

# Towards the Soyacene: Narratives for an Environmental History of Soy in Latin America's Southern Cone.

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## ABSTRACT

This article provides an historical analysis of soybean farming in the most productive region of the world: Latin America's Southern Cone, with particular attention for Argentina, Uruguay, Paraguay and Brazil. Drawing from the premise that current narratives on soybean cultivation and commercialization have mostly focused on quantitative data of a global scope, this article discusses the potential of scholarly narratives informed by the critical tools of environmental history. Moreover, it proposes the adoption of a new term sublimating the multilayered history of soybeans in the Southern Cone: the Soyacene. This term attempts to shape an original narrative of soybean production in the age of the Great Acceleration, deconstructing misleading historical assumptions. Moreover, by critically discussing the impacts of soybean production, the Soyacene strives to produce a non-essentialist historical narrative in which the diverging interests of different social layers (e.g. governmental actors, private corporations, small farmers and indigenous populations) are addressed with contextualized critical tools.

**Keywords:** Soyacene, Historical Narratives, Environmental History, Southern Cone, Anthropocene, Great Acceleration.

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Over the last decades, the production volume and the geographical expansion of soybean [*Glycine Max (L.) Merr.*] have reached unprecedented proportions, becoming a global commodity. Originally domesticated in the Manchurian region, soybeans and soyfoods such as miso and tofu first reached Europe during the sixteenth century and later on the United States (1765), from which it was later disseminated to practically all regions across the globe.<sup>3</sup> In the Latin American Southern Cone, the first records of soybeans appear respectively in 1882 (Brazil), 1908 (Argentina), 1911 (Uruguay), 1921 (Paraguay), 1934 (Chile) and 1960 (Bolivia).<sup>4</sup> While over the last decades historical studies have begun to reconstruct the global expansion of soybeans, this phenomenon has also been investigated by an increasing amount of academic fields, addressing origins and consequences of this historical process.<sup>5</sup> Key debates in this area of study have included soybeans' territorial reach, the production volume, and the intricacies of technological innovations involved in its expansion, among other issues.<sup>6</sup> These crucial quantitative analyses provide a grim picture: soybeans are currently the third commodity in terms of global production, covering around 6% of the earth's surface.<sup>7</sup> Perhaps more alarming, their production is linked to the intensive use of agrochemicals, many of them already banned by the European Union, such as Paraquat or Glyphosate. Furthermore, in countries such as Brazil, genetically modified organisms (GMOs) account for 92% of the total production, with

<sup>3</sup> According to Shurtleff and Aoyagi, soyfoods arrived before soybeans in Europe (1597) and initially, "acquired the image of a high-class food". William Shurtleff and Akiko Aoyagi. "History of Soy in Europe". History of Soybeans and Soyfoods, 1100 B.C. to the 1980s. (Soyinfo Center, Lafayette, California, unpublished). Available at <https://www.soyinfocenter.com/HSS/europe1.php>. About the diffusion of soy in Northern America see Theodore Hymowitz and J. R. Harlan, "Introduction of soybean to North America by Samuel Bowen in 1765," *Economic Botany* 37, no. 4 (1983): 371. The authors attribute the introduction of soybean in the United States to Samuel Bowen in Savannah, Georgia. Early soybean cultivation was used to manufacture soy sauce and "vermicelli" (soybean noodles), later exported to England.

<sup>4</sup> William Shurtleff and Akiko Aoyagi, "History of soybean in South America," (Lafayette/CA: Soyinfo Center, 2009). All of these countries are included among the top ten global soybean producers, except for Chile. It is important to notice that most of soybeans cultivated in South America were used as pasture until the end of World War II. The Chinese revolution in 1949 – when some experts left the country – and the Cold War boosted soybean industrialization, introducing new uses for the grain.

<sup>5</sup> For an introductory debate about soybeans expansion, see first of all Ines Prodöhl's article on the historical significance of soy during the first half of the 20th Century, "Versatile and cheap: a global history of soy in the first half of the twentieth century," *Journal of Global History* 8, no. 3 (2013): 461–482. About the second half of the twentieth century, see Ernst Langthaler, "The soy paradox: the Western nutrition transition revisited 1950-2010," *Global Environment* 11, no. 1 (2018): 79-104. About the role of South America in contemporary soy production see Gustavo Oliveira and Susanna Hecht "Sacred groves, sacrifice zones and soy production: globalization, intensification and neo-nature in South America," *The Journal of Peasant Studies*, 43, no. 2 (2016): 251-285. Finally, about Southern Brazil, see Antônio Inácio Andrioli, *Biosoja versus Gensoja: eine studie über Technik und Familienlandwirtschaft im nordwestlichen Grenzgebiet des Bundeslandes Rio Grande do Sul (Brasilien)* (Frankfurt: Peter Lang, 2007).

<sup>6</sup> As an example, see the delectionist account of Bossen Gry, Cesilla Sofie Højrup Pedersen, "Palmeolie & Soja – bæredygtigt eller ej? Baggrundsviden for udvikling af Verdens Skoves position," Working Paper vol. 2. Aarhus/Copenhagen, 2018. Also see Nunes de Oliveira, Adilson and Antônio Ribas, *Dom Pedrito: Pioneira no cultivo de soja na América Latina* (Porto Alegre: Evangraf, 2010).

<sup>7</sup> See Jó Klanovicz, "História agroambiental global da soja: o caso da pesquisa agrícola no século XX," in *Anais do 5. Simpósio Internacional de História Ambiental e Migrações*, ed. Eunice Nodari et al (Florianópolis, 8-10 October 2018): 384-397. Available at <https://drive.google.com/file/d/1qh5M1Em7IliyWpgkJqDv3WHAI8CZWL08/view>.

the commercial monopoly of seeds in the hands of companies such as Monsanto and Syngenta.<sup>8</sup> Increasingly, current great soybean farmers hold immense political power – the Brazilian “king of soy” Blairo Maggi being a case in point. He was appointed as Brazil’s minister for agriculture between 2016 and 2018 and overwhelmingly catered to the interests of large producers related to the soy-beef industrial complex.<sup>9</sup> Finally, soybeans play a major role in environmental degradation. As pointed out by the European Commission in a 2013 study, “globally, the main crops that contributed directly or indirectly to deforestation include soybeans (19%), maize (11%), oil palm (8%), rice (6%), and sugarcane (5%)”.<sup>10</sup> In sum, bioregions such as the Southern Cone and other parts of the Global South are already in the midst of the soybean era, as this leguminous crop stretches along more than 50 million hectares, trespassing political jurisdictions and ecological frontiers.<sup>11</sup>

**Picture 1: Soy fields, stretching as far as the eye can see, in the municipal region of Santo Angelo, Rio Grande do Sul, Brazil. December, 2019.**



Photograph: Picture taken by Vitória Fank Spohr

<sup>8</sup> See journalist Hector Escobar’s article, “Após 20 anos, transgênico se torna regra no campo,” *O Estado de São Paulo*, September 2nd, 2018. Available at <https://ciencia.estadao.com.br/noticias/geral,apos-20-anos-transgenico-se-torna-regra-no-campo,70002483887>

<sup>9</sup> For further information see, “Forbes profile: #1605 Blairo Maggi.” *Forbes* (<https://www.forbes.com/profile/blairo-maggi/>).

<sup>10</sup> European Commission, “The impact of EU consumption on deforestation: Comprehensive analysis of the impact of EU consumption on deforestation,” *Technical Report* no. 63 (2013): 21. Available at <https://ec.europa.eu/environment/forests/pdf/1.%20Report%20analysis%20of%20impact.pdf>

<sup>11</sup> For further information see the data provided by non-profit organization GRAIN in May 2017: <https://www.grain.org/article/entries/5722-20-years-of-gm-soy-in-the-southern-cone-of-latin-america-20-reasons-for-a-definitive-ban>

In this article, we suggest that environmental history could offer potentially innovative critical narratives on the global expansion of soybean production. Over the last years, several researches related to environmental studies have been documenting and debating the consequences of expanding soybean cultivation from the perspective of deforestation and biodiversity loss. At the same time, investigative journalists have created narratives on the socio-environmental consequences of soybean expansion. Drawing from these perspectives, this article proposes a conceptual framework to help environmental historians broaden the investigative reach of soybean research, highlighting potential connections between continents, ecosystems, humans and nonhumans in this topical debate. Can the Latin America's Southern Cone be considered as the epicenter of a major global phenomenon in the context of the so-called Great Acceleration,<sup>12</sup> independently from the Global North's demand for commodities? What are the main characteristics of this expansion process in terms of new hierarchies, scientific knowledge and environmental changes? In this article, we attempt to draw the main premises of a potential research agenda addressing the environmental history of soybeans in the Southern Cone.<sup>13</sup> This means to first of all critically address the narratives of economic development, bio-technological innovation and environmental decline linked to the cultivation of soybeans in the Southern Cone region.

### **THE GREAT ENVIRONMENTAL NARRATIVES OF A SMALL GRAIN**

In 2018, a group of international scholars published a first attempt of overview the environmental history of Latin America over the last two centuries. The book explicitly sought to expand the reach of Latin American controversial history through a dialogue with the natural world.<sup>14</sup> As a discipline, environmental history has always

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<sup>12</sup> See John McNeill and Peter Engelke, *The Great Acceleration. An Environmental History of the Anthropocene since 1945* (Cambridge MA: Belknap Press of Harvard University Press, 2014).

<sup>13</sup> For an extensive bibliographical guide regarding the history of soybean in South America see Shurtleff and Aoyagi, *History of soybean in South America*.

<sup>14</sup> John Soluri, Claudia Leal, and José Augusto Pádua (ed.), *A Living Past Environmental Histories of Modern Latin America* (Oxford/New York: Berghahn Books, 2018). For a brief introduction to Latin American environmental history see Shawn William Miller, *An Environmental History of Latin America*. Cambridge: Cambridge University Press, 2007.

strived to enhance our understandings of the coexistence between humans and non-humans, proposing novel interpretations of historical processes, previously disregarded by prominent historiographic traditions, such as the *Annales*, English social history, or historicism. As recently declared by John McNeill, perhaps today the main challenge for environmental history lies in integrating insights and sources from scientific disciplines, rather than in analyzing traditional written sources.<sup>15</sup> The natural sciences are therefore as important to environmental historians as the social sciences to contemporary environmental historians. While certainly a landmark argument in order to shape future research agendas, McNeill's statement complements a longstanding discussion in the realm of environmental history. As William Cronon already pointed out in the early 1990s, environmental historians should strive to create "a theoretical vocabulary" integrating cultural and natural factors (both human and non-human entities) in their historical narratives:

A fundamental premise of my field is that human acts occur within a network of relationships, processes, and systems that are as ecological as they are cultural. To such basic historical categories as gender, class, and race, environmental historians would add a theoretical vocabulary in which plants, animals, soils, climates, and other nonhuman entities become the cofactors and codeterminantes of a history not just of people but of the earth itself. For scholars who share my perspective, the importance of the natural world, its objective effects on people, and the concrete ways people affect it in turn are not at issue; they are the very heart of our intellectual project. We therefore ally our historical work with that of our colleagues in the sciences, whose models, however imperfectly, try to approximate the mechanisms of nature.<sup>16</sup>

According to Cronon's argument, narratives are an essential literary tool in order to interpret concepts such as "past" and "nature", for historians striving to configure disoriented past events into causal sequences, while attributing them new meanings.<sup>17</sup> When environmental historians follow the narratives formulated by other scholars such as scientists, geographers or sociologists, they attempt to provide their

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<sup>15</sup> For further information see John McNeill's latest presidential address at the annual meeting of the American Historical Association. *Peak Document and the Future of Historical Research*. Abstract of the Presidential Address at the 2020 Annual Meeting of the American Historical Association, 8 November 2019. Available at <https://www.historians.org/publications-and-directories/perspectives-on-history/november-2019/abstract-of-the-presidential-address-at-the-2020-annual-meeting-peak-document-and-the-future-of-historical-research>.

<sup>16</sup> William Cronon, "A Place for Stories: Nature, History, and Narrative," *The Journal of American History* 78, no. 4 (1992): 1349.

<sup>17</sup> Cronon, "A place for Stories," 1349.

own interpretation of socio-ecological actors and processes already described by other researches. In this light, what are the potential contributions of environmental historians when it comes to the advance of soybean farming in the Southern Cone? In order to answer this question, it is first of all necessary to provide an example on how environmental history can critically discuss different soybeans narratives linked to concepts such as of progress and decline.

The early 2010s were a turning point for the increase of soybean monoculture, due to the political and economic instability that followed the global crisis of 2008. In particular, Paraguay became the model for political reforms towards a neoliberal economic paradigm centered on transgenic soybean farming. As the country's production increased by 180%, exacerbating issues of land distribution and health concerns, proponents of neoliberal economic reforms praised Paraguay for becoming an "island" of prosperity in the midst of the political chaos set in the continent.<sup>18</sup> As preached by an apologetic text published by the Brazilian newspaper Zero Hora, "[t]ax simplification, economic stability, competitive costs, and cheaper labor make the [Brazilian] neighbor country a fertile ground for Brazilian farmers and agribusinesses".<sup>19</sup> In the context of a new wave of investments by Brazilian businesspersons and conglomerates in Paraguay, soybeans stood out as a trustworthy cash crop, essential for economic and social progress, "leveraged by the adoption of new technologies."<sup>20</sup> Perhaps the epitome of this agrarian success were the so-called "brasiguaios," Brazilian farmers of European ancestry who were stimulated to migrate to Paraguay during the 1970s, after a political agreement between the two regimes.

This is just one the many examples linking soybeans to terms like progress and technology, along the line of purportedly heroic narratives of European immigration in the Southern Cone during the nineteenth century. Echoing the myth of self-made man

<sup>18</sup> According to recent estimates, over the last decade, soybean production has almost doubled in Paraguay, covering more than 80% of the country's overall arable lands. In this context of alleged agricultural triumph, about 2% of the population owns more than 85% of the overall farmed lands. See OXFAM International, *Paraguay: El país donde la soja mata*. Available at <https://www.oxfam.org/es/paraguay-el-pais-donde-la-soja-mata>.

<sup>19</sup> Following the break out of the Arab Spring, international corporate interests began to converge on Latin America. In this new geopolitical context, the overthrow of Paraguayan president Fernando Lugo in 2012 represented the initial experience of an alliance between the judiciary of the United States and South American nations with the aim to politically destabilize progressive or center-left governments. About the subject, see Jessé Souza, *A elite do atraso: da escravidão à Lava-Jato* (Rio de Janeiro: Leya, 2017). About the Zero Hora's article, see Joana Colussi, "A receita que transformou o Paraguai no principal destino de investidores na América do Sul," *Jornal Zero Hora*, April 12th, 2019. Available at <https://gauchazh.clicrbs.com.br/economia/campo-e-lavoura/noticia/2019/04/a-receita-que-transformou-o-paraguai-no-principal-destino-de-investidores-na-america-do-sul-cjud2qzr701cq01rtuqtkfoxh.html>.

<sup>20</sup> Joana Colussi, "A receita que transformou o Paraguai."

in the current historical context, soybeans are generally associated with the image of prosperity.<sup>21</sup> Over the last decades, governmental development plans in South America have appropriated these arguments and formulated powerful narratives of national prosperity based on monocultures, linking redistributive policies and “the expansion of the agricultural processing and service sector in new urban centers”.<sup>22</sup> An example is the questionable way in which self-proclaimed sustainable lifestyle models such as the Andean *buen vivir* have been translated into practice, as national economic agendas of countries such as Bolivia and Ecuador continue to invest on commodity markets, in stark contradiction to the paradigms that they committed to promote and protect.<sup>23</sup> Soybeans are also at the core of neo-Malthusian political narratives associated to prospective global demographic growth and issues of food security, leading to the idea that pursuing the “greater good” justifies environmental degradation, land grabbing and the displacement of indigenous populations.<sup>24</sup> The image of soybeans as a vehicle for environmental degradation and the diffusion of agrochemicals is widespread in specialized academic circles and in associations dedicated to environmental protection. As an example, an extensive report published by WWF documenting the expansion of Soybeans in Latin America, has declared that “soy production poses a threat to forests, savannahs and grasslands of global importance.” The report links soybean farming to deforestation and to the rise of cattle farming in both the Brazilian and Bolivian Amazon as well as in the Brazilian Cerrado, one of the most important water sources of the continent.<sup>25</sup> While the Cerrado holds 5% of the world’s biodiversity, soy cultivation now takes up around 7 per cent of the Cerrado biome’s total surface, an area the size of England. A similar process was observed for the Atlantic rainforest, where soy “has been a leading driver of deforestation,” in a biome that still holds more than 8,000 endemic species. Equally important, soy expansion is currently the biggest threat to other biodiversity hotspots such as the Gran Chaco plain, Bolivia’s Chiquitano forest, the Uruguayan Campos, the North American prairies and the

<sup>21</sup> For an interpretation of the southern subject as a self-made individual see Claiton Marcio da Silva “Between Fenix and Ceres: The Great Acceleration and the Agricultural Frontier in the Brazilian Cerrado,” *Varia Historia*, 34 no. 65 (2018): 409-444.

<sup>22</sup> Gustavo Oliveira and Susanna Hecht, “Sacred groves, sacrifice zones,” 252.

<sup>23</sup> Eduardo Gudynas, *Buen Vivir: Germinando alternativas al desarrollo* (Buenos Aires: ALAI, 2011). About soy see Ben McKay and Gonzalo Colque, “Bolivia’s soy complex: the development of ‘productive exclusion.’” *The Journal of Peasant Studies* 43, no. 2 (2016): 583-610.

<sup>24</sup> Gustavo Oliveira and Susanna Hecht, “Sacred groves, sacrifice zones,” 252.

<sup>25</sup> “About the expansion of soybean farming in the Cerrado see Sandro Dutra e Silva, “Challenging the Environmental History of the Cerrado: Science, Biodiversity and Politics on the Brazilian Agricultural Frontier”. *Historia Ambiental Latinoamericana Y Caribeña (HALAC)*, v. 10, no. 1 (2020): 82-116.

Argentinian Pampas.<sup>26</sup> Such a worrying ecological scenario has corresponded to the creation of declensionist narratives associating soybeans to the expropriation of indigenous peoples, deforestation, water pollution and to health issues – arguably, one of the most “inconvenient truths” of our times.<sup>27</sup> Concisely, environmental narratives of soybean production have centered their ethos in contrasting the abovementioned narratives of economic development, denouncing human rights violations and the ecological impacts of plantation economies.

To sum up, the various research agendas proposed by scholars from different fields have influenced the narrative script and the formulation of questions on the expansion of monocultures. Informed by these researches, environmental historians can potentially resume these discussions in historical terms and create narratives to soybeans monoculture, looking at the multiple historical drives at the core of these current socio-environmental issues. As argued by environmental historian Frank Uekötter, the paradox of monocultures is a combination of permanence and notorious instability.<sup>28</sup> The history of plantations is indeed permeated by the combination of notions of ascent, decline and permanence, “a global success story full of crushing defeats.”<sup>29</sup> If there appears to be a regular pattern in the construction of narratives based on how certain commodities have gained strength in global markets, environmental historians could look into the historical processes and political decisions that have led to the current economic bubble of soybean production. Moreover, by drawing comparisons with the historical trajectory of other monocultures, they could attempt to predict the future social and environmental scenarios of soybean monocultures in the Latin American Southern Cone.

In a similar vein, environmental historian Donald Worster has looked at the history of monocultures in relation to internal and external market demands, and how these became central to understand the expansion of specific grains and plants,

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<sup>26</sup> For further information see WWF, *The Growth of Soy: Impacts and Solutions* (Gland: WWF International, 2014): 5-6. Available at [https://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf\\_soy\\_report\\_final\\_feb\\_4\\_2014.pdf](https://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_soy_report_final_feb_4_2014.pdf).

<sup>27</sup> A very important example is provided by Barbara Willaarts, Insa Flachsbarth, and Alberto Garrido, “Land and water requirements for soybean cultivation in Brazil: environmental consequences of food production and trade,” *Conference Paper. XIV the IWRA World Water Congress*, Porto de Galinhas, Brazil, 2011.

<sup>28</sup> Frank Uekötter, “Introduction,” in *Comparing Apples, Oranges, and Cotton: Environmental Histories of the Global Plantation*, Frank Uekötter (Chicago: The University of Chicago Press, 2014): 7-26.

<sup>29</sup> Frank Uekötter, “Introduction,” 8.



disregarding the breadth of biodiversity in farming systems.<sup>30</sup> Remarkably, the history of soybeans reveals strikingly similar geopolitical dynamics. An example is constituted by the trade agreements between Denmark and Argentina in the last decades, leading to the expansion of the area of soybean cultivation in the Southern Cone and to expansion of Denmark's extra-national territorial jurisdictions.<sup>31</sup> A similar neo-imperialist strategy had already been adopted as part of the technical-trade agreements between Brazil and Japan in the 1970s, where soybeans became one of the key links for the organization of a series of institutions and programs.<sup>32</sup> Just as important as this, as military dictatorships plagued South America between the 1960s and 1980s, political agreements between Brazil and Paraguay led to a significant invasion of Brazilian farmers into *Guarani* indigenous lands. Such a *modus operandi* based on government-backed land grabbing and the displacement of local populations constitutes the basic formula of agribusiness in the Southern Cone. This is normally associated to the adoption of highly invasive biotechnologies, such transgenic seeds and agrochemicals, with total disregard for their environmental consequences. The local impacts of these policies resulting from global demands are an important subject for an environmental history of soybeans looking at Southern American monocultures, their transnational relations and their global environmental impacts. After all, producers, governments, financial actors and entrepreneurs create new demands or reinforce existing ones. They generate internal dynamics consisting of agreements between multinational companies that sell seeds, farmers producing soybeans, industrialists who benefit from the processing and transporters who run the production abroad.

Looking at the historical drives of these complex interrelations provides a fertile ground also to understand new trends in emerging soybean-related markets. As an example, the production soybean *Glycine Max* is associated to an unimaginable numbers of products that are consumed daily by an untold proportion of the world's population. This versatility, combined with the seed relatively low production cost, are among the main factors that propelled the diffusion of soybeans during the first half of

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<sup>30</sup> See Donald Worster, *Nature's Economy: A History of Ecological Ideas* (Cambridge: Cambridge University Press, 1994).

<sup>31</sup> Gry Bossen and Cesilla Sofie Højrup Pedersen, "Palmeolie & Soja – bæredygtigt eller ej? Baggrundsviden for udvikling af Verdens Skoves position," *Working Paper* vol. 2. Aarhus & Copenhagen. 2018.

<sup>32</sup> See Jó Klanovicz, "História agroambiental global da soja" and Claiton Marcio da Silva, "Between Fenix and Ceres".

the twentieth century, as emphasized by Ines Prodöl.<sup>33</sup> Besides, as Oliveira and Hetch remind us, given its ability to shift sourcing and attend multiple markets, international companies have turned soy into one of the world's leading "flex crops," operating at the intersection between human food-chains, animal feed, bio-fuels and several other industrial inputs.<sup>34</sup> Mentioning this process as one of "tropical high modernist neo-nature", the authors adapted the concept of "high modernism" disseminated by James Scott, in order to demonstrate the centralized nature of soybean production processes.<sup>35</sup> On the other hand, as recalled by Frank Uekötter, several studies juggle with the idea of high modernism, but this concept remains unspecified in terms of time, space, and context.<sup>36</sup> Building upon these concepts, environmental historians interested on the study of monocultures such as soybeans could shape narratives in which the conceptual frameworks proposed by Oliveira/Hetch and Uekötter could converge. This could lead to historical narratives critically addressing the intersection between states, multinational agro-businesses, local producers and rural communities, addressing the issues of time, space and context with a balanced perspective.

While unpacking narratives of economic growth and environmental degradation with new methodological propositions, a second potentially fruitful task for environmental historians researching the rise of soybeans plantation in the Southern Cone could consist in critically analyzing the terms utilized so far in order to describe the geography of soybean production. As it will be observed in the next paragraph, terms conventionally adopted by agribusinesses, such as "soyland," or "United Republic of Soy," can be deconstructed by historical narratives as concept linked to misleading social and environmental stereotypes associated to the region.

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<sup>33</sup> Ines Prodöl "Versatile and cheap," 461.

<sup>34</sup> Gustavo Oliveira and Susanna Hecht, "Sacred groves, sacrifice zones," 257.

<sup>35</sup> In general, the idea of high modernism is referred to ideas of social engineering that rose to prominence during the second half of the nineteenth century, with the aim to rationally order different environments and their populations. As demonstrated by James Scott, along the twentieth century, this premises informed the division of the world between the capitalist and the socialist blocks, as each one attempted to find original solutions to improve living conditions. However, mainly due to their centralized and authoritarian characteristics, these large schemes produced several flaws. For further information see, James Scott, *Seeing Like a State. How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

<sup>36</sup> Uekötter, "Introduction," 26.

**SOYLAND, OR THE UNITED REPUBLIC OF SOYBEANS: CHALLENGING NARRATIVES**

In 2016, five of the world's ten largest soy producers were located in the Southern Cone: Brazil, Argentina, Paraguay, Uruguay and Bolivia. Together, these countries account for over 53% of global soy output, and approximately 58% of the share of global exports. Impressively, these countries cultivated soybeans over a massive area of approximately 57.05 million hectares, which keeps increasing every year.<sup>37</sup> In local terms, soybean production chains have created a very strong economic dependence in certain regions and municipalities. For instance, in the Brazilian state of Santa Catarina, historically based on family agriculture, the so-called modern soybean plantations accounted in 2017 for 20% of the state exportations.<sup>38</sup> One of its western municipalities, Abelardo Luz, has been renown since 2014 as the “national soybean-seed capital,” reaching a total of 42.000 hectares of soybean plantation in 2018. Although Abelardo Luz only ranks as Brazil's 245th largest soy-producing municipality, soybean cultivation accounts for a whopping 89% of its territory.<sup>39</sup> In Paraguay, the first generations of *Brasiguaios* helped in the production of 1 million tons of soybeans in 1989 – the same year in which dictator Alfredo Stroessner was deposed. In 2008, Paraguay cultivated around 6 million tons, covering more than 3 million hectares.<sup>40</sup> Currently, this number has reached 10.2 million tons.<sup>41</sup> In an Argentinian *pampa* region, soybeans accounted for 89% of the area devoted to agriculture between 2013 and 2014.<sup>42</sup> Similar agricultural patterns can be observed in Uruguay and Bolivia, where soy production is promptly expanding. In Uruguay, soybean plantations have reached 1 million ha since 2000, replacing the original *campos* (fields).<sup>43</sup> In Bolivia, as maintained by McKay and Colque, “a significant transition is underway“, where “both domestic and foreign capital

<sup>37</sup> Gustavo Oliveira and Susanna Hecht, “Sacred groves, sacrifice zones,” 258.

<sup>38</sup> IBGE, “Levantamento Sistemático da Produção Agrícola Estatística da Produção Agrícola,” April 2018. Available at [https://biblioteca.ibge.gov.br/visualizacao/periodicos/2415/epaq\\_2018\\_abr.pdf](https://biblioteca.ibge.gov.br/visualizacao/periodicos/2415/epaq_2018_abr.pdf).

<sup>39</sup> See IBGE, “Produção Agrícola - Lavoura Temporária,” Abelardo Luz, Santa Catarina, Brazil, 2019. Available at <https://cidades.ibge.gov.br/brasil/sc/abelardo-luz/pesquisa/14/10193?tipo=ranking>.

<sup>40</sup> Valmir Antônio Muraro, “Mundo ‘novo’ sem fronteira: brasileiros, sojeiros e agronegócios em território paraguaio,” in *Colonização, conflitos e convivências nas fronteiras do Brasil, da Argentina e do Paraguai*, ed. Valmir Muraro and Delmir José Valentini (Chapecó: UFFS, 2015): 127.

<sup>41</sup> Joana Colussi “A receita que transformou o Paraguai.”

<sup>42</sup> Diana Victoria González, Norma Elba Sánchez, Liliana Ester Tamagno, “Tensiones y resistencias al modelo agrícola industrial en Pergamino, provincia de Buenos Aires, Argentina,” *Estudios Rurales*, 8, no. 16 (2018): 83.

<sup>43</sup> WWF, *The Growth of Soy*, 56.

are monopolizing commercial agriculture and leading a highly mechanized, capital-intensive production model which has considerably diminished the need for labor.”<sup>44</sup>

While certainly astounding in their numbers, these statistics should not be solely considered as a perfect reflection of the “reality” of soy production. Statistics, just like visual images and discourses, have indeed the potential to convey different images of reality and temporality.<sup>45</sup> As far as the soybean example is concerned, the unquestioning adoption of images, terms and statistic can lead to conceptual mistakes that can in turn play along neo-imperial dynamics of disempowerment and decentralization. Yet, because of the impressive data on soybean production available today, researchers are challenged to unpack terms utilized by the media or by multinationals as a means of critically exposing soybean-related controversies. One of the most analyzed images is the “United Republic of Soybean”, a term utilized by the renowned agribusiness corporation Syngenta since 2004.<sup>46</sup> Scholars have referred with particular criticism at this image, relying on the rather blunt assumption that international corporations have built a true nation whose main ethos is constituted by soybeans.<sup>47</sup> A Spanish statement complementing that of Syngenta is that, “soy knows no frontiers. Neither does Centinela’s information.” This motto is adopted to advertize a pest control program, which has more recently become a Smartphone application that enables the monitoring of plantation sites through remote sensing technologies.<sup>48</sup> For researchers, this type of advertizing clearly displays the growing power of multinational corporations in the political reorganization of nation-states – a neo-imperial nuance. If the agribusiness boastfully advocates the adoption of the term

<sup>44</sup> McKay and Colque, “Bolivia's soy complex,” 2.

<sup>45</sup> Isabel Lustosa, “Conversa com Roger Chartier,” *Trópico*, 11 October 2006. Available at [http://www.casaruiarbarbosa.gov.br/dados/DOC/artigos/k-n/FCRB\\_IsabellLustosa\\_Conversa\\_RogerChartier.pdf](http://www.casaruiarbarbosa.gov.br/dados/DOC/artigos/k-n/FCRB_IsabellLustosa_Conversa_RogerChartier.pdf). For a more comprehensive explanation, see Roger Chartier's classic *Cultural History: Between Practices and Representations* (Cambridge: Polity in association with Blackwell, 1988).

<sup>46</sup> By 2003 the corporation Syngenta advertized its services linked to soybean production in the Argentinean newspapers *Clarín* and *La Nación*, renaming soy producing countries of the Latin American Southern Cone (Brazil, Argentina, Uruguay, Paraguay and Bolivia) with the neo-colonial term “United Republic of Soy.” See GRAIN, “La República Unida de la Soja recargada,” 12 June 2013. Available at <https://www.grain.org/es/article/4739-la-republica-unida-de-la-soja-recargada>. Environmental historian Stuart McCook has pointed out how Syngenta's advertisement is connected to the expansion of modernist agriculture, characterized by “the use of genetically modified organisms, agricultural chemicals, and large-scale landscape change.” See Stuart McCook, “Prodigality and Sustainability. The Environmental Sciences and the Quest for Development,” in *A Living Past Environmental Histories of Modern Latin America*, ed. John Soluri, Claudia Leal, and José Augusto Pádua (Oxford/New York: Berghahn Books, 2018): 240.

<sup>47</sup> Katarzyna Olga Beilin and Sainath Suryanarayanan, “The war between Amaranth and Soy: Interspecies Resistance to Transgenic Soy Agriculture in Argentina,” *Environmental Humanities* 9, no. 2 (2017): 204-229. See also Gustavo Oliveira and Susanna Hecht, “Sacred groves, sacrifice zones” and Claiton Marcio da Silva, “Between Fenix and Ceres.”

<sup>48</sup> “La soja no conoce fronteras. La información de Centinela tampoco”. This patronizing moniker was part of Syngenta's 2003 advertisement in *Clarín* and *La Nación*. According to non-profit organization GRAIN, it clearly constitutes “an open statement of the neocolonialist fervor with which these companies are attempting to dominate this region of the world.” GRAIN, “The United Republic of Soybeans: Take Two,” 2 July 2013. Available at <https://www.grain.org/article/entries/4749-the-united-republic-of-soybeans-take-two>.

“United Republics of Soybeans”, its utilization by academics as reflection of detrimental socio-environmental dynamics can create potentially prejudicial narratives questioning the agency of these countries. An uncritical adoption of the term “United Republics of Soybeans” could be easily related to the imaginary of the South American *republiquetas*, echoing the classic idea of “banana republic”. The Brazilian Empire initially adopted this term in order to derogatorily address the fragile republics aroused from the rubbles of the Spanish Empire.<sup>49</sup> The military coups that plagued Latin America throughout the twentieth century subsequently reinforced the idea of “weakness” associated to Latin/South American nation-states. In this sense, while the image of an “United Republics of Soybeans” adopted by agribusiness companies represents an ideological attempt to overcome the “weaknesses” conveyed by concepts such as banana republics, it also reinforces an eurocentric idea of domination linked to the lack of appropriate national development plans. While such a discourse could easily be adopted by the World Bank, does its scholarly adoption, without proper contextualization, end up reinforcing these old stereotypes and geopolitical hierarchies?

A similar argument can be proposed for another relatively widespread term, that of “Soylandia” – which according to Susanna Hecht, refers to this “immense region” aggregating several countries of South America.<sup>50</sup> In some regions of the Southern Cone, this term is utilized in order to emphasize how soybeans permeate various spheres of daily life, referring to the predominance of the grain in political, socio-environmental, economic and cultural discourses. Nonetheless, this polysemous term mainly holds an ethnocentric or self-deprecating connotation. In urban areas, the term Soylandia is associated to a plain territory, simplified by the predominance of monocultures, and as a consequence culturally inferior. This expression is indeed linked to a tradition of Latin American social thought that gained relevance in several moments along the history of the continent and it is based on the following premises: a) a supposed cultural superiority of the coast or the capitals over the countryside

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<sup>49</sup> About the symbolic and political disputes between the Brazilian Empire and South American republics see Lilian Schwarcz, *As barbas do imperador: D. Pedro II, um monarca nos trópicos* (São Paulo: Companhia das Letras, 1998). See also Manoel Salgado Guimarães, *Historiografia e Nação no Brasil (1838-1857)* (Rio de Janeiro: EdUERJ, 2011): 284.

<sup>50</sup> Susanna Hecht and Charles Mann, “How Brazil outfarmed The American Farmer,” *Fortune* 157, no. 1 (January 2008): 92-106. Also see Andrew Ofstehage, “Farming is easy, becoming Brazilian is hard: North American soy farmers’ social values of production, work and land in Soylandia,” *The Journal of Peasant Studies* 43, no. 2 (2016): 442-460.

(where practically all soybeans are cultivated), b) the urban technical and moral superiority over the rural one, and c) intellectual work as superior to agricultural work. Although soy farming has utilized some of the most modern techniques of agro-industrial production, these images of alleged superiority remain or are re-elaborated both in their ethnocentric and self-deprecatory connotations, when inhabitants of a region internalize these images and enunciate these tropes through self-critical jokes. The idea of predominance or superiority of the modern over tradition – a persistent image in Latin American social thought – lives on in the term “Soylandia.”

A quick glimpse at the historical trajectory of soybean farming in the region reveals complex entanglements that these stereotypical narratives have systematically neglected. Originally domesticated in Manchuria, soybeans first reached South America during the late nineteenth century, landing in Brazil by 1882.<sup>51</sup> Just like in Europe and in the US between the eighteenth and the nineteenth century, the introduction of soy in Latin America was linked to researchers from botanic gardens as well as agrarian schools and labs. On the other hand, traders and smugglers of exotic species also played a role in introducing other soybean varieties in the region. Perhaps more importantly, not in every cases scientists and botanists were responsible for the improvement of soy yields and productivity. In 1882, an agronomist from the *Imperial Escola Agrícola da Bahia*, Gustavo D’Utra, related the first soy cultivation experience in Brazil by a farmer from Cruz das Almas.<sup>52</sup> At the same time, between 1891 and 1892, Austrian botanist Franz W. Daffert carried out an experiment in the Agronomic Institute of Campinas (Instituto Agronômico de Campinas, IAC, state of São Paulo). By 1901, the same Gustavo D’Utra became IAC’s director and introduced new soy breeds, distributing different seed varieties among local farmers.<sup>53</sup> This process was complemented by the intensification of Japanese migrations to Brazil after 1908, with the introduction of Asian breeds in domestic gardens and the production soyfoods such as Tofu, Misso and Shoyo.<sup>54</sup> At the

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<sup>51</sup> Shurtleff and Aoyagi, *History of soybean in South America*.

<sup>52</sup> Geraldo Hasse and Fernando Bueno, *O Brasil da Soja Abrindo Fronteiras, semeando cidades* (Gaspar: Ceval Alimentos, 2000): 9.

<sup>53</sup> Embrapa, *Tecnologias de Produção de Soja - Região Central do Brasil – 2004* (Londrina: Embrapa Soja, 2003).

<sup>54</sup> Hasse and Bueno, *O Brasil da Soja*, 9.

same time, botanist Henrique Löbbecke introduced new varieties both from the US and from China in São Simão (São Paulo).<sup>55</sup>

Finally, towards the beginning of the twentieth century, soybean reached the Latin American Southern Cone, more precisely the southernmost state of Rio Grande do Sul. By 1901, the *Liceu Rio-Grandense de Agronomia* conducted experiments in the municipalities of Pelotas, Dom Pedrito, Pinheiro Machado and Venâncio Aires.<sup>56</sup> By 1914, US agronomist E. C. Craig introduced other American varieties and about six years later, European immigrants in the municipality of Santa Rosa began to test soy farming as a complement to coffee, mainly for domestic consumption.<sup>57</sup> First, in 1923, Lutheran Northern American pastor Albert Lehenbauer introduced a more systematic model of yellow soybean production, mainly destined to swine feeding in order to replace traditional feeds.<sup>58</sup> However, it was Polish immigrants who carried out the first large-scale soybean farming experiences during the early 1930s.<sup>59</sup> Important figures in this process were Polish agronomist and diplomat T. Makomaski, who allegedly first convinced his fellow immigrants to switch to soy farming. In the same period, Polish immigrant and agronomist Ceslau Biezanko also experimented new soy breeding techniques in Santa Rosa, which earned him the title soy pioneer, as his experiments played a central role in turning the city into the “national Capital of soy.”<sup>60</sup>

By the late 1930s, soybean plantations in Brazil began to sensibly intensify, also thanks to experiments of genetic improvement. During this period, the state of Rio Grande do Sul became the undisputed epicentre of the so-called “United Republic of Soy.”<sup>61</sup> However, as demonstrated by the Polish/Brazilian case, the expansion of soybean cultivation was a process mainly led by groups of European immigrants, who began to massively occupy Southern Brazil between the late nineteenth and early twentieth centuries. On the other hand, the expansion of soy farming in the region was certainly a complex and multilayered process with different experiences in several

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<sup>55</sup> João Rui Jardim Freire and Francisco de Jesus Vernetti, “A pesquisa com soja, a seleção de rizóbio e a produção de inoculantes no Brasil,” *Pesquisa Agropecuária Gaúcha* 5, no. 1 (1999): 117-126.

<sup>56</sup> Oliveira and Ribas, *Dom Pedrito*, 9.

<sup>57</sup> Rhuan Targino Zaleski Trindade, “A soja e os colonos poloneses no sul do Brasil: o caso de Ceslau Biezanko e outros personagens (1930-1934),” *História Unisinos* 22, no. 2 (2018): 254-263.

<sup>58</sup> Zaleski Trindade, “A soja e os colonos poloneses,” 257. See also, Hasse and Bueno, *O Brasil da Soja*, 9.

<sup>59</sup> Freire and Vernetti, “A pesquisa com soja,” 117-118.

<sup>60</sup> Zaleski Trindade, “A soja e os colonos poloneses,” 260.

<sup>61</sup> GRAIN, “La República Unida de la Soja recargada.”

areas of Brazil, involving different actors – from national scientists to local botanists, from local farmers to European immigrants.<sup>62</sup> The expansion of soybean farming also followed a similar path in Argentina, another country that received a large number of European immigrants and developed different farming programs.<sup>63</sup> In particular, the Experimental Station of Cordoba (Argentina) carried out the first experience, working in conjunction with Brazilian farmers. Similarly, both in Paraguay and Uruguay, several new varieties were introduced during the late 1940s.<sup>64</sup> The current scenario of soybean monoculture only became to emerge since the 1970s, with the progressive introduction of genetically modified soybeans and later on, during the 1990s, of transgenic crops.<sup>65</sup>

As this brief historical panorama demonstrates, both the term “United Republic of the Soybean,” and “Soylandia” constitute a stimulating critical challenge for environmental historians with an itch for the complex historical narratives that they convey. The search for interpretive terms to address the complex historical trajectory of soybean farming in Latin America will need to deconstruct old stereotypes stemming from the advertising material of large corporations and political rhetoric.

## SOYACENE NARRATIVES IN THE AGE OF THE GREAT ACCELERATION

What if scholars with an interest for soybean histories substituted terms based on old stereotypes with more multifaceted concepts reflecting the historical complexity of soybean narratives? If conceptual constructions are important for environmental historians in order to broaden the range of research questions, it is certainly equally important to adopt terms deconstructing stereotypical assumptions and negotiating the complex history of soybean production. In the context of the Latin American Southern Cone, historical narratives should attempt to address the local and global environmental impacts of soybeans production, while at the same time observing

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<sup>62</sup> See Geraldo Hasse, *A rainha do agronegócio - a história da soja no Brasil* (Ribeirão Preto – SP: Editora Coruja, 2011): 74.

<sup>63</sup> Derli Dossa, *Soja: alguns aspectos de sua participação no mundo, no Brasil e na produção primária e agroindustrial do Paraná* (Brasília: Embrapa, 1986).

<sup>64</sup> Pedro Jesus Rocha and Victor Manuel Villalobos Arambula, *Comparative study of genetically modified and conventional soybean cultivation in Argentina, Brazil, Paraguay, and Uruguay* (San José, CR: Inter-American Institute for Cooperation on Agriculture (IICA), 2012).

<sup>65</sup> See Silvio Crestana and Ivan Sergio Freire de Sousa, “Agricultura tropical no Brasil.” In *Agricultura Tropical. Quatro décadas de inovações tecnológicas, institucionais e políticas, Vol. I Produção e produtividade agrícola*, ed. Ana Christina Sagebin Albuquerque Aliomar and Gabriel da Silva (Brasília: Embrapa, 2008): 41-63; and Mabel Manzanal, “Territorio, Poder y Sojización en el Cono Sur latinoamericano. El caso argentino.” *Mundo Agrario* 18, no. 37 (2017): e048.



the different set of social and political relations that have been determined over time. Here, we propose the adoption of the term *Soyacene*, a concept that has the potential to critically address the historical role of soybean production – and of the Southern Cone – in the context of the Great Acceleration. As argued by John McNeill and Peter Engelke, since the mid twentieth century, the volume of anthropogenic activities has produced unprecedented environmental – and even geologic – transformations.<sup>66</sup> This has officially inaugurated the age of the Anthropocene, a concept formulated by Paul Crutzen and Eugene Stoermer in 2000, which proceeds from the scientifically unquestionable realization about the enhanced “role of mankind in geology and ecology.”<sup>67</sup> Since then, an intense debate about “the ages of the earth” has gained notoriety in the academia, fostering the formulation of narrative categories that both deepen the academic/scientific debate on the subject, and provide governments and private corporations with a less essentialist idea of our planet. Over the last decade, this concept has gained the consideration of several scholars who have addressed the multiple ways in which human action has dramatically altered the earth’s eco-system, determining the extinction of countless species. An example are successful terms such as *Capitalocene*, *Plantationocene* and *Chthulucene*, all critically looking at the intersections between the emergence of capitalism, slavery and the plantation complex as new bio-political categories incorporating and organizing nature as a multispecies, situated, capitalist world-ecology.<sup>68</sup> As far as environmental history is concerned, several scholars have taken a retrospective look at our planet’s history in recent centuries, analyzing the historical processes that have led to these transformations. Certainly, the most successful historical narrative related to the Anthropocene is the already-mentioned Great Acceleration, illustrating the human impact on the biosphere since the mid-twentieth century, through a careful collection of data on the planet’s chemical cycles (e.g. carbon, sulfur and nitrogen), energy allocation (e.g. nuclear energy and oil), intensive food supply (e.g. monocultures, large-scale cattle farming), and

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<sup>66</sup> See McNeill and Engelke, *The Great Acceleration*, 1-6.

<sup>67</sup> Paul Crutzen and Eugene F. Stoermer “The Anthropocene,” *IGBP Newsletter* 41 (2000): 17.

<sup>68</sup> For a general introduction of these debates see Donna Haraway, “Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin”, *Environmental Humanities* 6 (2015): 159-165. See also, Jason W. Moore, “Introduction: Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism,” in *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, ed. Jason W. Moore (Oakland: PM Press, 2016): 1-11; Christopher R. Cox, “Faulty presuppositions and false dichotomies: The problematic nature of The Anthropocene,” *Telos* 172 (2015): 59–81; John Gowdy and Lisi Krall “The Ultrasocial Origin of the Anthropocene,” *Ecological Economics* 95 (2013): 137–47; Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).

demographic growth (e.g. overpopulation and urbanization).<sup>69</sup> This perspective has been complemented by other studies attempting to enrich historical debates by integrating divergent perspectives. As an example, Timothy James LeCain has proposed the *Carbocene*, a courageous attempt to reposition human agency within the earth-system by “recognizing the powerful co-starring role played by coal and hydrocarbons like oil and gas in creating our current era”.<sup>70</sup> Drawing from a neo-materialist perspective beyond anthropocentric modernism, LeCain argues about the transformative environmental agency of non-human actors, more specifically the carbon-based fuels that have played a central role in creating the basic conditions for life on earth.

All these different “-cene” narratives reflect on the dramatic ecological changes driven by the intersection of complex political-economic systems at different historical junctures. At the same time, all these hypotheses take into account singular elements – hydrocarbons, plantations and capitalism, respectively – each of them representing the main powerful “engine” of certain historical transformations. While all sustained by significant scientific evidence, all these concepts run the risk of essentialism if decontextualized and dislocated both in terms of time, space and historical significance. This is a natural risk undergone by the humanities when attempting to use scientific evidence in order to provide socially and biologically grounded epistemological tools. Decontextualization, generalization, anachronism, and essentialism are among the main issues with which these narratives are confronted if not complemented by effective historiographic interpretative tools. It is certainly essential to historicize these concepts, looking at the potential issues that they might encounter in their attempt to describe complex historical phenomena from a defined starting point. For example, as argued by Georg Fischer, the history of the Great Acceleration does not only allow to look at the impact of human actions on our planet, but also to explore the narrowness of the Anthropocene for historical analyses. In fact, historians face important methodological challenges in their conceptual choices since the Anthropocene generally refers to a narrative of global change connecting great causal effects with an

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<sup>69</sup> McNeil and Engelke, *The Great Acceleration*, 4.

<sup>70</sup> Timothy James LeCain, "Against the Anthropocene: A Neo-Materialist Perspective", *International Journal of History, Culture, and Modernity* 3, no. 1 (2015): 23.

interest for data related to energy systems, population growth, water consumption and urbanization. Such a perspective can neglect the small-scale experiences generally absent from the macro-scale approaches: “what is accelerated, how, by whom, with what technical, economic, political, and discursive tools?”<sup>71</sup> This methodological proposal opens up opportunities to reflect on the dynamics of what mainstream narratives of great changes normally omit. With their endemically theological angle, Anthropocene narratives leave little room to look at failures and incompleteness, that are however integral constituents of historical processes, as they contribute to the global understanding of great global changes. If environmental historians are constantly confronted with the challenge to provide coherent narratives on the singularities, continuities, and ruptures that have characterized the environmental history of the earth, how can the complex environmental history of soybeans be related to the Anthropocene? Providing answers by simply stating that the breadth of soybeans’ reach is due to a combination of different anthropogenic factors appears excessively broad and decontextualized in its historical complexities.

The recent history of soybeans in South America constitutes a unique opportunity to analyze the socio-biological infrastructures of our times, providing an historical narrative equally grounded in global economic discourses (e.g. market relations, technological innovation, knowledge production), as well as localized socio-environmental factors. The centrality of soybeans on global markets, with the Southern Cone as the most important center for its cultivation and commercialization, make the concept of Soyacene a useful tool for an environmental history of the Great Acceleration addressing the specificities of local socio-political contexts.

A first specificity of the Soyacene would be to sublimate the environmental and political circumstances that have stimulated soybean expansion in the Southern Cone. Soybeans grow in different regions of the planet, but flourish with greater splendor under authoritarian regimes. Historically, the attempts to introduce this grain in South America began in the late nineteenth century, although for decades adaptation attempts failed due to soil or latitude. North and South American technicians only had

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<sup>71</sup> Georg Fischer, “Accelerations on a Regional Scale: The Transformation of the Doce River Valley, ca. 1880-1980,” *Varia história* 34, no.65 (2018): 447.

finally a chance to transform soybeans into a dominant grain as authoritarian regimes in South American countries such as Brazil, Argentina, and Paraguay were established. The growth of soybean plantations is not only a reflection of the dictatorships in the Southern Cone, but one that shapes these systems and still maintains authoritarian traits in post-dictatorial periods. It seem that while authoritarian institutions were gradually dismantled in concurrence with the relaxation of Cold War politics, structural violence was assimilated by large agribusinesses. If, as pointed out by Tiago Saraiva, wheat varieties and genetic research on pigs can help build a narrative about fascism, can the Soyacene help us understand the history of military dictatorships in South America, emerging from the alliance between neoliberals and authoritarians?<sup>72</sup> Perhaps, writing an environmental history of techno-plants would foster the creation of significantly important and unusual narratives re-interpreting patterns of political violence related to soybean production in the Southern Cone. At the same time, it will need to keep into account the diverse landscape of soy farming across the region, where issues of sustainability, economic profit and scale converge.<sup>73</sup> How did the diverse farming techniques characterizing the Soyacene determine its resilience across geographical borders and market trends? Did the intersection of familiar agriculture and large-scale monoculture create a relationship of mutual help minimizing social conflicts? Do past socio-environmental conflict allow us to foresee the future physiological demise of the Soyacene? How did the global geo-economic reach of the Soyacene influence the socioeconomic composition of the Southern Cone?

In this sense, as a significant device for political agendas combining instances of national authoritarianism, global markets, and local interests, soybeans and other large-scale monocultures could be regarded as an historical articulation of the concept of biopower. Perhaps the Soyacene might successfully merge authoritarian political construction with neo-materialist methodological perspectives, analyzing how the agency of authoritarian regimes and the characteristics of soy have co-constructed

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<sup>72</sup> Tiago Saraiva, *Fascist Pigs. Technoscientific Organisms and the History of Fascism* (Cambridge MA: MIT University Press, 2016).

<sup>73</sup> See for example Bert Vander Vennet, Sergio Schneider and Joost Dessein, "Different farming styles behind the homogenous soy production in southern Brazil," *The Journal of Peasant Studies* 43, no. 2 (2016): 396-418; Mateo Mier y Terán Giménez Cacho, "Soybean agri-food systems dynamics and the diversity of farming styles on the agricultural frontier in Mato Grosso, Brazil," *The Journal of Peasant Studies* 43 no. 2 (2016): 419-441; Rachael D. Garrett and Lisa L. Rausch, "Green for gold: social and ecological tradeoffs influencing the sustainability of the Brazilian soy industry," *The Journal of Peasant Studies* 43, no. 2 (2016): 461-493.

each other.<sup>74</sup> This could allow a non-anthropocentric notion of biopower, looking at the biopolitics of soybean expansion in historical terms. Environmental historians analyzing this complex historical juncture might be able to ask themselves whether soybeans and other grains constitute an integral part of both anthropogenic cultural systems, as well as biological human and nonhuman organisms. Indeed, by transforming human diets through increased access to soybeans, are we also changing human and nonhuman bodies? If animal proteins have had a strong impact on human organisms over the last two centuries, what has been the impact of soybean GMOs in the livestock industry and therefore in our organisms, over the last decades? Has the anthropogenic growth of genetically modified soybeans produced new mechanisms of biopower, enhanced by the material characteristics of soybeans? Following these critical hints, historians might be able to question how the adoption of soybeans as the main source of animal feed, combined with rearing techniques such as confinement, produce “new” organisms – or say modified organisms. Historically, humans have selected and produced new varieties of crops and animals; yet, soy has become perhaps the most successful techno-crop able to load a complex system of genetic information, building resistance to pesticides while successfully complementing animal diets. Has the Soyacene constructed new animal breeds, influencing human-animal relations?

Finally, the concept of Soyacene could also be successfully incorporated by environmental studies on the Southern Cone. The Latin American agricultural landscape is characterized by complex systems of adhesion and resistance, as several small agricultural producers with a progressive political agenda cultivate large areas of organic soybeans, while at the same time combining them with transgenic soy in order to fulfill idealistic and commercial goals.<sup>75</sup> In addition, environmental studies of the Soyacene could shed light over the complex set of interspecies alliances between humans and plants such as Amaranths, as a resistance strategy against the advance of GMOs.<sup>76</sup> Although still partial in both its contents and aims, a similar research agenda would provide environmental historians with the empirical and methodological tools to create narratives addressing the complex temporalities and market flows of soy

<sup>74</sup> For non-anthropocentric revisitation of Foucault's notion of biopower see Silva, Claiton Marcio and Leandro Gomes Moreira Cruz, “Biopolitics and the Anthropocene Era: Ideas of Nature in Henry David Thoreau's Walden”, *JAm It!*, 3 (2020): 50-68.

<sup>75</sup> Beilin and Suryanarayanan “The war between Amaranth and Soy.”

<sup>76</sup> Beilin and Suryanarayanan “The war between Amaranth and Soy.”

production. Moreover, looking at the social, political and ecological impacts of the current expansion of soybean production in the Southern Cone would allow environmental historians to analyze the role of soybean production in the Great Acceleration, and the complex power relations involved in the process. This would in turn allow to expand current historiographical debates on the geopolitical and socioeconomic drives at the core of the Great Acceleration. Certainly, as a proposed historical term, the Soyacene might help researchers and policy-makers to enhance their understanding on the role of the historical processes at the core of the Great Acceleration. Perhaps more importantly, looking at the convergence of chemical, ecological, industrial and economic factors in the making of the Soyacene could allow to reposition the Southern Cone in future debates on sustainability and ecology. As observed by Fernand Braudel, “is not the present after all in large measure the prisoner of a past that obstinately survives, and the past with its rules, its differences and its similarities, the indispensable key to any serious understanding of the present?”<sup>77</sup>

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<sup>77</sup> Fernand Braudel, *Civilization and Capitalism, 15th-18th Century: Volume III, The Perspective of the World* (Berkeley: University of California press, 1992): 20.

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## Hacia el Soyaceno: Notas para una historia ambiental de la soja en el Cono Sur de América Latina (1960-2017)

### RESUMEN

Este artículo ofrece un análisis histórico del cultivo de la soja en una de las regiones más productivas del mundo: el Cono Sur de América Latina, con especial atención en Argentina, Uruguay, Paraguay y el sur de Brasil. Partiendo de la premisa de que las narrativas actuales sobre el cultivo y la comercialización de la soja se han centrado principalmente en datos cuantitativos de alcance mundial, este artículo analiza el potencial de las discusiones académicas basadas en las herramientas críticas de la historia ambiental. Además, propone la adopción de un nuevo término que destaca la historia multiescalar de la soja en el Cono Sur: el Soyaceno. Este término intenta dar forma a una narrativa original de la producción de soja en la era de la Gran Aceleración, deconstruyendo supuestos históricos problemáticos. Además, mediante el debate crítico de los impactos de la producción de soja, el Soyaceno se esfuerza por producir una narrativa histórica no esencialista en la que los intereses divergentes de las diferentes capas sociales (por ejemplo, los actores gubernamentales, las empresas privadas, los pequeños agricultores y las poblaciones indígenas) son abordados desde herramientas críticas que permiten una mayor contextualización.

**Palabras clave:** Soyaceno, Narrativas históricas, Historia Ambiental, Cono Sur, Antropoceno, Gran aceleración.

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