, such as recourse to natural law or the reciprocity of the social contract, according to Foucault, these limits remain superficial and do not deeply affect the prerogatives of sovereign power.<sup>7</sup>

Continuing this brief analysis of the focal moments in the genealogy outlined by Foucault, it is important to recall that the eighteenth century witnessed a fundamental shift in the internal logic of government. The distinguishing feature of this paradigm shift is crucial to comprehending the significance of the concept of "governmental naturalism." The knowledge that underpinned this transformation was political economy, whose origins can be traced back to the Physiocrats. Unlike law, political economy did not develop outside the *raison d'état*, but rather in response to its objectives and with the aim of affirming them as effectively as possible. While law addresses power by posing questions of origin and legitimacy, political economy formulates a question of efficiency, developing what now appears to be the very "nature" of the art of government. The turn that occurred during the eighteenth century can be summarized by a maxim that Foucault cites repeatedly: *laissez-faire, passer, et aller*.<sup>8</sup> According to Foucault, this slogan, popularized by the Physiocrats but dating back to Boisguilbert and Gournay, means acting so that nature goes its way and follows its own course according to the laws, principles, and processes of nature itself. Hence, political economy asserts the necessary self-limitation of governmental practice

<sup>7</sup> Foucault, *Birth of Biopolitics*, 1–27. See also Foucault, *Security, Territory, Population*, 285–310.

<sup>8</sup> See, for instance, Foucault, *Security, Territory, Population*, 48; Foucault, *Birth of Biopolitics*, 20.

and in order to define such a limit the concept of nature becomes indispensable, because to the question “What basically must a government do?,” political economy’s answer is: “It must give way to everything due to natural mechanisms in both behavior and production.”<sup>9</sup>

As Catucci explains in his reading of Foucault, a cornerstone of the genealogy leading to the definition of the natural spontaneity of the economic dimension is the discussion that emerged in the eighteenth century concerning the definition of the “natural price” of grain.<sup>10</sup> Foucault employs this example to demonstrate how the market is considered to be the site where a truth is produced, which is determined by the law of supply and demand. It is the market that dictates to the government the rule of truth, and political economy indicates both where to search for it and how to administer it.<sup>11</sup> The government thus has increasingly less need to intervene with authoritarian prescriptions: its task consists in recognizing the truth and not obstructing it. The effects of political economy on the reason of state depend precisely on the fact of having introduced into the practice of government a regime of truth that has as its site of production the natural spontaneity of the market.

Always according to Catucci, Foucault “situates the emergence of liberalism during this historical period and interprets it as an attempt to further rationalize the development of the market-based governmental regime.”<sup>12</sup> Foucault claims that liberalism should be understood as a specific form of political reasoning that directs, manages, and imposes constraints on the apparatus of governmentality.<sup>13</sup> As a rational discourse that emerged from within the practice of government itself, the liberalism of the eighteenth century is grounded in two key ideas: the naturalness of market mechanisms and the importance of particular types of

<sup>9</sup> Foucault, *Birth of Biopolitics*, 67.

<sup>10</sup> Stefano Catucci, *Introduzione a Foucault*, (Bari: Laterza, 2010), 129. On the question of liberalism in Foucault, see also Graham Burchell, “Liberal Government and Techniques of the Self,” *Economy and Society* 22, no. 3 (1993), 267–82, <https://doi.org/10.1080/0308514930000018>; Jean-Yves Grenier and André Orléan, “Michel Foucault: The Political Economy and Liberalism,” *Annales. Histoire, Sciences Sociales* 62, no. 5 (2007): 1155–82; Thomas Lemke, *Foucault’s Analysis of Modern Governmentality: A Critique of Political Reason*, trans. Erik Butler (London: Verso, 2019).

<sup>11</sup> Foucault, *Birth of Biopolitics*, 27–47.

<sup>12</sup> Catucci, *Introduzione a Foucault*, 129.

<sup>13</sup> Foucault, *Birth of Biopolitics*, 20.

freedoms. It is this latter idea that led Foucault to label this form of governmentality liberalism. The freedom espoused by liberalism is not a generic form of freedom; rather, it involves specific kinds of freedom that must be fostered and maintained to sustain the “naturalness” of market mechanisms:

The freedom that the physiocrats and Adam Smith talk about is much more the spontaneity, the internal and intrinsic mechanics of economic processes than a juridical freedom of the individual recognized as such. [. . .] In actual fact, it is something like a governmental naturalism which emerges in the middle of the eighteenth century. And yet I think we can speak of liberalism. [. . .] I think we can employ the word liberalism inasmuch as freedom really is at the heart of this practice or of the problems it confronts.<sup>14</sup>

While liberal governments may employ legal and rational terminology such as rights, justice, and legitimacy, Foucault contends that the effectiveness of governmental practices is determined not by the consent of the legal subject but by the flourishing of the market. Hence, as per Foucault’s perspective, the market determines that good government is no longer simply government that functions according to justice.<sup>15</sup> Foucault’s interpretation of liberalism may appear quite unconventional due to his rejection of the normative problem of liberal justice as a central theoretical concern. Alan Hunt and Gary Wickham have challenged Foucault’s approach to the question of modern law by arguing that his interpretation of liberal governance “expels” law from the locus of power.<sup>16</sup> Foucault views law as a remnant of the pre-modern political horizon that has become instrumentally subordinated to modern discipline and governmentality with the decline of sovereign authority. However, other scholars, such as Jacopo Martire, have employed Foucault’s toolbox to offer an alternative interpretation of modern law as “a *sui generis* apparatus”<sup>17</sup> that establishes rules of formation concerning both the knowledge of the political truth of the subject and the production of said political truth. In contrast to the view that marginalizes its role in modernity, law can thus be understood, within a Foucauldian framework, as an

<sup>14</sup> Foucault, 61–62.

<sup>15</sup> Foucault, 32.

<sup>16</sup> Alan Hunt and Gary Wickham, *Foucault and Law: Towards a Sociology of Law as Governance* (London: Pluto Press, 1994).

<sup>17</sup> Jacopo Martire, *A Foucauldian Interpretation of Modern Law: From Sovereignty to Normalization and Beyond* (Edinburgh: Edinburgh University Press, 2019), 24.

apparatus of subjectivation that creates a complex dynamic of interaction with governmentality. A proper analysis of this question goes beyond the scope of the present article. For this reason, I limit myself to employing Foucault's interpretation of liberal governmentality as a heuristic for a specific historical inquiry into the relationship between economics and biology.

## Economy and Nature

Foucault demonstrates that, in the context of liberal governmentality, nature is viewed as a permanent counterpart to governmental practices. At the same time, to understand how naturalism impacted government practices, it does not seem sufficient to examine the conception of nature fostered by political economy. It is also crucial to investigate the influence of the economy on nineteenth-century biological sciences. Therefore, I intend to deepen the analysis of "governmental naturalism," exploring the interplay between political economy and the emerging biological sciences. Borrowing a popular phrase from the eighteenth and nineteenth centuries, I will refer to the process of the mutual naturalization of economics and the economization of nature as the "economy of nature".

Foucault is not the only one who argues that political economy has natural roots. Scholars such as Margaret Schabas have claimed that the conceptual foundations of classical economics were grounded in physical nature and make "a very strong case for the natural context of economic theory from the early eighteenth century through the mid-nineteenth."<sup>18</sup> More specifically, historian of economics, such as Schabas, have insisted that, prior to the mid-eighteenth century, economic scholars perceived the concepts discussed in their theories as belonging to the same realm of study as that of natural philosophers. For instance, "for Quesnay, wealth was a physical entity, grain for our nourishment [. . .]. For Smith, the best policy was to dismantle human designs and allow the 'natural progress of opulence.'"<sup>19</sup> The economic realm was, in short, considered to be part of the natural one.

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<sup>18</sup> Margaret Schabas, *The Natural Origins of Economics* (Chicago: University of Chicago Press, 2005), ix.

<sup>19</sup> Schabas, 3.



It is against this cultural background that the locution “economy of nature” should be interpreted. This expression gained popularity at the outset of the eighteenth century and subsequently engendered a multitude of variations. A plethora of works with similar titles were published in the mid-eighteenth century. Notably, François Quesnay released his well-known *Essai phisique sur l’oeconomie animale* in 1736, while Linnaeus presided over the dissertation *Oeconomia Naturae* in 1749. This phrase would also likely be recognizable to readers of Darwin, as he extensively utilized the notion throughout his texts. In 1833, Darwin resorted for the first time to this phrase,<sup>20</sup> and he repeatedly utilized it in his various works, such as *The Voyage of the Beagle*<sup>21</sup> and *Ornithological Notes*.<sup>22</sup> Both the term itself and its variant “natural economy” continued to be prominently featured in the *Origin* itself.<sup>23</sup>

Darwin’s intellectual formation was marked by the influence of earlier naturalists, such as Linnaeus. The concept of economy of nature, which Darwin later developed, can be traced back in part to this historical background. However, it is worth noting that Linnaeus’s theory, although influential, is limited by its pre-classical character, which manifests in a portrayal of a static economy marked by elements of competition and implicit exchange ratios, but with few of the mechanisms later associated with classical political economy. In contrast, Darwin’s theoretical framework, while sharing some of Linnaeus’s insights, exhibits greater affinity with classical political economy.<sup>24</sup> The similarities between Darwin’s theory and political economy did not go unnoticed. For instance, in 1862, Marx corresponded with Engels and expressed his amusement at Darwin’s ideas:

<sup>20</sup> Charles Darwin, *Charles Darwin’s Zoology Notes and Specimen Lists from H. M. S. Beagle*, ed. Richard Keynes (Cambridge: Cambridge University Press, 2000), 138.

<sup>21</sup> Charles Darwin, *The Voyage of the Beagle* (Durham: Duke University Press, 2015), 232, 523.

<sup>22</sup> Charles Darwin, “Darwin’s Ornithological Notes,” ed. Nora Barlow, *Bulletin of the British Museum (Natural History)* 2, no. 7 (1963): 220, 239.

<sup>23</sup> Charles Darwin, *On the Origin of Species by Means of Natural Selection: Or, the Preservation of Favoured Races in the Struggle for Life*, ed. J. W. Burrow (London: Penguin, 1985), 50, 61, 64, 79, 81, 120, 130, 146, 232, 237, 303, 305, 308, 315, 346.

<sup>24</sup> See also Schabas, *Natural Origins of Economics*.

It is remarkable how Darwin recognizes among beasts and plants his English society with its division of labour, competition, opening up of new markets, inventions, and the Malthusian “struggle for existence.”<sup>25</sup>

According to Marx’s interpretation, Darwin’s worldview was deeply influenced by the implicit model of nineteenth-century English market society, and he applied the concepts of laissez-faire political economy and Malthusianism to his view of nature and human populations.

This reading of Marx’s relation to Darwin was partially uncertain for many years, due to the widely held belief that Marx had intended to dedicate a volume or translation of *Capital* to Darwin, but was refused. Only in the mid-1970s did two researchers, Lewis Feuer and Margaret Fay, independently arrive at the same conclusion that the conventional account of the intended dedication was incorrect. They showed that the received view was a result of a longstanding misapprehension of the pertinent correspondence.<sup>26</sup> However, Marx’s reading of Darwin is not one-dimensional. In fact, he also recognized the fundamental significance of Darwin’s theory. In 1860, precisely one year prior to the aforementioned excerpt, Marx corresponded with Engels, expressing his recognition of its importance. In fact, Marx clearly admired and agreed with Darwin having provided a scientific explanation of the material origin of living beings in the course of natural history. The possibility of elaborating this naturalistic worldview was possible only against the background of a new theory of the evolution of organisms, which became the cornerstone of a new natural science: biology.

<sup>25</sup> Karl Marx, “Marx to Engels in Manchester, June 18, 1862,” in *Marx, Engels: Selected Correspondence*, ed. S. W. Ryazanskaya, trans. I. Lasker (Moscow: Progress Publishers, 1965), 120.

<sup>26</sup> In 1931, the Marx-Engels Institute in Moscow published a letter attributed to Darwin which had been uncovered among the papers of Karl Marx in the archives of the German Social Democratic Party in Berlin. Given the absence of the original letter to which Darwin was responding, it was deduced that Marx was the unnamed correspondent mentioned in Darwin’s letter. Moreover, a hypothesis was advanced regarding the nature of the book that Marx had intended to dedicate to Darwin, speculating that it might have been a volume or a translation of *Capital*. See Joel Barnes, “Revisiting the ‘Darwin–Marx correspondence’: Multiple Discovery and the Rhetoric of Priority,” *History of the Human Sciences* 35, no. 2 (April 2022): 29–54, <https://doi.org/10.1177/09526951211019226>.

Going back to the cultural milieu in which the Darwinian theory emerged, between the eighteenth and nineteenth centuries, the term “biology” was coined by several thinkers independently. In 1766, Michael Christoph Hanov defined the study of organic beings as *biologia* in the third volume of his *Philosophia Naturalis*. However, there is no “historical evidence that Hanov’s use of the term ‘biology’ is the source of a tradition nor that it had any influence on later uses of the term.”<sup>27</sup> In 1799, the English physician Thomas Beddoes used the term *biology* in his *Contributions to Physical and Medical Knowledge*. The German physiologist Karl Friedrich Burdach also resorted to the term in a footnote in his *Propeudeutik zum Studium der gesammten Heilkunde* in 1800. “Two years later it again appeared, apparently independently, and was given ample publicity in treatises”<sup>28</sup> by the German naturalist Gottfried Treviranus and the French zoologist Jean Baptiste de Lamarck. Although Darwin was not the originator of the term *biology*, his theory of natural selection solidified this scientific field as a distinct area of study. The fundamental value of the theory was acknowledged by many scientists of the time. Upon being presented with a preliminary copy of the first edition of the *Origin*, botanist Hewitt C. Watson corresponded with the author, deeming him “the greatest revolutionist in natural history of this century, if not of all centuries.”<sup>29</sup> While acknowledging Watson’s use of hyperbole and flattery, it is noteworthy that the revolutionary value of Darwin’s theory was immediately recognized and continues to be so. As the prominent American geneticist and evolutionary biologist Theodosius Dobzhansky stated, “Nothing in biology makes sense except in the light of evolution,” and it is clear that he meant Darwinian evolution.<sup>30</sup>

<sup>27</sup> Peter McLaughlin, “Naming Biology,” *Journal of the History of Biology* 35, no. 1 (March 2002): 3, <https://doi.org/10.1023/A:1014535811678>.

<sup>28</sup> William Coleman, *Biology in the Nineteenth Century: Problems of Form, Function, and Transformation* (Cambridge: Cambridge University Press, 1977), 1.

<sup>29</sup> In Sandra Herbert, “The Darwinian Revolution Revisited,” *Journal of the History of Biology* 38, no. 1 (March 2005): 51, <https://doi.org/10.1007/s10739-004-6509-y>.

<sup>30</sup> In this popular article, Dobzhansky writes that “the unity of life is no less remarkable than its diversity. [. . .] Seen in the light of evolution, biology is, perhaps, intellectually the most satisfying and inspiring science. Without that light it becomes a pile of sundry facts—some of them interesting or curious but making no meaningful picture as a whole. [. . .] It is remarkable that more than a century ago Darwin was able to discern so much evolution without having available to him the key facts discovered since.” See Theodosius Dobzhansky, “Nothing in Biology Makes Sense Except in the Light of Evolution,” *The American Biology Teacher* 35, no. 3 (1973): 127, 129, <https://doi.org/10.2307/4444260>.

While the field of biology has established itself as a distinct discipline within the natural sciences, the expression “economy of nature” fell out of favour within a century of its prevalent use. In fact, “in the entire print run of the journal *Nature* (beginning in 1869), while the economy of nature is mentioned in 0.7% of articles in 1874, its usage falls off linearly over the next five decades, and after around 1930, it appears to be mentioned only in historical contexts.”<sup>31</sup> In my investigation, the term “economy of nature” is not synonymous with the historical meaning of the term itself, but rather defines a critical field of inquiry into the modern relationship between economics and biology. The emphasis on Darwin and Darwinism is motivated by their pivotal role in the development of biological science. Although the term *economy of nature* has been progressively disregarded, the robust connection between biology and economics has persisted, as has been extensively documented by historians of science.

Since the late 1960s, there has been a notable approach to the history of evolutionary biology that has emphasized the interrelationships between ideas and their socio-economic context, as seen in the works of John Greene and Robert Young.<sup>32</sup> Adrian Desmond and James Moore’s renowned biography of Darwin also follows a similar approach by criticizing the tendency of historians to isolate ideas from their cultural context.<sup>33</sup> This approach has sparked various historiographical debates about the theory of evolution and most scholars now acknowledge the impact of political economists on Darwin’s ideas. Of course, it would be overly simplistic to attribute a direct cause-and-effect relationship between Darwin’s study of political economy and his formulation of the theory of evolution by natural selection. The process of weaving together the multiple threads that ultimately led to his theory was intricate and multifaceted. These considerations, however, do not preclude a critical inquiry into the socio-economic roots of his theory.

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<sup>31</sup> Charles H. Pence and Daniel G. Swaim, “The Economy of Nature: The Structure of Evolution in Linnaeus, Darwin, and the Modern Synthesis,” *European Journal for Philosophy of Science* 8 (2018): 435–54, <https://doi.org/10.1007/s13194-017-0194-0>.

<sup>32</sup> John C. Greene, “Darwin as a Social Evolutionist,” *Journal of the History of Biology* 10, no. 1 (March 1977): 1–27, <https://doi.org/10.1007/BF00126092>; Robert M. Young, “Malthus and the Evolutionists: The Common Context of Biological and Social Theory,” *Past and Present* 43, no. 1 (May 1969): 109–41, <https://doi.org/10.1093/past/43.1.109>.

<sup>33</sup> Adrian Desmond and James R. Moore, *Darwin* (London: Penguin, 1992).

## Darwin, Malthus, and Smith

In this section, I will draw upon existing literature on the history of scientific ideas to demonstrate the integration of crucial political economic concepts into Darwinian theory. My investigation will primarily concentrate on the links between Darwin and two prominent economists: Thomas Malthus and Adam Smith.

In October 1838, Darwin became acquainted with Thomas Malthus and his renowned work on population. During this period in England, the themes outlined in Malthus's essay were intricately intertwined with one of the prevalent socio-economic concerns of the time, namely the issue of poverty. In the early nineteenth century, Malthus became a vocal opponent of the Old Poor Law and advocated for its complete elimination. His extensive analysis of this matter is predominantly present in his *An Essay on the Principle of Population*, with special attention paid to the versions published in 1803 and beyond, which considerably expanded the original 1798 edition.<sup>34</sup> Malthus devoted several chapters exclusively to the Poor Law in this work and presented ideas that significantly influenced the viewpoints of his contemporaries.<sup>35</sup> Based on his population theory, Malthus reached the conclusion that practically any kind of government intervention would be incapable of permanently alleviating the state of impoverished individuals. This is because any actions that improve the living standards of the poor would inevitably lead to a surge in their number, which would quickly surpass the available food resources, thus exacerbating their misery even further.<sup>36</sup>

For Darwin, Malthusian thought represented a fundamental aspect of the development of his theory. However, over twenty years passed between his reading of

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<sup>34</sup> Thomas Malthus, *An Essay on the Principle of Population*, ed. G. Gilbert (Oxford: Oxford University Press, 2008).

<sup>35</sup> Mitchell Dean, *The Constitution of Poverty. Towards a Genealogy of Liberal Governance* (New York: Routledge, 1991).

<sup>36</sup> James Huzel, "Malthus, the Poor Law, and Population in Early Nineteenth-Century England," *The Economic History Review* 22, no. 3 (December 1969): 430–52, <https://doi.org/10.2307/2594120>; Nicholas Xenos, *Scarcity and Modernity* (New York: Routledge, 1990); Donald Winch, *Riches and Poverty: An Intellectual History of Political Economy in Britain, 1750–1834* (Cambridge: Cambridge University Press, 1996); Dean, *Constitution of Poverty*.

*An Essay on the Principle of Population* and the publication of the *Origin*. Thanks to his autobiography, we know Darwin's immediate reaction to that reading and the significant redefinition of the interpretative framework that ensued, which he presents as a sort of intuition:

In October 1838, that is, fifteen months after I had begun my systematic enquiry, I happened to read for amusement 'Malthus on Population', and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work.<sup>37</sup>

An essential concept in Malthus's population theory is the competition for scarce resources. He postulated that the means of subsistence increase at an arithmetic rate (1, 2, 3, 4, . . .) while population grows at a geometric rate (1, 2, 4, 8, . . .) which results in a much more rapid increase. It follows that, regardless of how quickly the means of production and subsistence may expand, human population grows at an even more rapid rate. Consequently, without measures taken to regulate its growth, it is inevitable that the resources required for the survival of the population will eventually become scarce. Prior to his encounter with Malthus's work, Darwin held the belief that living organisms produced just enough offspring to maintain population equilibrium. However, he later came to the realization that animal populations, much like human societies, tended to breed excessively, leading to a struggle for survival and the emergence of winners and losers. Darwin applied Malthus's reasoning to the natural realm, arguing that populations of wild animals reproduce beyond their means of subsistence, resulting in a struggle among organisms for the acquisition of resources. The stronger and better-adapted varieties survive and procreate, expanding at the expense of all others and gradually modifying the entire species. In the *Origin of Species*, Darwin himself provides the following interpretation of Malthus's theory:

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<sup>37</sup> Charles Darwin, *Autobiographies*, ed. Michael Neve and Sharon Messenger (London: Penguin, 2002), 128.

This is the doctrine of Malthus, applied to the whole animal and vegetable kingdoms. As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be naturally selected. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form.<sup>38</sup>

In order to demonstrate the significance of the struggle for existence in his theory of natural selection, Darwin devises various images that portray “nature” as a marketplace. One of the most well-known images is that of the “hundred thousand wedges,” which first appears in a passage on Malthus:

One may say there is a force like a hundred thousand wedges trying force [into] every kind of adapted structure into the gaps [of] in the œconomy of Nature, or rather forming gaps by thrusting out weaker ones. The final cause of all this wedgings, must be to sort out proper structure and adapt it to change. To do that, for form, which Malthus shows, is the final effect, (by means however of volition) of this populousness, on the energy of Man.<sup>39</sup>

The economy of nature is subject to minimal changes of various kinds, such as an increase in the components of a population in a geometric progression, a decrease in individuals susceptible to harsh weather conditions, an increase in certain predators, and so on, which may compromise a delicate balance. The metaphor of “wedges” effectively portrays a saturated system in which every new variety, organism, and species competes to thrive in the environment by exploiting resources and increasing in number. According to Darwin, all the “wedging” caused by population pressure would filter out all but the fittest organisms. The allusion to the “hundred thousand wedges” is also present in the first edition of the *Origin* but was omitted in subsequent editions.<sup>40</sup> Although the

<sup>38</sup> Darwin, *Origin of Species*, 7.

<sup>39</sup> Charles Darwin, *Charles Darwin's Notebooks, 1836–1844: Geology, Transmutation of Species, Metaphysical Inquiries*, ed. Paul H. Barrett et al. (Ithaca: Cornell University Press, 1987), 375–76; brackets in original.

<sup>40</sup> Darwin, *Origin of Species*, 119.

metaphor has been discarded, the analysis of the natural world through the lens of Malthusianism will demonstrate its importance in Darwin's "view of life":

Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of higher animals, directly follows. There is grandeur in this view of life with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed laws of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.<sup>41</sup>

However, the view of the economy of nature outlined in this passage began to take shape only when Darwin incorporated into his theory of evolution concepts with an economic character that seem to hark back to the thinking of Adam Smith. As Stephen J. Gould explains in his monumental work *The Structure of Evolutionary Theory*:

If Darwin required Malthus to grasp the central role of continuous and severe struggle for existence, then he needed the related school of Scottish economists—the *laissez-faire* theorists, centered on Adam Smith and the *Wealth of Nations* (first published in the auspicious revolutionary year of 1776)—to formulate the even more fundamental principle of natural selection itself.<sup>42</sup>

In general, the comparison between Adam Smith and Darwin is grounded in the observation that the latter explained the diversification of species as a result of a division of labour akin to Smith's concept of the division of labour in economic processes, positing that natural selection favours the survival of varieties that exhibit greater differentiation from the original form. However, historians have not reached a consensus regarding the extent to which Darwin derived his ideas from Smith. This is due to the fact that Darwin did not explicitly acknowledge Smith's contribution to his explanation of divergence, instead suggesting that his own concept was comparable to the "physiological division of labour" expounded by the French zoologist Milne-Edwards. Contrary to Darwin, Milne-Edwards attrib-

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<sup>41</sup> Darwin, 459–60.

<sup>42</sup> Stephen J. Gould, *The Structure of Evolutionary Theory* (Cambridge, MA: Harvard University Press, 2002), 122.



uted the development of his theory on the division of physiological labour to the works of political economists. In fact, he wrote that “the principle followed by nature in the perfectibility of organisms is the same as the one so well developed by modern economists, and in this works as in the products of industry one sees the immense advantages that result from the division of labour.”<sup>43</sup>

Among those who assert the influence of Smith on Darwin’s conception of nature are the authors of a significant biography dedicated to the English naturalist. According to Adrian Desmond and James R. Moore, Darwin’s concept of divergence should be related to what he observed both in the natural context and in the socioeconomic context of London at the time. In fact, “Darwin was a heavy investor in industry. His Wedgwood cousins were among the pioneers of factory organization” (Desmond and Moore 1992, 420). The production lines of Wedgwood porcelain industries were designed through a rigorous division of labour and this “mechanisation of the labour force, and its effect on output, was totally familiar to Darwin” (1992, 420). In the house library where he resided for over 40 years, there was an abundance of texts on economics, the production system, and manufacturing activity. In light of these and other biographical elements, Desmond and Moore conclude that: “Just as his Malthusian insight had come from population theory, so his mechanism for creating diversity looked like a blueprint for industrial progress” (1992, 420). After all, in the Victorian context, the division of labour was commonly associated with specialization and rapid production in a society that relied heavily on steam-powered technology to the point that, as Desmond and Moore remind their readers, it became “the catch-phrase of the age; Prince Albert called it the engine of civilization, thundering through every aspect ‘of science, industry and art.’”<sup>44</sup> This mechanization of labour thus held the potential for economic prosperity and growth, with the industrial metaphor extending even to the natural world:

just as a crowded metropolis like London could accommodate all manner of skilled trades, each working next to one another, yet without any direct compe-

<sup>43</sup> Henri Milne-Edwards, *Histoire naturelle des crustacées comprenant l’anatomie, la physiologie, et la classification de ces animaux*, vol. 1 (Paris: Librairie Encyclopedique de Roret, 1834), 6, quoted and translated in Sylvan S. Schweber, “Darwin and the Political Economists: Divergence of Character,” *Journal of the History of Biology* 13, no. 2 (September 1980): 254, <https://doi.org/10.1007/BF00125744>.

<sup>44</sup> Adrian Desmond and James R. Moore, *Darwin* (London: Penguin, 1992), 420, 421.

tion, so species escaped the pressure by finding unoccupied niches in Nature's marketplace.<sup>45</sup>

In the *Origin*, Darwin explicates that organisms engage in a competitive struggle to survive and reproduce. This "universal struggle for existence" leads to the emergence of a natural "division of labour," as different organisms excel at exploiting diverse resources. The constant tendency to diverge is a "profitable" one, as the more diverse organisms become the better equipped they are to take advantage of the various niches available in nature's "economy," which in turn allows them to thrive and increase in numbers.<sup>46</sup> On the contrary, the competition is most severe between allied forms, which "fill nearly the same place in the economy of nature."<sup>47</sup> Darwin's perspective on competition in nature appears to be heavily imbued with economicist language, and the echoes of Smith seem equally unmistakable. The comparison between economic competition, driving traders to explore new markets, and the "struggle for existence," among organisms opening new ecological niches, appears evident. Competition engenders a division of labour in the economy, which is mirrored in the biological realm, as a relatively small collection of biological species can gradually transform into a remarkable variety of specialists.

Moreover, according to Smith, individuals solely pursue their self-interest and exhibit no concern for the common good but, in doing so, each individual is "led by an invisible hand to promote an end which was no part of his intention,"<sup>48</sup> namely the maximization of the entire economy's productive capacity. Therefore, the action of Smith's invisible hand gives rise to a higher harmony resulting from a seemingly contrary process, i.e. the individual's pursuit of personal success. Stephen J. Gould has noticed the striking similarity between this process and Darwin's natural selection to the point of arguing that Darwin's theory is "the economy of Adam Smith transferred to nature."<sup>49</sup> In fact, as individual competition without restrictions generates the optimal social order in Smith's

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<sup>45</sup> Desmond and Moore, 420.

<sup>46</sup> Darwin, *Origin of Species*, 158.

<sup>47</sup> Darwin, 127.

<sup>48</sup> Adam Smith, *The Wealth of Nations: An Inquiry into the Nature and Causes of the Wealth of Nations*, ed. Edwin Cannan (Chicago: University of Chicago Press, 1977), 593.

<sup>49</sup> Stephen J. Gould, *Ever Since Darwin: Reflections in Natural History* (New York: W. W. Norton, 1977), 12.

world, likewise, the struggle among organisms leads to prosperity and harmony in nature. In both the natural and social realms, this constitutes the “general economy of any land.”<sup>50</sup> While it is imperative to recognize that the intricacy and legacy of Darwinian theory cannot and should not be reduced to an economic interpretation, it appears plausible to argue that the laissez-faire economy with Smith’s industrial world can be connected with the laissez-faire economy of Darwin’s natural world.

### Laissez-faire and Political Bioeconomy

In the preceding section we saw that Darwin incorporates in his theory two core economic concepts of his epoch: the division of labour and Malthusian population theory. Such considerations have led renowned historians of science to assert that “Darwinism is social.”<sup>51</sup> This assertion does not necessarily imply that Darwin himself was a social Darwinist who sought to apply his naturalistic perspective to human society. Moreover, definitions of social Darwinism are multifaceted, and a comprehensive analysis of them lies beyond the scope of this contribution.<sup>52</sup>

Despite the multiplicity of definitions, a work by the American historian Richard Hofstadter from 1955 remains a seminal text on this topic in many respects. *Social Darwinism in American Thought* not only highlights the pervasiveness of social Darwinism in American culture, but also demonstrates that the laissez-faire doctrine underpins this scientific-cultural tradition. The book portrays the extensive impact of Darwin’s theory on American social thought and the significant debate among intellectuals over the implications of evolutionary theory for social thought and political action. According to Hofstadter, social Darwinism exerted its greatest influence in the United States because

<sup>50</sup> Darwin, *Origin of Species*, 158.

<sup>51</sup> Robert M. Young, “Darwinism Is Social,” in *The Darwinian Heritage*, ed. David Kohn (Princeton: Princeton University Press, 1985), 609–38.

<sup>52</sup> Cf. Robert Bannister, *Social Darwinism: Science and Myth in Anglo-American Social Thought* (Philadelphia: Temple University Press, 1979); Mike Hawkins, *Social Darwinism in European and American Thought, 1860–1945: Nature as Model and Nature as Threat* (Cambridge: Cambridge University Press, 1997); Greta Jones, *Social Darwinism and English Thought: The Interaction between Biological and Social Theory* (Brighton: Harvester Press, 1980); Richard Weikart, “The Origins of Social Darwinism in Germany, 1859–1895,” *Journal of the History of Ideas* 54, no. 3 (July 1993): 469–88, <https://doi.org/10.2307/2710024>.

with its rapid expansion, its exploitative methods, its desperate competition, and its peremptory rejection of failure, *post-bellum* America was like a vast human caricature of the Darwinian struggle for existence and the survival of the fittest.<sup>53</sup>

In such a cultural milieu, proponents of social Darwinism, such as Herbert Spencer and William Graham Sumner, utilized the concept of the struggle for existence to justify both the negative and positive aspects of modern industrial society under *laissez-faire* principles. The ideological function of this form of social Darwinism was effectively fulfilled during the buoyant and expansive decades of the 1870s and 1880s, enabling the middle class to maintain its confidence in the potential for success in the struggle of life. Following the scholarship of Hofstadter, it is possible to characterize social Darwinism as a philosophical framework that seeks to rationalize or endorse the struggle for existence as an indispensable and innate phenomenon that contributes to biological and social progress. While confining our scope to this definition, it remains a controversy surrounding the origins of social Darwinism, with different scholars tending to credit Spencer with its inception rather than Darwin.<sup>54</sup>

There is no doubt that Spencer, not Darwin, coined the phrase “survival of the fittest.” Spencer introduced the term in an essay in 1852, approximately seven years before Darwin’s theory of evolution was published. Shortly after Darwin published the *Origin*, Spencer sent him a copy of his essay “A Theory of Population, Deduced from the General Law of Animal Fertility,” because, as he explained to a correspondent in February 1860, he wanted to show Darwin the extent to which his argument aligns with the one utilized in the conclusion of that essay.<sup>55</sup> Should we then speak of “social Spencerism”?<sup>56</sup> Yet, the evolutionary mechanism that Spencer had in mind when describing the evolution of life was Lamarckian and his idea of progress was rooted in this Lamarckian view of nature.<sup>57</sup> Given the

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<sup>53</sup> Richard Hofstadter, *Social Darwinism in American Thought* (Boston: Beacon Press, 1955), 44.

<sup>54</sup> See Bannister, *Social Darwinism: Science and Myth*.

<sup>55</sup> See David Duncan, *The Life and Letters of Herbert Spencer* (Cambridge: Cambridge University Press, 2014).

<sup>56</sup> John N. Burry, “Social Spencerism?,” *Nature* 313, no. 28 (February 1985): 732, <https://doi.org/10.1038/313732c0>.

<sup>57</sup> Richard Weikart, “Was Darwin or Spencer the Father of Laissez-Faire Social Darwinism?,” *Journal of Economic Behavior and Organization* 71, no. 1 (July 2009): 20–28, <https://doi.org/10.1016/j.jebo.2007.06.011>.

diversity of biological theories that promote the struggle for existence, it may be more appropriate to speak of laissez-faire biologism. In fact, long before he read Darwin, Spencer embraced the position that laissez-faire was necessary to ensure biological progress, and this perspective is linked to the themes that Spencer had already developed in his first work, published in 1851, *Social Statics*, and which was an attempt to infuse laissez-faire economics into biology. Whether it is more appropriate to speak of laissez-faire biologism or not, there is no doubt that various (and problematic) interpretations of Darwin's theory have played an important role in naturalizing a laissez-faire vision of society.

Despite the remaining issues under debate, it seems reasonable to establish that there was a significant intermingling between economics and biology in the eighteenth and nineteenth centuries, and that the emerging bioeconomy resulting from this reciprocal influence had a significant impact on the Western society of the time. Moreover, it is equally evident that Darwinian theory, along with its more or less faithful interpretations, played a central role in the definition of bioeconomy. In light of these considerations, it is surprising that critical studies on biopolitics have almost completely ignored the questions of bioeconomy and laissez-faire Darwinism; especially when we consider that Foucault started "studying liberalism as the general framework of biopolitics."<sup>58</sup> Following this genealogical line of inquiry, classical liberal governmentality can then be defined as a form of government based on the economy of nature and according to which market principles are part of the natural order. While Marx considered physiocrats to be the "true fathers of modern political economy [. . .] within the bourgeois horizon,"<sup>59</sup> scholars have argued that Foucault regarded them as the true progenitors of governmentality within a liberal framework.<sup>60</sup> Marx also recognized the economicist dimension of biological theory, at least a certain interpretation of it, which should not be reduced to Darwin's revolutionary idea. In the wake of this idea, I believe it is time to reconstruct Foucault's genealogy of liberalism in light of the history of biology and its societal implications. Indeed,

<sup>58</sup> Foucault, *Birth of Biopolitics*, 383.

<sup>59</sup> Karl Marx, "Economic Manuscript of 1861–63: A Contribution to the Critique of Political Economy, Third Chapter," trans. Ben Fowkes and Emile Burns, in *Karl Marx, Frederick Engels: Collected Works* (London: Lawrence and Wishart, 1975–2004), 30:352.

<sup>60</sup> I take this analogy from Ceyhan Gürkan, "The Critique of Classical Political Economy in Foucault's Analytics of Power and Government," *FLSF (Felsefe ve Sosyal Bilimler Dergisi)* 22 (Autumn 2016): 99–118.

only in this way will it be possible to grasp the naturalism grounding liberal governmentality and understand what I term the birth of political bioeconomy.

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