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作為企業霸權的孟山都：沃勒斯坦世界體系理論在全
球農業企業中的應用

Monsanto as a Corporate Hegemon: Applying
Wallerstein's World-Systems Theory to Global
Agribusiness

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沃勒斯坦世界體系理論在全球農企業的應用
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Systems Theory to Global Agribusiness

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ABSTRACT & KEYWORDS (CHINESE)



Abstract

孟山都已成為全球農業與環境辯論中的核心行動者，其企業策略深刻形塑了全球範圍內的農業實踐與生態後果。本論文以伊曼紐爾·沃勒斯坦（Immanuel Wallerstein）本人對當前世界結構正處於轉型之中的承認作為出發點。依其預測，現代世界體系的終結預期將在 2050 年之前發生；此一體系起源可追溯至四個多世紀以前，屆時將不復存在。因此，本研究將以一種更新且更具當代性的視角，重新檢視「霸權」的概念——亦即一個國家或全球權力在農工產業、商業與金融領域中所展現的支配地位。

然而，繼起體系及其霸權形態的具體特徵仍然充滿不確定性，即便沃勒斯坦曾提出若干預測，亦未能加以明確界定。基於此，本論文嘗試引入「企業霸權」的概念，以期將世界體系理論調整並適用於當前情境，並以孟山都作為研究對象。藉由既有理論框架，本研究旨在分析孟山都如何體現霸權權力，其方法在於檢視近年來於訴訟過程中解密並公開的公司內部溝通文件。

透過上述實證資料，本文的分析聚焦於三個核心面向：孟山都的霸權運作機制、其企業韌性與脆弱性，以及此一案例對世界體系理論所帶來的理論意涵。本研究之整體目標，在於促進國際關係理論、農業企業研究與環境政治之間的理論連結與對話。

Keywords

企業霸權；世界體系理論；孟山都；農業企業；糧食體制

ABSTRACT & KEYWORDS (ENGLISH)



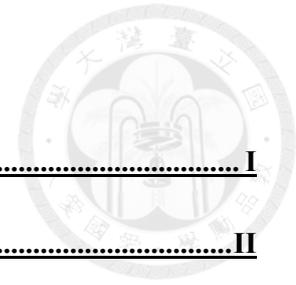
Abstract

Monsanto has emerged as a central actor in global agriculture and environmental debates, whose corporate strategies have shaped agricultural practices and ecological consequences on the globe. This thesis starts from the acknowledgement by Immanuel Wallerstein himself that the structure of the world as it exists is undergoing transformations. Expected to occur before 2050, the modern world-system, whose origins trace back to more than four centuries, will cease to exist. As such, the hegemony as characterized by the dominance of a state, a global power, in the agro-industrial, commercial, and financial domains will be examined from a renewed and more contemporary perspective. Yet, the features of the successor system and hegemon remain uncertain, and Wallerstein was unable to delineate them in spite of a few predictions. This thesis thus seeks to investigate the notion of a corporate hegemon in an attempt to adapt the world-systems theory to a present context, with Monsanto as the subject of study. Drawing on existing frameworks, the research aims at analyzing how Monsanto embodies hegemonic power, through an analysis of communications internal to the company and declassified as part of litigation processes in recent years. With this evidence, the analysis highlights three central points: Monsanto's hegemonic mechanisms, corporate resilience and vulnerabilities, and implications for world-systems theory. This research is framed within the objective of contributing at connecting International Relations theory, agribusiness studies, and environmental politics.

Keywords

Corporate hegemony; World-systems theory; Monsanto; Agribusiness; Food regimes

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CHAPTER 1: INTRODUCTION



“Oui, l’ouragan allait bientôt venir ;

Mais cela valait-il la peine que l’on en parlât et qu’on dérangeât l’avenir ?

Là où nous sommes, il n’y a pas de crainte urgente. »

René Char

Sivergues, 30 Septembre 1949

“Yes, the hurricane was going to come soon;

But was that worth the trouble they spoke of and which turned the future upside down?

There is no urgent fear here where we live.”

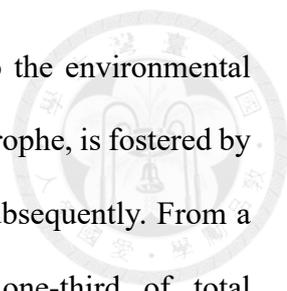
René Char

Sivergues, Sept. 30, 1949¹

In René Char’s poem, outsiders arrive to warn about the approaching storm, an unrelenting adversary, but the residents are complacent or hesitant to act. The French poet composes this poem, “Les Inventeurs”² in 1949, in the aftermath of World War II and one year before the Swiss chemist Dr. Henri Martin discovers glyphosate. At the time of the writing, Monsanto Company exists for almost half a century, founded in 1901 by John Francis Queeny and headquartered in Creve Coeur, Missouri, in the United States. Char’s poem speaks of an impending storm, which he uses as a metaphor for a crisis which will

¹ Char, R., & Guenther, C. (1957). The Inventors. *Poetry*, 89(6), 333–334.

² Char, R. (1949). Les Inventeurs. *Le soleil des eaux*: (G. Braque, Ill.). Éditions du Seuil



inevitably occur, now commonly termed climate change to refer to the environmental destruction of the Earth. Climate change, the impending global catastrophe, is fostered by anthropogenic actions and the greenhouse gas emissions released subsequently. From a FAOSTAT data release, agrifood systems account for about one-third of total anthropogenic greenhouse gas emissions³, with activities from crop to livestock production and the supply chain for food manufacturing. Monsanto is an agrochemical and agricultural biotechnology company, whose role in the agribusiness plays a significant role in the acceleration of climate change. Monsanto's role in the environmental crisis, as well as sanitary, through the production of genetically modified seeds and the manufacturing of herbicides, has often been denounced. In her book from 2008, "The World According to Monsanto", which greatly inspired the writing of this thesis, the French journalist Marie-Monique Robin characterizes Monsanto as among the most polluters in the industrial history⁴. She opens her chapters by discussing a letter, referred to as a "pollution letter", in which Monsanto provides guidelines for its employees to respond to customer question about PCBs. These are, now internationally banned, highly toxic and carcinogenic chemical compounds developed by the company and used in electric transformers and hydraulic equipment, as well as in ink, paper and plastics. In the pollution letter, dated from February 16, 1970, Johnson N. T. writes "we can't afford to lose one dollar of business"⁵. René Char questions whether it is worth disturbing the present and future, by acting on the warning, rather than act as if nothing was about to happen. This parallels Monsanto's approach, where addressing environmental and health concerns is sidelined, prioritizing business continuity over

³ Food and Agriculture Organization of the United Nations. (2024, November 14). *Greenhouse gas emissions from agrifood systems: Global, regional and country trends, 2000–2022*. FAOSTAT Analytical Brief Series, No. 94

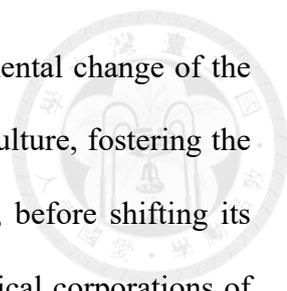
⁴ Robin, M.-M. (2008). *Le monde selon Monsanto : De la dioxine aux OGM, une multinationale qui vous veut du bien*. Éditions La Découverte

⁵ Annex 1: JOHNSON N. T. (1970). Pollution Letter, September 16th, 1970

urgent action. The year 1970 is also the one when Monsanto scientist John Franz discovers glyphosate can be used as weedkiller. The company patents it, and subsequently decides to commercialize it as an herbicide under the brand name of Roundup.

Roundup is the best-seller of the company, which enabled Monsanto to develop and sell a range of derived commercial products. It is also a major scandal for the company, with a major turn in the 2000s. Monsanto had to face many trials, during which many public controversies surfaced with the declassification of a great number of documents internal to the company, including communication with multiple actors from different spheres of influence. Roundup was also at the center of debates on its carcinogenic consequences, with two high peaks: the first in 2015, when the International Agency of Research on Cancer classified glyphosate as potentially carcinogenic to humans, and the second in 2018 when Monsanto's weedkiller was recognized as a substantial contributing factor in causing DeWayne Johnson's cancer. In regard of the many controversies which Monsanto faced throughout decades, it raises a question on how corporations consolidate and defend power when there is a clear opposition.

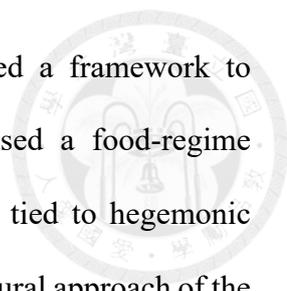
To tackle well the topic of this thesis, it is essential to address the historical background of agriculture as a political subject. Agriculture has, for many centuries now, ceased to be a private activity. It is also at that time that Immanuel Wallerstein, corroborated by Harriet Friedmann and Philip McMichael, sees the emergence of the nation-state, and the beginning of its conception of the modern world-system. These authors will be further discussed in the thesis, as their work greatly influenced the research and its possible implications. Agriculture is also a geopolitical discussion, with the 1960s Green Revolution as a geopolitical strategy during the Cold War. Indeed, the United States developed a modernization model of agriculture in the 1960s, with the introduction of revolutionary practices such as the reliance on mechanization, hybrid seeds, as well as



fertilizers and pesticides. The Green Revolution is overall a fundamental change of the practice of agriculture toward an intensive model of industrial agriculture, fostering the emergence of agribusiness corporations such as Monsanto. Indeed, before shifting its focus to agriculture, the company stood as one of the leading chemical corporations of the XXth century. The shift undertaken during this decade shaped the strategic specialization of Monsanto to agribusiness, as this sector of economic activity appeared highly promising. It opened space for corporations and dependency on industries, thereby rendering smallholders vulnerable. As such, Monsanto's trajectory intersects with historical and political currents, with Agent Orange used as wartime chemicals during the Vietnam war, the invention and marketization of Roundup after the Green Revolution, and more recently to genetically modified seed strategy and patenting. Agribusiness is more than an industrial sector, it also a structural actor in global politics. There are also systemic effects resulting of this economic sector, such as ecological consequences, emphasized previously, and unbalanced relations between the core industries and the peripheral farming activities.

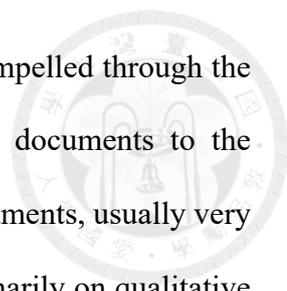
Critical scholars have framed modern agrobusiness and namely Monsanto under political terms, and especially concepts relevant in the International Relations field of study. By reviewing seed monopolies, dispossession of peasants, patent regimes and the rhetorical power of the “feed the world” narrative⁶, the Indian scholar and activist Vandana Shiva characterizes these strategies as bio-imperialism, in a similar concept than the Marxist view of imperialism. With this perspective, it fosters an ethical and political critique, that motivates examining Monsanto beyond markets, beyond its economic characteristics. The Marxist conceptualization is interesting and, by reframing it in a more

⁶ Shiva, V., & Shiva, K. (2020). *Oneness vs. the 1%: Shattering illusions, seeding freedom*. Chelsea Green Publishing



recent period, Harriet Friedmann and Philip McMichael developed a framework to connect agriculture to cycles of global capitalist power. They used a food-regime conceptualization, highlighting periods of agricultural organization tied to hegemonic states. They adopt a similar approach to Wallerstein's historical-structural approach of the world-systems theory, on which their food-regime system is grounded, and as such effectively reshape an International Relations theory to provide an analysis of modern agribusiness. Immanuel Wallerstein's theory is particularly pertinent to understand hegemony across economic, political and ideological domains. Hegemony is meant in the sense of the dominant position of a power on the integrality of the other powers composing the world-system, for which Wallerstein develops a theoretical framework emphasized in this thesis' conceptual framework. Wallerstein also asserts a dichotomy between core and periphery, which Vandana Shiva uses in a similar manner to talk about agribusiness corporations and farmers. Wallerstein wrote about states, not corporations as the subject of study, which explains why its theory has rarely been applied directly to corporate actors in agribusiness. The aim of this thesis will thus be to test Wallerstein's hegemony conceptualization on the case of Monsanto, in an attempt to contribute to International Relations by showing how corporations can embody hegemonic mechanisms.

The choice of Monsanto has been supported for the reason that the corporation concentrates, and makes visible, the mechanism of corporate agribusiness power. Indeed, Monsanto is granted an emblematic nature, with Roundup and the genetically modified seeds, making it part of the giants of agribusiness, developing biotechnology to shape modern agricultural practices. The company also has much visibility in public debates, and has faced many challenges making it a great subject of analysis to see how such visibility has been handled, and challenges overcame. Furthermore, and this is further

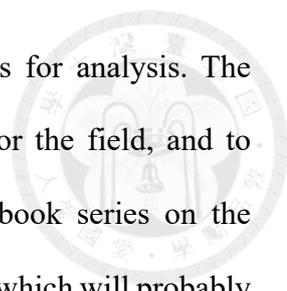


expanded in the chapter on method and data, Monsanto has been compelled through the Freedom of Information Act (FOIA) to declassify many internal documents to the company, coined the Monsanto Papers. Accessing these internal documents, usually very difficult to have, enables a close analysis. This thesis relies thus primarily on qualitative analysis of internal corporate documents, as this approach privileges internal raw reasoning over polished public communications.

Yet, the research confronted several practical challenges, as the dataset, although strategically sampled, was remarkably large with a total of 5402 pages, selected accordingly to a cross-sectional and categorical indexing method. Furthermore, some of the redaction and names were censored, which posed a challenge to interpretive reading, but was also relevant to the analysis. Some of the theoretical issues required reflection, as the application of a state-focused theory to a corporation meant having to reshape in a way the conceptual framework, since the military dimension was missing.

This thesis has multiple research interests, for the field of International Relations as well as a contribution for agribusiness and environmental politics. The study of global economic power has traditionally focused on states, as Wallerstein gives much emphasis to the economic significance of economic elements and variables in his world-systems theory. Yet, corporations increasingly wield influence, making it relevant to compare to that of national actors. Wallerstein explains that “initially this capitalism was constructed in the agricultural arena, with different modes of labor control for different zones of the world-economy”⁷, which fostered the idea for this thesis, as agricultural has been central in his theory. According to him, agriculture is central in understanding the capitalist

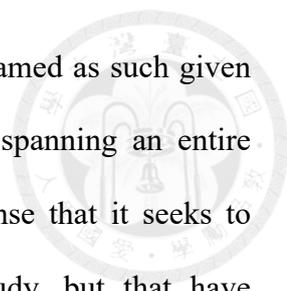
⁷ Wallerstein, I. (2011). *The Modern World-System IV: Centrist Liberalism Triumphant, 1789–1914* (1st ed.). University of California Press. Preface



world-system formation, which makes agribusiness a strategic lens for analysis. The writing of this thesis has been motivated by the potential inputs for the field, and to continue Wallerstein's work of theorization. Indeed, he ends his book series on the modern world-system by talking of a new situation, a structural crisis which will probably take an end around 2050 when the modern world-system will cede place "to a successor or successors yet unknown, unknowable, and whose characteristics we cannot yet sketch"⁸. In other pieces of work, he makes prediction for the future of its conception of the world as it is structured for now, emphasizing that "the modern world-system is in the process of coming to its end [...], it is rather unlikely that the successor system will have an inter-state system of the type we know now, since it is rather unlikely that the structure of sovereign states will survive"⁹. This thesis seeks to provide reflections on the structure of the potential system that will replace the one that has characterized the past four centuries. Corporate actors like Monsanto can be seen as part of this transformation, as a non-state structure wielding influence. The aim is to provide an experimental thinking about the evolution of the modern world-system and the emerging role of corporate actors in shaping global structures. Wallerstein's theory is particularly relevant to study social systems as it is the case in this thesis, not just groups or organizations. It also extends the food-regimes literature of McMichael and Friedmann, which does not cover the structural transformations since the 1970s, by focusing the analysis on a relatively recent time frame, from 2014 to 2017, and which reshape Wallerstein's theory. In this thesis, Wallerstein's theory is applied as it was originally developed for an interstate structure of the system, and on the idea of hegemony being exercised by a state actor. As much as the world-systems theory is fascinating and merits further study from that perspective, the research

⁸ Ibid. Preface

⁹ Wallerstein, I. (1996). The inter-state structure of the modern world-system. In S. Smith, K. Booth, & M. Zalewski (Eds.), *International Theory* (1st ed., pp. 87–107). Cambridge University Press. p105-106



will center on Monsanto as a hegemonic actor. The research was framed as such given that such a project would demand years of research, potentially spanning an entire academic career. This thesis is an experimental project, in the sense that it seeks to establish a connection between two rather distinct fields of study, but that have nonetheless already been substantially explored as previously mentioned. The experimental nature lies essentially in the application of a theory from International Relations, in its original form, to subject of study that falls outside the rather established boundaries of that discipline. The research requires also the construction of an empirical framework capable of testing and supporting the assumptions and the research question. As such, the research question that will guide the empirical work and analysis, and underpins the entire study, is as follow: **In what ways does Monsanto's behavior in agribusiness reflects and assesses Wallerstein's hegemony in his world-systems theory?**

The structure of this thesis is divided into seven chapters. The first is the introduction, in which some context was given, and the main subjects of the study were introduced. The research interests were also emphasized, to provide a tentative justification and to situate this work within existing scholarship.

Chapter 2 is essential for the understanding on the analysis as it gives a literature review, making references to environmental politics, to the Green Revolution and to the Anthropocene. Some elements will be developed such as bio-imperialism, monopolies, patents and coercive mechanisms. This chapter also offers the conceptual framework of the study, drawing on McMichael's and Friedmann's food regimes theory, and developing Wallerstein's world-systems theory through hegemony.

Chapter 3 focuses on giving the ontological and epistemological positioning, tackling elements relative to qualitative document analysis and the method of categorical indexing, as well as defining the dataset and the sampling strategy, the ethical considerations and limitations.

Chapter 4 is the first of the analysis part of this thesis, and tackles Monsanto's corporate power by integration of others and reports what the internal documents say of the corporation's hegemony, about the economic and technological dominance as well as its positioning and expansion on the global market.

Chapter 5 is more theory-related, and emphasizes the mechanisms of hegemonic maintenance such as lobbying, knowledge control and ideological influence.

Chapter 6 evokes how Monsanto cope with resistance through counterstrategies to neutralize challenges as depicted in internal communications but also refers to the fragility of its corporate dominance.

At last, Chapter 7 concludes the analysis by focusing on a potential decline or structural crisis, emphasizing Wallerstein's cyclical pattern and decline of state hegemonies. This comparison is made with evidence from lawsuits, regulatory challenges and public backlash.

Finally, this thesis ends with a look of the key findings, on the elements that signify Monsanto as a hegemon to draw a parallel with Wallerstein's framework, but also the ones that do not, with some reflection on the limitations. It also alludes to the theoretical contribution and broader implications of this research, and offers some future directions

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK



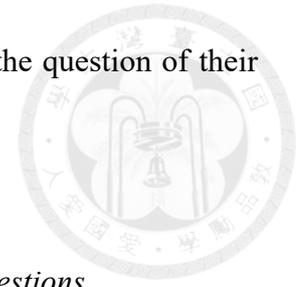
This chapter centers on reviewing the existing literature to situate this research within the existing literature, and what to highlight the contribution of this thesis. It also presents the conceptual framework underpinning this work, after presenting Immanuel Wallerstein's work, addressing his world-systems theory in a neo-Marxist conception, and emphasizing its theoretical notion of hegemony.

Section 1: Literature Review

1: Linking natural sciences, environment, and political science

This thesis seeks to connect two seemingly distant subjects, to contribute to further critical reflection. It appears that studying Monsanto's hegemony through Wallerstein's theory has not been researched before, hence the originality and innovative scope of this approach. This following section while have at heart to provide a literature review of what has been written on these topics before. To get a better grasp at this review, it has been structured to encompass works that span from broad and more general to more specialized on the question, with writings that directly influence this thesis and demonstrate the relevance, if not the necessity, to view today's global corporations through International

Relations concepts, in light of structural transformations that pose the question of their power.



A) The Anthropocene and the political turn of environmental questions

To start this section, the discussion first turns to broader considerations, in seeing what has been at the beginning of environmental questions through the lenses of social sciences. Although this first part may appear quite decentered from the research object, it shows the relevance of this thesis as it falls within a broader specter of questions. This work of research also fits within a more recent trend of considering increasingly the environment as a political and economic object, in the light of the climate crisis and all the subsequent consequences. Linking this discipline to a topic only ever associated with natural sciences, social sciences began to question the effect of mankind on earth and nature. In 1778, the French thinker Buffon write about the significant presence of mankind on earth, and the ramifications for its sustainability. He views mankind's footprint and legacy as detrimental and disastrous, and especially blames what he calls nation-states, as opposed to 'savages', for overconsuming the resources of the earth¹⁰. Still, the mankind's role is, from his writings, overall positive. Buffon reinsert the environmental question to address rather the role of mankind, and his analysis is to a greater extent interesting as he orders his observations from the perspective of state typology.

The hierarchical dimension is also central in this question, considering the standpoint highly spread of mankind's superiority over other living beings and organisms,

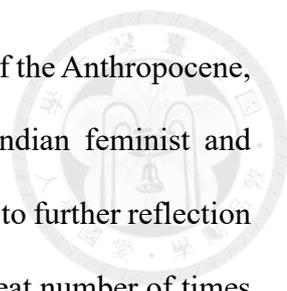
¹⁰ Buffon, G.-L. L. (1809). *Histoire naturelle, générale et particulière. Supplément, Tome 5, avec la description du Cabinet du roi*. Imprimerie Royale. P237

what Philippe Descola coined ‘naturalism’¹¹. The author also explains that such an attitude was born in Western countries, and what fostered ‘naturalism’ is the way mankind positioned itself as the one at the controls of the Earth. This is an interesting element to consider when analyzing Monsanto, or agrobusiness corporations in general with the way they claim innovations on modified seeds. This overall appeals to other considerations and elements in this literature review, which will be relevant in the analysis of the results of the empirical research.

One coinage central to the linkage of mankind and environment is ‘the Anthropocene’. This was the first concept that fostered reflection on the connection between social sciences and environment, ultimately leading to define the research focus of this thesis. The two French authors, Christophe Bonneuil and Jean-Baptiste Fressoz define in their book *L’Événement Anthropocène: La Terre, l’histoire et nous*, define the Anthropocene as a geological revolution of human origin, mankind being at the creation of a profound transformation of the Earth, which has been determined historically by centuries of political and economic choices¹². This profound transformation is characterized by major mutations of biochemical cycles, water among others, and the overexploitation of Earth’s resources. The Anthropocene is a shift in the human condition, and raises questions on the belief that the awareness of human influence on nature and the climate is recent, and fundamental in this thesis, that preservation is based solely on natural science. Indeed, the two authors have at heart in their work to recenter the debate about the climate crisis on structural conditions, and especially historical political and economic decisions, which are central to social sciences research and to this thesis.

¹¹ Descola, P. (2005). *Par-delà nature et culture*. Editions Gallimard

¹² Bonneuil, C., & Fressoz, J.-B. (2016). *L’Événement anthropocène : La Terre, l’histoire et nous*. Éditions Points.



Some authors prefer to avoid calling the past decades the age of the Anthropocene, questioning such a concept, in the case of Vandana Shiva. The Indian feminist and ecologist activist and author developed an analysis greatly interesting to further reflection on the elements of research of this thesis, and will be mentioned a great number of times in this work. She does not want to keep on putting human at the center of consciousness, as anthropocentrism is closely associated with Western paradigm of colonialism, industrialism and capitalism¹³. Considering these elements, this thesis acknowledges the concept of the Anthropocene as striking for this thesis, to offer some guidelines for reflection. Such a concept stays nonetheless quite broad to use in light of the specific topic of this work, and particularly the research question. Still, it is elemental to begin the literature review with an overview to better introduce and then tackle the subject.

B) The green revolution and the geopolitics of agrochemicals

Continuing to aim at linking social sciences, and particularly politics with environment, it is essential and inevitable to discuss the Green Revolution. This ‘revolution’ took effect in the 1960s, in a context of Cold War. The United States’ government decides to modernize agriculture, to answer food needs, and provide food safety to appear in a good light in the world, and especially Asian and South American agrarian communities. The overarching goal was to contain communism in these parts of the world. During this Green Revolution, the agriculture is intensively industrialized, and see the creation hybrid rice and corn varieties, along with a growing use of machines, pesticide and artificial fertilizers¹⁴. The consequences on the environment are significant

¹³ Shiva, V., & Shiva, K. (2020). *Oneness vs. the 1%: Shattering illusions, seeding freedom*. Chelsea Green Publishing. p109

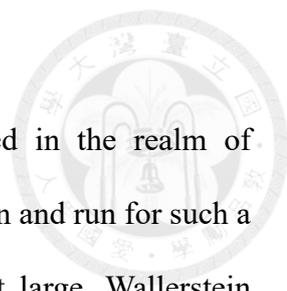
¹⁴ Bonneuil, C., & Fressoz, J.-B. (2016). *L'Événement anthropocène : La Terre, l'histoire et nous*. Éditions Points.

and, by industrializing this sector of activity as highly reliable on the consumption of inputs, make small farm more vulnerable in the face of big corporations.

Another element to add to the linkage between international relations and environment is maybe a more evident one: pesticides and their use in political conflicts. Considering the research topic of this thesis, this is an undeniable connection to tackle in this work. This calls almost inevitably for the Vietnam war (1955-1975), a conflict in which the use of pesticide is still resonant because of its mediatization, the inhumane use of such weapons of war and the everlasting consequences on the Vietnamese population. Agent Orange, a powerful herbicide commercialized by Monsanto, has been highly employed by the United States in the conflict in complement to the relative inefficacy of incendiary bombs and napalm to reduce to ashes the Vietnamese tropic forest. The quantity used in this war is estimated to amount seventy million of litres of product, destroying a immense part of the forest surface in Vietnam. The corollary of this herbicide used as a chemical weapon has been disastrous in Vietnam, where populations still suffer from mutagenic effects to this day, in various forms.

Vandana Shiva also address the question of chemicals used to serve as weapons, asserting that Monsanto and Bayer, now merged, have had an history of developing explosives and lethally poisonous gases during World War II, which they sold to both the Allied and the Axis Powers. The chemicals developed in the context of war, using new technologies and encouraging innovation, enabled Monsanto to keep a powerful position as an agrichemical corporation and selling these products for industrial agriculture at the end of the war¹⁵. It is in the context of conflicts that the link between international relations and chemicals businesses is probably the most evident and notorious, thus interesting if not imperative to address such a connection.

¹⁵ Shiva, V., & Shiva, K. (2020). *Oneness vs. the 1%: Shattering illusions, seeding freedom*. Chelsea Green Publishing. pp53-54



This thesis aims at using a theoretical concept, developed in the realm of International Relations, to study and evaluate the hierarchical position and run for such a position of Monsanto in agrichemical business, and agriculture at large. Wallerstein constructed his theory in the line of Marxist views, offering a neo-Marxist conception of the modern world. Marxist theories have been considering the environment and agriculture. Although Marx has not focused his writings on these considerations, he observes and criticizes the ecological consequences of capitalist agriculture, which create a rupture between nature and society¹⁶. Rather recent scholars have considered the question of agriculture to study it directly from a Marxist, or Structuralist-Marxist perspective. This will be delved into in the last part of the literature review.

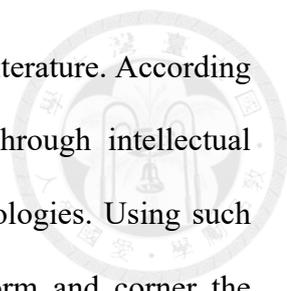
2: International Relations and agriculture: framing the debate

This second part aims at precisising the focus on what works have been influential on International Relations, rather than social sciences as a whole, and agriculture rather than environment. This paragraph will be articulated with two main topics, bio-imperialism on the one hand and monopolies and coercive mechanisms on the other hand.

A) Bio-imperialism and intellectual property in agriculture

Vandana Shiva, in a recent article for Navdanya International, the Indian non-governmental organization she founded thirty years ago, defines the term of bio-

¹⁶ Bonneuil, C., & Fressoz, J.-B. (2016). *L'Événement anthropocène : La Terre, l'histoire et nous*. Éditions Points.



imperialism, or food imperialism, although already existing in the literature. According to the Indian activist and scholar, bio-imperialism takes effect through intellectual property rights, with genetically modified organisms (GMO) technologies. Using such technologies, agrobusiness corporations such as Monsanto transform and corner the commercialization of seeds¹⁷. The consequences are inevitably at the expense of peasant communities. Shiva also mentions the danger for territories recognized as centers of origins, as GMO crops have been imposed all over the world. The strategy adopted by agrobusiness corporations is to advertise these modified crops as a solution to food insecurity, in a similar manner the United States imposed the Green Revolution and the industrialization of agriculture in the 1960s. They mobilize regulatory frameworks for intellectual property of seeds, which are some of the coercive mechanisms developed in the next paragraph.

B) Monopolies and coercive mechanism in agribusiness

The intellectual property on seeds is secured by patents, which allow monopolies in the domain for powerful corporations, sometimes giving property to these enterprises of traditional varieties used by farmers over millennia¹⁸. These coercive mechanisms are regulated by the WTO's Trade Related Aspects of Intellectual Property Rights agreement, which extend property on every life form and traditional knowledge. Shiva points out how such regulatory frameworks facilitate monopolies, especially in agrobusiness. Monopolies are inherent and adopt similar patterns to hegemonic powers, although coined in a rather economic domain. The topic of hegemony will delve into in the part on the conceptual framework. The Indian writer asserts the connection between corporate

¹⁷ Shiva, V., Navdanya International. (2024, April 15). *Bio-imperialism vs. Bio-diversity*. Navdanya International

¹⁸ Shiva, V. (2005). *Earth democracy: Justice, sustainability, and peace*. South End Press. pp.155

globalization and militarism. She introduces the context of war and propaganda, arguing that conflicts are taken advantage of by corporations to advertise for their products and expand their influence, as seen with the implication of Monsanto in the Vietnam War. She even mentions directly Monsanto, who 'goes to war on truth' to sell its genetically engine seeds, thus using propaganda as a truly military tool to assert dominance in agriculture¹⁹.

Vandana Shiva uses concepts developed in International Relations to highlight the political implications of the methods used by agrobusiness corporations to assert dominance. These observations will be of great use in the more thorough analysis along the empirical research.

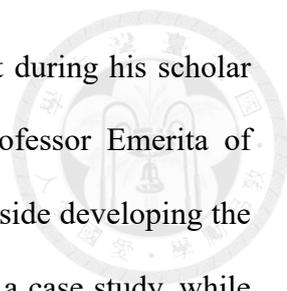
3: Influential works shaping this research

The last part of this literature review is the more precise one, as it introduces significant work that have centered their object of research around concepts developed by Wallerstein, and especially his world-systems theory. The following works influenced fundamentally a rather recent way of tackling and approaching agriculture in the light of structural transformations and globalization.

A) Wallerstein's legacy and adaptations in agriculture

The two authors discussed thoroughly are Harriet Friedmann and Philip McMichael. The latter is an Australian sociologist and Professor Emeritus of Global Development at Cornell University. His works focused on conceptualizing what he coins

¹⁹ Ibid. pp.194



‘food regimes’, and the agrarian question. He also contributed a lot during his scholar trajectory with Harriet Friedmann. She is a sociologist and a Professor Emerita of Sociology at the University of Toronto. She focused her work, alongside developing the food regime theory with McMichael, on the world wheat market as a case study, while emphasizing global systems in her analysis of agricultural and food systems organization. Both authors, highly recognized in their field of studies, developed the food regime systems in the late 1980s as a lens to interpret global food systems through historical, political and economic transformations, linked to capitalism.

Indeed, they set their theory of food regime systems in a capitalist economy, and the capitalist world economy. They reintroduce the decisive role of agriculture in the development of the modern world-system²⁰. These concepts of ‘capitalist world economy’ and ‘modern world-system’ are both coined and developed by Wallerstein in his world-systems theory, which will be developed in the conceptual framework. It is thus evident how much Wallerstein’s work influenced McMichael and Friedmann in their theory. In a sense, their work connects the most with what this thesis aims to create, considering they adapted Wallerstein’s theory to fit within the domain of agriculture. This is why their scholar writings are the most significant for the framing of the research topic.

Friedmann and McMichael acknowledge, in the same way Wallerstein does in his first volume of the modern world-system series, the role of agriculture in the process of nation-state formation occurring in the XIXth century, especially with settler states playing a key role when exporting temperate crops which became the basis of a new type of trade. As a result, metropolises developed their colonial institutionalization when directly administrating tropical export agriculture²¹. The role of agriculture, and specifically the

²⁰ Friedmann, H., & McMichael, P. (1989). Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present. *Sociologia Ruralis*, 29(2), 93–117. pp.91

²¹ Friedmann, H., & McMichael, P. (1989). Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present. *Sociologia Ruralis*, 29(2), 93–117. pp.94

division and recombination of industry, in Wallerstein's world the division of labor, is inherent to the structuring and restructuring of the state system²². Henri Bernstein identifies some key elements when reviewing the food regime systems of Friedmann and McMichael, which echo core concepts of Wallerstein's theory. He talks of an international state system²³, which is extensively discussed in the first volume of Wallerstein's modern world-system series. What is even more interesting is that the concept of international system is paramount as it is main ontological element in the International Relations field, especially for mainstream epistemological perspectives. Talking about international system in relations to food regimes enables a direct link between International Relations and historical agriculture movements. Capitalism is also a key element to food regimes, as it is for Wallerstein in developing his history the modern world-system as founded and regulated on capitalism with the social reality of the capitalist world-economy. Food regimes are thus driven by dominant forms of capital and their modalities of accumulation.

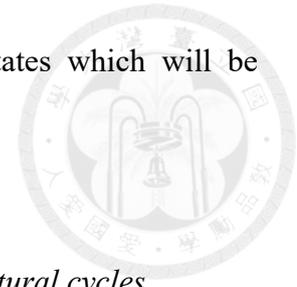
Before diving into the food regime systems directly and more in depth, it seems interesting to add one more element tackled by Friedmann when applying precisely Wallerstein's modern world-system to a case study, the history of the hamburger. She explains that the power of corporations is in a sense allowed and enabled by agreements created by national states and international institutions such as the World Trade Organization or the North American Free Trade Agreement. She asserts that corporations don't have inherent power, but it is rather derived from the political and legal frameworks created by states, hence depending on them to exist²⁴. This perspective questions the role

²² Ibid. pp.111-112

²³ Bernstein, H. (2015, April). *Food regimes and food regime analysis: A selective survey* (Conference Paper No. 1). BRICS Initiatives for Critical Agrarian Studies (BICAS).

²⁴ Friedman, H. (2000). *What on Earth is the Modern World-System? Foodgetting and Territory in the Modern Era and Beyond*. *Journal of World-Systems Research*, 6(2), 480-515. pp.483

of corporations, in this case agrobusiness ones, in relation to states which will be answered in the case of Monsanto in the empirical research.



B) The Food Regimes theory: linking hegemony and agricultural cycles

The concept of the food regime aims at linking international relations of food production and consumption in specific periods of capitalist transformations since 1870. Food regimes are framed within the similar approach to Wallerstein, in the sense of an historical reading²⁵. McMichael and Friedmann acknowledge with their concept periods of stability that are corresponding to periods of hegemony. They mention the British hegemony and the more recent dominance of the United States. These two periods of hegemony are two of the three analyzed by Wallerstein, omitting the Dutch hegemony, too early in history in reasons of their period framing. The two authors assert that emphasizing periods of hegemony is what makes their food regime approach quite unique to other ways of studying agrifood systems²⁶. This focus on hegemony is particularly significant for this thesis as it shows the applicability of the concept of hegemony to agriculture and systems in relation to agriculture. It also reasserts the relevance of the object of research, Monsanto, as it benefits from a powerful position in agrobusiness.

This part will delve more in depth on the concept of food regimes, especially to map out the timeline of such regimes studied by McMichael and Friedmann. In their works together, they conceptualized two food regimes, the first one from 1870 to 1914 in regard to settler agriculture as a key element to the formation of nation-states. The second

²⁵ Friedmann, H. (2005). *From Colonialism to Green Capitalism: Social Movements and Emergence of Food Regimes*. In F. H. Buttel & P. D. McMichael (Eds.), *New Directions in the Sociology of Global Development, Research in Rural Sociology and Development, Vol. 11* (pp. 227–264). Emerald Group Publishing. pp.228

²⁶ Ibid. pp.228-229

food regime sees the relationship organized in the first one, between settler states and their colonies, as extended to the post-colonial world, in a period from roughly 1947 to the early 1970s²⁷.

They observe during the first food regime the rise of the agro-industrial complex, as discussed previously, when agriculture became dependent on commercial sectors of industry in a context of growing international trade. Dwelling on that, Friedmann observes that the modern world-system, whose start is significantly earlier than the first food regime, establish a link between ‘foodgetting’ and territory²⁸. This is when the concept of peripheries, as opposed to the core, is introduced. This element is central to Wallerstein’s theory of world-system and is developed in this thesis’ conceptual framework. Friedmann mentions monocultures devoted to exportation as a consequence of the core and the peripheries organization, with wheat in Eastern Europe, and a variety of transplanted species, notably sugar, in colonial Hispanic America, which allowed for specialized production and global markets²⁹.

The second food regime is, according to McMichael and Friedmann, more complex and rooted in the organization of the world economy under the United States’ hegemony. They observe in the period following World War II a transnational restructuring of agricultural sectors, occurring mainly through two large complexes: the intensive meat complex and the durable foods complex³⁰. Such a restructuring has been mentioned before in this literature framework when talking about the Green Revolution. The reorganization of global agriculture, powered by the United States, introduced specialized and hybrid crops, and capital-intensive production techniques. What

²⁷ Friedmann, H., & McMichael, P. (1989). Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present. *Sociologia Ruralis*, 29(2), 93–117. pp.95

²⁸ Friedman, H. (2000). *What on Earth is the Modern World-System? Foodgetting and Territory in the Modern Era and Beyond*. *Journal of World-Systems Research*, 6(2), 480-515. pp.481-482

²⁹ Ibid. pp.484-485

³⁰ Friedmann, H., & McMichael, P. (1989). Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present. *Sociologia Ruralis*, 29(2), 93–117. pp.105

characterize the Green Revolution, thus the second food regime, are innovative technologies such as petrochemicals, fertilizers, pesticides, mechanization and hybrid seeds. The consequences are multiple, from heterogeneous class relations of dispossession to contract farming and commercial land concentration³¹. Such are the key elements of the first and second food regimes, influenced greatly by Wallerstein's work to organize historical transformations in a system, with periods of stability connected to a hegemonic power in a cyclical pattern as thoroughly developed in this thesis' conceptual framework.

Other scholars have studied global relations applied to agriculture in a systemic pattern. Giovanni Arrighi elaborated such an historical framing, observing four periods starting in 1870, however with less of an emphasis on an historical-structural framework³². Such a framework is similar to the one used by Wallerstein in his world-systems theory, hence McMichael's and Friedmann's food regimes being more relevant than Arrighi's theory for this thesis.

The scholars Friedmann and McMichael, when conceiving their food regime theory, acknowledge a fundamental transformation of old patterns of international specialization. In past decades, agriculture and food are no longer coherent sectors, lost into a web of inputs and outputs³³. McMichael believes that this transformation of world agriculture is the result of the Green Revolution, and especially the loss of control of the farmer in the agricultural production because of chemical and mechanical inputs, and the revolution of gene technologies. The author mentions bioengineering as responsible for

³¹ McMichael, P., & Friedmann, H. (Eds.). (2012). *Food regimes and agrarian questions*. Fernwood Publishing. pp.75

³² Bernstein, H. (2015, April). *Food regimes and food regime analysis: A selective survey* (Conference Paper No. 1). BRICS Initiatives for Critical Agrarian Studies (BICAS).

³³ Friedmann, H., & McMichael, P. (1989). Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present. *Sociologia Ruralis*, 29(2), 93–117. pp.112

the structural transformation of agricultural, for which the corporate ‘gene giants’, such as Monsanto, created monopolies in entire sectors of the seed market³⁴. McMichael talks about oligarchy in those sectors, even monopoly, which resonates with the concept of hegemony. A few trans-national corporations are able to concentrate, centralize and coordinate global agribusiness operations, and as a result dominate world agriculture. They number ten, exhaustively Monsanto, Bayer, Cargill, Nestle, Syngenta, BASF, Novartis, and ADM³⁵.

Acknowledging the restructuring of world agriculture opens the research to the question of a third food regime. Although McMichael and Friedmann ended their collaboration to the conceptualization of two food regimes, they both individually wrote on a third one. McMichael coins this third one a corporate food regime, structured by the politics of neo-liberalism during and after the 1970s. Such a regime is based on an increasingly and ecologically devastating dependence on fossil fuels, emission of greenhouse gas emissions, degradation of soil which intensifies dependence on fertilizers, and destruction of biodiversity. Another consequence, a social one, is the depletion of cultural and ecological knowledges, which was criticized in the definition of food imperialism by Vandana Shiva. In an economic context, the transformations are characterized by the global deregulation of financial relations, and liberalization creates currency devaluation and corporatization of markets which render farmers vulnerable³⁶. A corporate food regime is at the core of unequal distribution and compromises among states, powerful agrifood corporations and social movements. Food regimes are social systems, just like world-systems, in a sense that it ties together corporations, governments

³⁴ McMichael, P. (2005). Global development and the corporate food regime. *Research in Rural Sociology and Development*, 11, 265–299. pp.285

³⁵ Ibid. pp.292-293

³⁶ Bernstein, H. (2015, April). *Food regimes and food regime analysis: A selective survey* (Conference Paper No. 1). BRICS Initiatives for Critical Agrarian Studies (BICAS).

and individuals through unequal relations³⁷. One inequality resulting from the corporate food regime, and essential to this third system, is the ‘accumulation by dispossession’ which is structurally rooted in the regime with the relational and geographical typology of core, periphery and semi periphery. Accumulation by dispossession is spread across the South, the periphery, through devaluation and privatization of assets³⁸. Such structural mechanisms lead to new movements of opposition, and recenter these around the consequences of the corporate food regime.

C) The corporate food regime and contemporary anti-systemic movements

The third food regime exert further pressure on peripheries, sometimes in the North but rather concentrated in the South with low-cost agricultural production. This geographical divide, between the core and peripheries fosters opposition, protesting against the empowerment of agribusiness corporations at the expense of the disempowerment of farmers³⁹. McMichael formulates these movements of opposition in a sense of the agrarian question, whose recent considerations are dispossession of land control and loss of knowledge of farming as a reproductive necessity. Philip McMichael and Mindi Schneider, in an article published in 2011, coin these circumstances of impoverishment in agricultural producing regions the millennium development crisis⁴⁰. This is similar to what Farshad Araghi calls the ‘peasant question’, in a sense that questions on land rights and ecological farming, and overall food sovereignty,

³⁷ Friedmann, H. (2005). *From Colonialism to Green Capitalism: Social Movements and Emergence of Food Regimes*. In F. H. Buttel & P. D. McMichael (Eds.), *New Directions in the Sociology of Global Development, Research in Rural Sociology and Development, Vol. 11* (pp. 227–264). Emerald Group Publishing. pp.228

³⁸ McMichael, P. (2005). Global development and the corporate food regime. *Research in Rural Sociology and Development*, 11, 265–299.

³⁹ Ibid. pp.282-283

⁴⁰ McMichael, P., & Schneider, M. (2011). Food security politics and the Millennium Development Goals. *Progress in Development Studies*, 11(1), 1–18. pp.120

marginalized during the XXth century are now at the center of opposition movements⁴¹. What motivates those questions and thus counter-movements is the environmental disaster, the climate crisis worrying in regard of the uncertain future. The food sovereignty movement has at heart to, not only protest, but to build alternative ways of farming to reinsert victims of industrial agriculture, the small farmers.

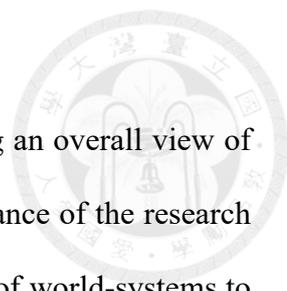
Historically, environmental preoccupations were far from being focused on agriculture, but rather air pollution in the early 1970s. The concerns around agricultural were not environmental but related to food safety and food quality with additives and pesticides incorporated within the industrial food system. In the 1980s and 1990s, outbreaks of diseases such as E. coli trigger consumer movements⁴². But in the 1990s, genetically engineered seeds generate a large international movement. In recent decades, the concerns over agriculture shifted accordingly to the transformations of world agriculture and the transition from the second to the third food regime. The recent movements are anti-systemic, and they appeal to a global demonstration against the corporate trade regime due to apprehensions for the future sustainability of the social and natural world⁴³. Such movements are carried by Via Campesina founded in 1993 in Latin America, regrouping international small farmers and rural workers that advocate for food sovereignty and claim that multinational corporations are the root of these issues⁴⁴. Such movements of opposition will be discussed in the analysis of the empirical research, particularly as one of the sub-questions as they raise questions and threaten the powerful position of corporations, specifically Monsanto as the hegemon.

⁴¹ McMichael, P., & Friedmann, H. (Eds.). (2012). *Food regimes and agrarian questions*. Fernwood Publishing. pp.65

⁴² Friedmann, H. (2005). *From Colonialism to Green Capitalism: Social Movements and Emergence of Food Regimes*. In F. H. Buttel & P. D. McMichael (Eds.), *New Directions in the Sociology of Global Development, Research in Rural Sociology and Development, Vol. 11* (pp. 227–264). Emerald Group Publishing. pp.249

⁴³ McMichael, P. (2005). Global development and the corporate food regime. *Research in Rural Sociology and Development*, 11, 265–299. pp.292

⁴⁴ Ibid. pp.293



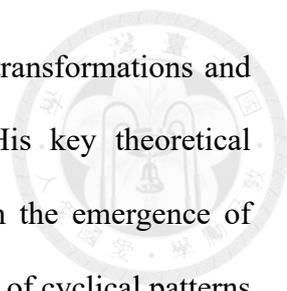
This concludes the literature review, which aims at providing an overall view of the context in which this thesis is written. It also reaffirms the relevance of the research question as it falls within already existing work on the applicability of world-systems to analyze modern world agriculture. Nonetheless, the last part of the literature review focuses on the period of transition in the past decades observed by a few authors like McMichael, and the emergence of a new food regime, a corporate food regime. McMichael did not write extensively on this topic precisely, reflecting on other critical agrarian studies. Although the corporate food regime has been the object of study of some researchers, the existing gap in the literature persists when granting the status of hegemon to an agribusiness corporation. This thesis seeks to cover this topic by focusing the empirical subject on Monsanto, which in terms will allow some more in-depth research on the most recent food system and its possible future.

Section 2: Conceptual Data and Analysis

1: Wallerstein's life, work, and theoretical contributions

A) Introducing the author and his career

Immanuel Wallerstein (1930-2019) devoted his academic career as a sociologist and historian whose work reshaped the study of global systems. Throughout his academic trajectory, he combined rigorous historical scholarship with a theoretical lens, producing work that continues to influence sociology, political science, and International Relations. Immanuel Wallerstein's legacy and contribution to the discipline of International Relations lie in his ability to revitalizing Marxist analysis, reinterpreting and refining his



theories into a framework more applicable to render the historical transformations and global interdependencies of the 20th and early 21st centuries. His key theoretical development consists in his reinterpretation of world history, from the emergence of nation-states in Europe to the present, that he conceptualizes in terms of cyclical patterns that he compares to Kondratieff cycles. He frames his theory within the structure of the modern world-system, for which he defines its limits geographically.

In his view, the study of the process of development should be examined with larger category than country by country, that he coins a world-system. Quoting Fernand Braudel, this world-system is “a world, not the world”⁴⁵, meaning that this system is not global and does not encompass the entire world. This concept is central to the introduction of his analysis, providing the justification for his specific historical reading. While explaining his process of study, he “fait part” of his epistemological standpoint, which is that he needs to analyze social reality from two of its necessary components; historical on the one hand in the sense that every instant is inevitably different and shaped by change, and structural, on the other hand, so as to account for the constraints that influence every transformation.

As his theoretical work is highly influenced by Marx, he defines capitalism and uses it as a lens to view the historical development of the world-system. He departs from the classic case of capitalist ideology that characterizes this system on the noninterference of the state in economic affairs. On the opposite, he identifies capitalism as based on economic gain hoarded in the hands of private entities, while economic loss is alleviated by political entities⁴⁶. Capitalism is not confined within the borders of any single state which means that economic activities take place in a global arena that no political entity

⁴⁵ Wallerstein, I. (2011). *The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (1st ed.). University of California Press. Preface

⁴⁶ Ibid. pp.348

can regulate nor control. Wallerstein explains that this gives capitalists a freedom of maneuver that is built into the structure of the world-system itself, which allows capitalism to keep growing over centuries and maintaining a very imbalanced distribution of its rewards.

Wallerstein develops his key theory in four volumes; the first volume was published in 1974 and the last one in 2011. His aim with this series was to put into writing an analysis of the historical and structural development of the modern world-system, with each book crafted to function on its own while constituting a larger and unified work. Before publishing his series, he began his career as a researcher and author by focusing on Africa during the colonial period. He undertook his fieldwork in multiple African countries to engage directly with non-Western political and social perspectives, and to cultivate a sensitivity to alternative interpretations of social and historical realities. His research paid particular attention to anti-colonial movements, as well as broader anti-systemic ones, which reflect his interest in forces that challenge established global hierarchies that sustained throughout his whole career.

B) The world-systems theory

According to Wallerstein, “a world-system is a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence”⁴⁷, distinguished by the relative self-containment of life within it, and by the fact that its developmental dynamics stem primarily from internal processes. Drawing on his world-systems theory, he identifies the system that characterizes the modern era, relying on capitalism, a variety

⁴⁷ Wallerstein, I. (2011). *The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (1st ed.). University of California Press. pp.347

which he calls a “world-economy”⁴⁸. Such a variety, distinguished by the existence of relatively multiple political systems, is one of the two of world-systems that Wallerstein accounts for, the second being world empires in which there is a single political system over most of the area.

Although the world-system theory will not be at the center of this thesis’ analysis, it is essential to get a grasp at the basics of this theory to comprehend better the underpinnings of the central theoretical object here, hegemony. There are many components that make a world-system, which Wallerstein develops throughout his series and many other essays. One of the first characteristics must be the autonomous subsistence economies that can also be found in regular tribute-demanding system. In the case of the modern-world system, the capitalist world-economy was built on a worldwide division of labor. It is in this context that emerged the typology of the three zones, the core, the semiperiphery, and the periphery, in which specific economic roles were assigned. The Marxist class structures are directly linked to these various zones, implying different modes of labor control and an economic profit unequally spread in the system. Furthermore, political action was largely confined to states in the emergence of the modern world-system, and their organization reflected their distinct roles in the world-economy; the core states leveraging the highest degree of centralization. Drawing on the class system emblematic of Marxist theories, Wallerstein acknowledges the emergence, consolidation and political roles of such classes as an inevitable element of the world-system as a social system.

Since the early developments of the capitalist world-economy, the scholar observed three main evolutions: it followed a global expansion until now encompassing the entire

⁴⁸ Ibid. pp.347

world; the system experiences recurring cycles of expansion and contraction with changes in which regions occupy core, semi-peripheral and peripheral positions, along with rises and falls of hegemonies; the world-economy has undergone structural changes which still evolve to this day, some of them being technological progress, processes of industrialization and proletarianization as well as organized political resistance to the system.

The role of the state in a capitalist world-economy has been central in Wallerstein's theorization, especially in regards of its relations with other states and owner-producers. The latter wish from the state to help them to manipulate the market, either restricting or expanding its autonomy and flexibility, if they maintain or gain profits. They also seek surplus extraction from the state's involvement, or at least to secure a greater share of the surplus that owner-producers could achieve independently.

Drawing back on the distinction between zones of integration and centralization, a significant process is the one when external arena of the world-economy becomes part of the periphery, in a period of incorporation⁴⁹. This zone follows three successive moments, from being in the external arena, to being incorporated and at last being peripheralized. An essential point Wallerstein makes is that this process of incorporation is never initiated by the said zone, but rather at the expense of the need fostered by internal pressures for the world-economy to expand. The geographical nature of the zone distinction is central in the world-system theory, with the core zone concentrating the economic activities of the more lucrative nodes. Similarly, the peripheral zone accumulates the less profitable nodes, with their economic activity rather geographically dispersed. Wallerstein specifies

⁴⁹ Wallerstein, I. M. (2011). *The Modern World-System III: The Second Era of Great Expansion of the Capitalist World-Economy, 1730s–1840s*. University of California Press. pp.205

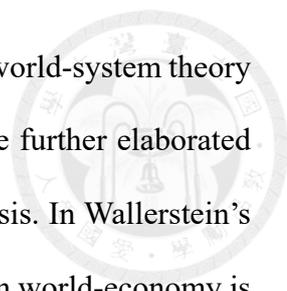
these terms of core, peripheral and semi-peripheral as rather relational terms than their spatial definition.

The last element about Wallerstein's world-system theory discuss in this part is about his projection of the future of such system. In the four volumes, he does not elaborate much on the subject, but he shares nonetheless in other writings a few structural transformations of socioeconomic underpinnings of the world-system which challenges the long-term viability of such a system. From the depletion of the world pool of available cheap labor, the growing pressure of the middle strata of social groups, to the widening demographic gap amplifying the economic divide between North and South, these are all symptoms of a structural crisis of the capitalist world-economy. He also mentions the ecological crisis, which generates acute economic difficulties for the world-system and ultimately poses the question of the sustainability and endurance of such a system⁵⁰. Considering such transformations, Wallerstein projects that, for the next fifty years, the modern world-system will face a profound moral and institutional crisis, which he describes as a state of 'chaos' in his own words, ultimately leading to the end of the system as it currently exists and the emergence of another historical system, a new social order.

C) Rationale for choosing Wallerstein's theory

Immanuel Wallerstein's theory will be central to this thesis, as it aims to test its applicability and examine its relevance in a field not directly tied to International Relations, specifically in the one of agrobusiness and the power granted to a giant of this industry, Monsanto. Choosing Wallerstein's theory is by no means arbitrary and is motivated essentially by certain factors listed in this part. These supplement the prevailing

⁵⁰ Wallerstein, I. (2000). *The essential Wallerstein*. The New Press. pp.469



motivation, the theoretical orientation of this dissertation toward the world-system theory entirely, which was already discussed in the first chapter and will be further elaborated upon in the concluding discussions on research at the end of this thesis. In Wallerstein's modern world-system historical reading, the emergence of a European world-economy is coordinated with the expansion of commerce and the rise of capitalist agriculture, all beginning in the XVIth century. Indeed, agriculture plays a central role in understanding the historical development of the world-system. Wallerstein quotes B. H. Slicher van Bath, who identifies different relations to agriculture, with a key turning point around 1150 A. D., when Western Europe shifted from largely self-sufficient production to a stage of broader agricultural production that supports the wider economy, a stage that continues today⁵¹.

In his historical reading of the rise of the modern world-system, Wallerstein also connects agriculture to politics, asserting that it carries an imperialist dimension. Hence, the process of agricultural innovation fueled rather than eliminated the necessity for expansion⁵². Dwelling on that, while Europe's initial expansion may have been driven by food needs, the actual benefits went far beyond that. The expansion altered global ecology, and due to the way the emerging European world-economy was organized, these ecological and economic gains disproportionately favored Europe over other regions. Thus, Europe's historical expansion and colonization wave was, according to Wallerstein, closely tied to food needs and agricultural development. It makes it entirely relevant to explore how similar dynamics operate today, and manifest within a fundamentally altered world-economy.

⁵¹ Wallerstein, I. (2011). *The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (1st ed.). University of California Press. pp.18

⁵² Ibid. pp.42

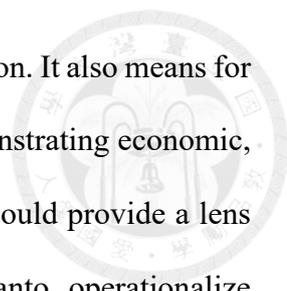
2: Conceptualizing hegemony and power in defining the object of research



This section directly tackles Wallerstein’s concepts of hegemony and power, as articulated within his world-systems theory. The framework presented here is based on a thorough analysis of his works, drawing extensively on his writings on the historical development of the world-system. To better frame the research and answer the research question, it implied working on the conceptual framework for this thesis. This led to the formulation of four sub-questions, which help to clarify and operationalize the main research question, making it more precise and guiding the analysis. These sub-questions will guide the investigation of the research question, with answers sought through the empirical research. They also form the basis for structuring the chapters, with each subquestion being addressed and analyzed individually before discussing the overall findings and drawing broader reflections.

The first sub-question examines how Monsanto consolidates power across multiple domains, drawing on Wallerstein’s concept of hegemony. Hegemony is not a fixed state but a position on a continuum of competitive relations, achieved when an actor demonstrates marked superiority in key productive and economic arenas, enabling it to establish and maintain “the rules of the game”⁵³. According to the scholar, a hegemonic power is able to shape the rules of global trade, production, and finance, and as such benefiting disproportionately from efficiency in production and the free flow of goods, capital, and resources. For Monsanto, this superiority is reflected in its efficiency and

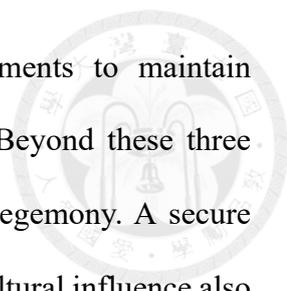
⁵³ Wallerstein, I. (1996). The inter-state structure of the modern world-system. In S. Smith, K. Booth, & M. Zalewski (Eds.), *International Theory* (1st ed., pp. 87–107). Cambridge University Press.



influence across agro-industrial production and commercial distribution. It also means for Monsanto to be able to integrate multiple spheres of influence, demonstrating economic, political and ideological strategies. Using Wallerstein's framework could provide a lens for understanding how modern corporate actors, in this case Monsanto, operationalize multi-domain influence, reflecting a parallel process to historical hegemonic states. Drawing on this idea, the first sub-question is framed as follows: **How does Monsanto integrate economic, political, and ideological strategies to sustain corporate dominance?**

The second sub-question, “**How do Monsanto's internal strategies reflect Wallerstein's mechanisms for maintaining hegemony?**” moves from the integrated corporate strategy to the specific mechanisms through which hegemony is sustained. Wallerstein describes this hegemony as maintained through a combination of economic, political, ideological and coercive mechanisms, but essentially through three major instances or, in his own terms, analogies⁵⁴. The first one is the economic advantage, which must be simultaneous across the three primary domains of production, commerce, and finance, ensuring that the hegemonic actor maintains superiority in core operations and overall, the whole spectrum of economic activities. The second one focuses on ideological and policy tools, for which Wallerstein gives the example of the hegemony of the United States, that promoted liberal principles, market freedom, and institutional frameworks, all these serving to reinforce dominance and allowing for selective intervention to protect interests. The third and last one is the projection of power and coercion, based on military strength in the context of world-system and state as principal actors. In the corporate context, this is much more difficult to assess, but this research will look at coercive such

⁵⁴ Wallerstein, I. (1983). The three instances of hegemony in the history of the capitalist world-economy. *International Journal of Comparative Sociology*, 24(1-2), 100-108.

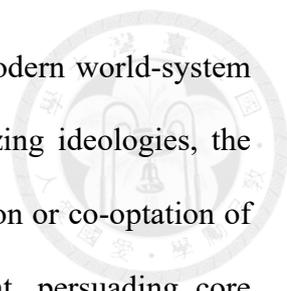


as the deployment of legal, technological, and financial instruments to maintain competitive advantage and defend itself against potential threats. Beyond these three pillars, Wallerstein identifies additional mechanisms that sustain hegemony. A secure “home front” is critical, ensuring stability within the core entity⁵⁵. Cultural influence also plays a role, as hegemonic actors can shape technological standards, knowledge, and practices. Wallerstein nevertheless asserts full cultural dominance over other core actors to be unlikely. Ultimately, sustaining hegemony demands constant adjustment to the actions of competing powers, through measures he details in the second volume of the modern world-system series, such as administrative centralization, strategic partnerships and influence over regulatory frameworks. This reflects the persistent and fragile nature of dominant positions, or in other words hegemony, in the world-system.

In his modern world-system series, Wallerstein identifies only a few periods in the history of the modern world-system during which true hegemony has existed. He highlights first the Dutch dominance in the XVIIth century, the British one in the XIXth century, and the United States in the XXth century as true hegemonies. These few examples, in a period of over four centuries, show that only a small set of powers were able, for a limited period of time, to achieve overarching economic, political, and ideological influence over the system, hence the three analogies. These phases of hegemony illustrate the temporary dominant positions and underscore the continual rivalry and structural shifts that define the world-system, and thus the cyclical pattern.

Following the analysis of Monsanto’s integrated strategies, it is essential to explore how the company manages resistance. In Wallerstein’s framework, opposition is an inevitable feature of the world-system, and the maintenance of hegemony depends on its containment. He identifies three principal mechanisms in institutional domains for

⁵⁵ Wallerstein, I. (2011). *The Modern World-System IV: Centrist Liberalism Triumphant, 1789–1914* (1st ed.). University of California Press. pp.43

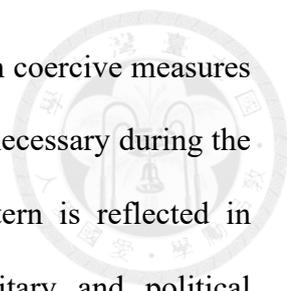


managing what he calls systemic threats, which in the historical modern world-system were the dangers of democratization: the construction of legitimizing ideologies, the reorganization and control of knowledge systems, and the suppression or co-optation of anti-systemic movements⁵⁶. Ideology functions to secure consent, persuading core populations and allied actors to accept the costs of dominance while instilling doubt among those who challenge the system. Control also extends to labor and social hierarchies, where unequal inclusion in the system ensures the availability of labor and political compliance, essentially through the division of labor. This role attribution enables to preserve the overall structure of the system. A third sub-question arises from these elements: **What tactics does Monsanto employ to neutralize and contain anti-systemic challenges?** Wallerstein observes that racism functioned not solely as exclusion but as a way to justify subordinated inclusion in labor and political systems⁵⁷. Resistance for the hegemonic power is thus managed through a combination of persuasion, incentives, sanctions, and strategic deployment of expertise and scientific authority. Monsanto's practices can be understood as applying similar mechanisms, stabilizing its position, shaping knowledge and neutralizing challenges, which illustrate the relevance of Wallerstein's concept of hegemonic maintenance.

The fourth and final sub-question is the following: **What internal acknowledgments indicate that Monsanto's hegemonic position is under strain?** In Wallerstein's world-systems theory, a major dimension is the inherent cyclical pattern of such a system, and of hegemony. Periods of dominance inevitably contain the factors that lead to their eventual decline. In his analysis, Wallerstein suggests that the very policies and strategies that prolong economic and political advantage can simultaneously

⁵⁶ Wallerstein, I. (1996). The inter-state structure of the modern world-system. In S. Smith, K. Booth, & M. Zalewski (Eds.), *International Theory* (1st ed., pp. 87–107). Cambridge University Press. pp.93

⁵⁷ Ibid. pp.97



undermine them over time. In historical hegemonies, overreliance on coercive measures can delegitimize authority even when temporarily effective. Rarely necessary during the peak of hegemony, they become increasingly frequent. This pattern is reflected in Wallerstein's observation that the increasingly reliance on military and political interventions from the hegemon inadvertently encourages rivals to test its dominance, thereby accelerating the process of decline⁵⁸. Economically, the hegemon's efforts to maintain quasi-monopolistic control over markets and production eventually strengthen allies and competitors, which reduces the relative advantage that initially sustained its dominance. In the context of Monsanto, the accumulation of lawsuits, regulatory pressures, and public criticism may signal that its position may be under strain, which will be the object of the final sub-question and element of the empirical research.

These four sub-questions, built from a thorough reading of Wallerstein's theory of world-systems, enabled the drafting of the conceptual framework, essential for this thesis as it sets the conditions for the empirical research and the overall structure of this work. Not exactly exhaustive to Wallerstein's theoretical definition of hegemony, these sub-questions address the main elements drawn from his works, so that it creates relevant and thoroughly developed categories. These are sufficiently representative to provide a reliable conceptual framework for analyzing the applicability of Wallerstein's theory, and introduces the chapter that follows, focused on data and analysis reflections.

⁵⁸ Wallerstein, I. M. (2011). *The Modern World-System II: Mercantilism and the consolidation of the European world-economy, 1600–1750*. University of California Press. Preface

CHAPTER 3: DATA AND METHOD

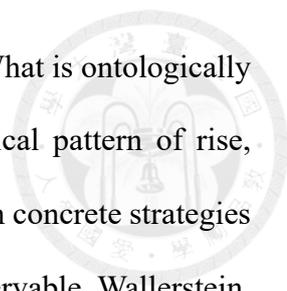


This third chapter aims at introducing the analysis, building upon the foundation laid in the previous chapter. It also serves as a transitive part to better understand how the thesis' interests are being empirically addressed and analyzed. It is necessary to unveil the chosen research methods, as well as the process of data selection sampling, and finally analytical writing. The objective is to provide all relevant informant to apprehend the analytical chapters.

Section 1: Research Methods

1: Ontological and epistemological perspectives

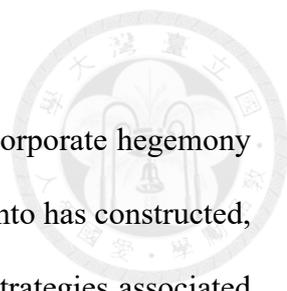
The following part will introduce the methodological elements of this thesis, starting with the ontological and epistemological perspectives to better explain the research area. Defining ontologically and epistemologically the elements of this research enable a better grasp at the aim of the research and making sure that it is all coherent. The ontological perspective refers to the nature of the phenomena or entities, in broader terms the fundamental characteristics of the reality, investigated. In this case, the phenomenon under investigation is hegemony as a social reality, observed within the capitalist world-economy as theorized by Wallerstein. What matters are the power relations between corporations, states and resistance movement. In this social reality, Monsanto is a



hegemonic actor that embodies and reflects the logics it underpins. What is ontologically analyzed is the processus underlying the hegemony, with its cyclical pattern of rise, maintenance, opposition and decline. Thus, hegemony is embodied in concrete strategies and struggles, with Monsanto serving as a case that makes these observable. Wallerstein, when elaborating the concept of hegemony, specifies his ontological setting as such: the capitalist world-economy implies that is a system with internal dynamics, and is framed within the concept of historical time, meaning that it is constantly evolving and meant to disappear⁵⁹. This is also the perspective chosen to tackle this thesis, as the aim is to verify the applicability of Wallerstein's theory with a different subject.

The epistemological perspective refers to the knowledge or evidence of the social reality investigated. Defining such a stance implies to look at what counts as knowledge, and what is the relationship between the researcher and the subject. In this thesis, internal documents are the knowledge sources, more exactly internal emails revealing Monsanto's self-understanding and its strategies. These emails were revealed with other documents such as text messages, company reports and other memoranda in the case of pre-trial investigation under the name of Monsanto Papers. These were acquired by Gary Ruskin and Carey Gillam from the nonprofit research group U.S. Right To Know (USRTK) that helps researchers, journalists and the public access corporate and governmental information usually classified. In the case of the Monsanto Papers, these internal documents were used in court to expose how Monsanto knew that their bestseller product, the herbicide Roundup, was carcinogenic. It also disclosed the strategies the firm developed to cancel all kinds of opposition to their product, especially scientists and journalists, which will be further emphasized in the analysis.

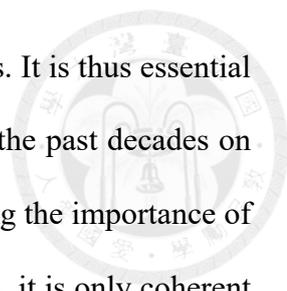
⁵⁹ Wallerstein, I. (1983). The three instances of hegemony in the history of the capitalist world-economy. *International Journal of Comparative Sociology*, 24(1-2), 100-108. pp.100



Hence, the broad substantive area my research will focus on is corporate hegemony in the global agro-industrial system. It aims at analyzing how Monsanto has constructed, maintained and defended its hegemonic position by looking at the strategies associated with its bestseller product, Roundup, developed in the 1970s. The goal is to look at how such dominance is asserted across economic, political and ideological dimensions within Wallerstein's framework, to continue the work started by scholars such as Friedmann or McMichael to use theories of International Relations but moving the focus to agribusinesses. It is essential that the research area is ontologically meaningful and epistemologically workable. The two prior paragraphs showed that the thesis focuses on concrete actors like Monsanto but also regulators and social movements within complex systemic structures, while viewing corporate power as an observable social phenomenon. The use of internal emails as empirical evidence, especially considering the impact these had on Monsanto's public image, are coherent to the research. The research also relies on theoretical setting and is structured as so to better interpret meaning and patterns, which are essential mechanisms of a system according to Wallerstein⁶⁰.

Drawing on the research question, the objective with this thesis must be clearly enunciated: showing the relevance and applicability of Wallerstein's theory of hegemony outside its usual International Relations context, using Monsanto as a case. The goal is to put forward some theoretical contribution to the field of International Relations, but also to the political and economic study of agribusiness. Using Monsanto is not a hazardous case: the firm concentrates the dynamics of hegemony in a corporate setting, while also offering empirical access to internal communications. Looking through the existing literature, especially what Wallerstein wrote about the future of the modern world-system,

⁶⁰ Wallerstein, I. (1983). The three instances of hegemony in the history of the capitalist world-economy. *International Journal of Comparative Sociology*, 24(1-2), 100-108. pp.100

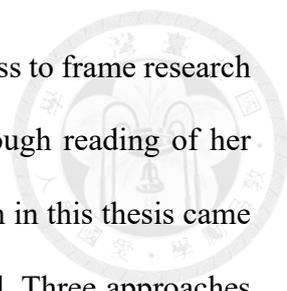


it appeared that the world is suffering from structural transformations. It is thus essential to use Wallerstein's theory in a more recent setting, especially over the past decades on which he has been less extensively developing his theory. Considering the importance of the agricultural sphere in the emergence of the modern world-system, it is only coherent to look at the same sphere in the most recent historical context, with some of the most striking transformations since the origins of the modern world-system. The literature review had at heart to focus on the application of the world-system theory in the XXth century, with the remarkable work of Friedmann and McMichael. In this thesis, the research will undertake to apply Wallerstein's theory in a closer form to its original form, in the sense that there will not be a theory derived from Wallerstein's, like the two scholars did with their food regime theory.

Considering the objectives of this research, the thesis will inquire: **In what ways does Monsanto's behavior in agribusiness reflect and assess Wallerstein's hegemony in his world-systems theory?** This research question is completed throughout the thesis with four sub-questions that frame the research in a specific way as to highlight stages of rise, maintenance, resistance and decline of the hegemonic position. This chapter will then go on with the method and data selection to better explain the structure and process of tackling the research question.

2: Methodology: Cross-section and categorical indexing

The method in this thesis, from reflecting on the ontological and epistemological perspectives to data selection and method framing has been thought following Jennifer

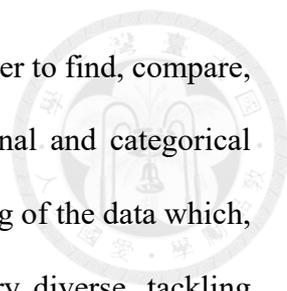


Mason's work on qualitative data⁶¹, which offer a very detailed process to frame research in social sciences with qualitative empirical evidence. With a thorough reading of her work, as well as additional writings on methods, the approach chosen in this thesis came as the best considering other ones, especially with the data analyzed. Three approaches were put forward as to analyze and organize qualitative data: cross-sectional and categorical indexing, non-cross-sectional data organization and at last the use of charts and diagrams. Non-cross-sectional data organization is based on a narrative and chronological form. This could have been useful considering the emphasize given to the cyclical pattern of hegemony. However, such organization would have not been sufficient to tackle the extent of the research question, neither of the four sub-questions. Plus, especially regarding strategies to counter opposition, it is essential to highlight thematic comparison across different contexts, which would have been difficult to attempt with such an approach.

Furthermore, the use of charts and diagrams appears very useful to organize qualitative data as it focuses on visualization, which is the researcher's job to highlight patterns and connections from the reading of data. In the case of the data used in this research, the reviewing of internal emails relies highly on interpretation of the data, with the researcher's bias greatly involved in the reflexive reading. Considering this, the approach with charts and diagrams would have appeared as containing flaws that are not compatible with the approach.

Thus, the best fitted approach out of the three proposed by Mason is cross-sectional and categorical indexing. It consists in indexing the whole set of data according to common principles and measures. These will follow the four sub-questions and will be

⁶¹ Mason, J. (2002). *Qualitative researching* (2nd ed.). SAGE Publications.

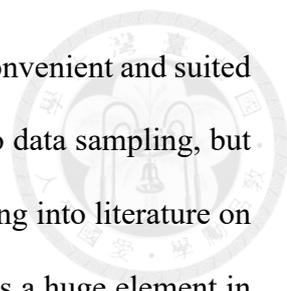


done by inserting category labels directly into the data to make it easier to find, compare, and analyze specific themes across the dataset. Using cross-sectional and categorical indexing method enable to leave room for interpretation in the reading of the data which, although it shares the same nature of document as emails, are very diverse, tackling different subjects. Interpretation is thus a key in the reading of the data to make sense into the whole of the dataset. A very important aspect of the data chosen is that it is private and internal to the company, thus not formulated for the public eye. Looking at the sense of the words, the amount of time they are used, and the overall thematic compositions of these emails⁶² are the reasons why cross-sectional and categorical indexing is the chosen method for the organization of the qualitative data used in this research. There are additional reasons for which this method is the best suited, especially when taking into consideration data selection and sampling, which are at the core of the following part.

3: Data selection and sampling

To better decide on data selection and sampling, it was primordial to focus first by charting links between methods and research questions. It also meant to look at what data sources and methods of data generation were first, available, and second appropriate. Furthermore, it was essential to cover the ontological and epistemological perspectives to better understand how the selected data could be used. Looking at elements of background, such as Wallerstein's theory was not of much help, since he focused his writings and framing his theory with a very different method: he used a very historical approach, which he expanded through four different volumes, which represented by adding all the pages

⁶² Bonnafous, S., & Tournier, M. (1995). Analyse du discours, lexicométrie, communication et politique. *Langages*, 29(117), 67–81.



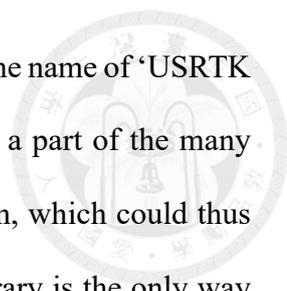
more than a thousand ones. Such a method was thus far from being convenient and suited for this thesis. The choice of the method was done complementary to data sampling, but the data sources were selected prior to this stage. Indeed, when looking into literature on Monsanto, the topic of Monsanto Papers came quite rapidly, as it was a huge element in the trials against Monsanto, and especially a major crisis to their public image. These documents were declassified by a Californian federal court starting in 2017. There is also substantive documentation on Roundup, and all the consequences of this product in the past five decades. Finding the internal documents was also rather easy as they are accessible on the internet, whether on law firms' websites⁶³, or even more exhaustively, on the U.S. Right To Know website⁶⁴. Such documents were very interesting as they give direct access to corporate reasoning, with unfiltered because it does not involve public image such as PR statements or official reports. They are thus much more relevant to the application of Wallerstein's theory and are empirical evidence worth to use in a thesis as they imply a great work of interpretation from the researcher.

However, the Monsanto Papers are hundreds of thousands of confidential documents, expanding on decades but more focused on the 2000s and on. It was too much of a dataset, especially considering it tackled an extensive list of topics about Monsanto. It thus needed to shrink to a manageable amount of document to be analyzed, but also to be relevant to the research and ontologically consistent. Plus, on the USRTK websites, these documents are made accessible with little to no sorting, which added complexity to the task. It was then that the Industry Documents Library (IDL), hosted by the University of California San Francisco (UCSF), proved to be the most effective means of selecting data⁶⁵. This library serves as a digital archive, with millions of documents obtained from industries

⁶³ Wisner Baum. (n.d.). *Monsanto Papers* | *Declassified secret documents*.

⁶⁴ U.S. Right to Know. (n.d.). *Monsanto Papers*.

⁶⁵ U.S. Right to Know. (n.d.). *USRTK Agrichemical Collection*. UCSF Industry Documents Library.



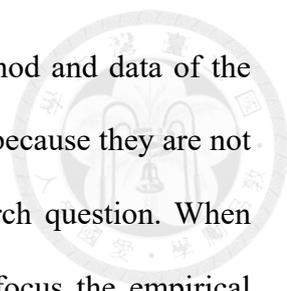
which influence public health. This library houses a collection under the name of ‘USRTK Agrichemical Collection’ with a total of 1857 documents. It is only a part of the many more internal documents obtained by Carey Gillam and Gary Ruskin, which could thus be considered a flaw for the research. However, using the online library is the only way to conduct the research, as it enables to choose settings when sampling the data, which was not possible by looking through all the documents hosted on the USRTK website. This may thus be considered as a limitation to the research, but it is inevitable when doing research: when sampling the data, having to choose some settings would have also constituted limitation to the research. Still, it must be accounted for that there is no knowledge on what the selecting process for the University of California San Francisco was to choose to upload these documents on their virtual library rather than others. What is important therefore is to acknowledge this limitation and consider what it could mean for the research. In this case, not being able to look at all documents from the Monsanto Papers can only mean that some probably significant elements will be missing from the research. However, the dataset still appears to be coherent with the research question and subquestions, and extensive enough to cover many topics and elements from internal communications.

These documents are internal emails, memos, reports and other materials created or received by either industry staff from Monsanto, Dow, Syngenta, Ketchum, Bayer and the Council for Biotechnology Information, or individuals working within the Environmental Protection Agency, the Food and Drug Administration and the U.S. Department of Agriculture. These documents address issues and implicate actors based in the United States, or sometimes Canada and other countries referenced once or twice but confined geographically as the USRTK operates in the area. Furthermore, Monsanto is a company founded in the United States, with its headquarters in Saint Louis, Missouri.

As such, it is by using the IDL of the UCSF that the data was sampled and thus enable the conduct of the research. After considering the multitude of actors involved in these documents, it is also worth to mention the broad topics, from pesticides, genetically modified organisms (GMOs) and glyphosate to key front groups. Plus, the documents are covering a period from 1964 to 2018. It is essential for the sake of this research to sample the dataset, although it has already been sampled from the whole set to only the documents added to the online library.

Before delving into sampling, it must be emphasized that evaluating and choosing the data sources involves questioning the ethics of the choice of data. Mason explains that the researcher needs to ask certain questions before making ethical decisions, such as whether the criteria used to make decisions are good enough in relation to the complex interests identified⁶⁶. In the case of this research, the data used are confidential sources from Monsanto and others cited just before. These are confidential emails, hence associated to the name of a correspondent to another. It must be clarified again that these internal documents are made public, and they have already been used in public settings, such as trials. Nothing entirely private is thus revealed in this thesis as the information can be found by whoever is interested in the case of the Monsanto Papers. Plus, the thesis will not discuss individuals, neither engage their responsibility as themselves, but rather look at what their position and role are, looking at corporations and institutions as entities and objects of the research. In conclusion, using this source of data initiates questions on ethical decisions, but it appears that the dataset is the best to frame this research and is not harmful to any individual.

⁶⁶ Mason, J. (2002). *Qualitative researching* (2nd ed.). SAGE Publications. pp.99-101

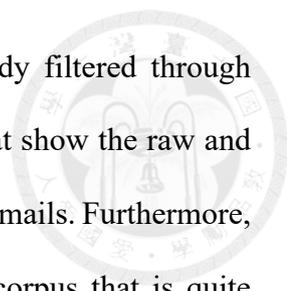


Evaluating data sources is also essential when framing the method and data of the research. By asking the right questions, some sources are dismissed because they are not practical of using, or they will not say much to answer the research question. When evaluating data sources for this thesis, it was first considered to focus the empirical analysis on the public image strategy of Monsanto. This was motivated when reading about their campaign ‘Let Nothing Go’, handled in Europe by the consulting agency in public affairs FleishmanHillard⁶⁷. This communication and lobbying agency is very influential in Brussels, in European institutions. The link with Monsanto runs deep as both of their historic headquarters are located in Saint-Louis, Missouri, in the United States. Monsanto being one of their most significant clients, they thus had to rise to the task assigned. Indeed, the agency’s work consisted in launching a massive campaign on social medias and information websites to answer each comment attacking publicly Monsanto. FleishmannHillard also worked at instilling the idea that glyphosate, the principal active in Roundup, was important and necessary for farmers, thus trying to reverse European laws on this herbicide. The topic of Fleishmann Hillard will be further mentioned in the analysis, as it is a very essential part of Monsanto’s strategies. However, when evaluating data sources, it appeared to be too deviated from what was intended with the research, and especially in relation to the research question. Indeed, FleishmannHillard is a peripheral actor in Monsanto’s strategies, only a subcontractor. It is also too narrow as it only represents a slice of Monsanto’s resistance efforts, so it would only focus on one of the four sub-questions, and just partially answer it. Choosing FleishmannHillard as an object of study, although it could have been interesting, would have also meant to completely change the research interests and the focus of the study.

⁶⁷ Mediapart. (2019, 29 août). Enquête sur FleishmanHillard, mercenaire du lobbying à Bruxelles. *Mediapart*.

The broader hegemonic maintenance and decline dynamics, that Wallerstein's theory emphasizes, would have been out of the picture. These are the reasons why, although considered at some point, the data sources covering Fleishamman Hillard's work for Monsanto were rapidly set aside.

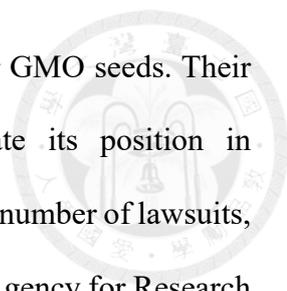
After reviewing the evaluation of data sources, it appeared that focusing on the Monsanto Papers to highlight the hegemonic pattern of Monsanto in agribusiness was by far the best way to conduct research. However, as mentioned previously in this section, the documents from the USRTK agrichemical collection amounted 1857 documents, and covered a broad period and extent of topics related to Monsanto and others. Here came the sampling strategy put in place to better frame the research. Such work was guided by Mason's writing on qualitative data, as she detailed a step-by-step process to get a coherent sample from the dataset. She explained that the data sources relate to a wider population or universe, so the sample needed to be chosen meaningfully in consideration with that wider context. It must be done accordingly to rationale choices, by analyzing the relationship being established or already existing between the sample and the wider universe. In that case, the choice made for this thesis was to select one type of document, emails, when it could have been articles, photographs, letters and tens more types of documents in the collection. Such a choice was motivated by the epistemological coherence first, as emails embody the strategic consciousness of hegemony in practice by Monsanto, an unfiltered discourse that expose the internal logic of the company rather than polished public documents. They reveal how decisions were made, and not just their outcomes, and especially considering the resistance management which is tangible only when having direct access to managers coordinating strategies. Thus, press releases and policy reports are too much constructed to face the public to be epistemologically relevant



to the research. Additionally, court and legal documents are already filtered through lawyers. For the researcher to do the finest work, it must be data that show the raw and internal reasoning of the corporation, which here are without a doubt emails. Furthermore, when making thematic connections, it is essential to constitute a corpus that is quite voluminous and homogeneous, with similar types of documents so it enables some comparisons not too farfetched as well as enough text data to analyze⁶⁸. The number of emails contained in the collection on the IDL amounts to 1408, which still is too much of a dataset. This is when the second sampling choice had to be done.

Mason explains that there are different ways to sample, according to the whatever is the objective with the research. She explains that there are three main reasons as to sample: representationally, illustratively or evocatively, and strategically. The first way to sample refers to choose a sample that is considered representative enough of the wider universe, and to have a reciprocity. The second one implies that it does not claim to represent the wider universe, but still shows an example of how it could be in the universe. The last one is the one chosen for this thesis: in Masons' words, sampling strategically means that the sample is designed to encapsulate a relevant range in relation to the wider universe, but the prime objective is not to represent it directly. Still, the relationship between the sample and the wider universe is neither accidental nor opportunistic, in the sense that it chooses to exclude elements that might be inconvenient to the analysis. Instead, the sample focuses on one of the brands and products developed by Monsanto: Roundup. Roundup, developed with glyphosate, is a cornerstone in agrochemicals and the bestseller for Monsanto. Its development was revolutionary for Monsanto, and it became the symbol of the company. As a result, the marketisation of the herbicide generated billions in

⁶⁸ Baillat, A., Emprin, F., & Ramel, F. (2016). Chapitre 12 - Des mots et des discours. *Dans* A. Baillat, F. Emprin, & F. Ramel (Éds.), *Les politiques publiques de l'environnement : Une analyse critique* (pp. 227–246). Presses de Sciences Po.

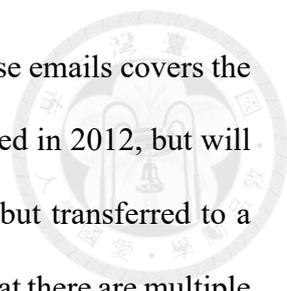


revenue and enabled Monsanto to develop by-products such as their GMO seeds. Their bestseller product allowed Monsanto to expand and consolidate its position in agribusiness. It is also a very contested product, as it triggered a great number of lawsuits, opposition movements and NGO campaigns. Plus, the International Agency for Research on Cancer (IARC) created by the World Health Organization classified in March 2015 glyphosate as probably carcinogenic to humans. The contestation revolving around glyphosate has been very present in the medias. Specifically, the Monsanto Papers contain extensive internal correspondence on this very product: 226 files of documents in the USRTK agrichemical collection mention Roundup, of which 133 are emails. Focusing on Roundup would fit the best to the theoretical framework drawn from Wallerstein's hegemony, as it means looking for knowledge, ideology and containment of resistance. Other Monsanto products, such as other herbicides or Bt crops, although important products for the company, would be less relevant to the analysis as they do not carry the same symbolic and material weight as Roundup for adequately answering the research question. Still, the content of emails does not revolve only around Roundup. Indeed, many emails mention to a greater extent genetically modified organisms (GMOs) because these are related topics. As Gilles-Éric Séralini explains, Roundup is inherent to GMOs as these crops have been engineered to absorb and incorporate the herbicide to be rendered tolerant to Roundup⁶⁹. For all these reasons, the thesis will use a strategical sample from the Monsanto Papers available on the IDL, with a specific focus on emails in relation to Roundup. Yet, Roundup will not be at the center of these emails: it only means that the IDL categorized these documents as related to Roundup, but they can very well mention

⁶⁹ Lucchese, V. (2023, 1er septembre). Gilles-Éric Séralini : « Qui va vérifier que Monsanto ne fraude pas ? » *Reporterre*.

other topics, such as GMOs. Following these criteria, the sample amounts to 133 documents worth of research.

Lastly, for the sake of the relevance of the research, the sample is framed in time. The period chosen is from 2014 to the last email on the IDL in the USRTK agrichemical collection, dated on September 05, 2017. This timeframe is motivated by several reasons which are as follow. It was almost mandatory to limit to a certain timespan to properly analyze without being lost in the abundance of documents. It was also necessary to for the documents to have a date so the evidence can be used to reveal cyclical pattern, which set aside a few emails. The immense of majority of emails are dated from the 2010s, so using emails prior to this decade would not appear sufficient as it would for certain decades amount to less than one per year. The period from 2014 to late 2017 corresponds to a peak in the controversy around Roundup, as the IARC classified in March 2015 as probably carcinogenic. From 2016 on to 2018, regulatory debates around the herbicide intensified, as lawsuits multiplied. Emails in this window capture Monsanto under pressure, at a moment when hegemonic maintenance and decline are most visible. After 2018, emails are no longer accessible, or rather limited due to Bayer's acquisition and ongoing litigation. The 63 documents, classified as emails on the library but sometimes being completed in the same file with other documents, compose the corpus as a relevant sample to analyze strategically Monsanto's hegemony. The dataset is rich enough for depth, while also feasible for close reading and interpretation. Furthermore, there is an internal coherence of the dataset, as reducing the window period allows to form a consistent corpus with the same issues, set of actors and continuous exchanges to trace evolving strategies. With this chosen period, it enables the research to look for mechanisms and contradictions leading to decline, which are core elements to the cyclical pattern emphasized by Wallerstein. Some elements need to be discussed, so that they are



considered for the characterization of the dataset. The majority of these emails covers the period of 2014. Additionally, there are two emails that were exchanged in 2012, but will be analyzed, with the reason that they were emails written in 2012 but transferred to a new recipient in 2015. From the reading of the data, what appears is that there are multiple names censored in the documents, and to a lesser extent some content. It does not appear across the whole dataset, but rather confined to emails dating from 2016 onwards. To finish this part, it seems necessary to add that there are no availability restrictions on the documents, so that the criteria for sampling go as follow: there are emails mentioning the brand Roundup, in a timeframe from 2014 to 2017, with no availability restrictions from the USRTK agrichemical collection in the Industry Documents Library of the University of California San Francisco.

Section 2: Data Analysis

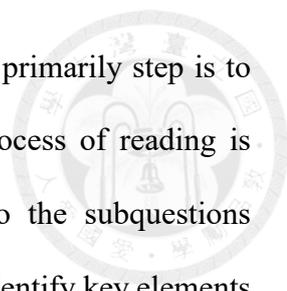
1: Method of document analysis

After developing the process of choice of the method and the constitution of the corpus, this second section focuses on the method applied to the document analysis, or how to make it make sense. The use of documents suggests a specific way of using them. The ontological perspective in this thesis signifies that the emails are a meaningful constituent of the hegemony as social reality. They are relevant elements to understand the strategies and the internal self-representation of Monsanto in the agribusiness. It is also the only available and accessible form of internal communication for research, as these were made public and do not put the researcher in a position of exposing its research or being ethically questionable. Knowing the existence of such documents, it would have

been a curious decision to not use Monsanto Papers as material of research, when they present many valid points to be used. In the case of this study, the data is composed of specific expressions, that are either reference to certain elements of research or fall under a specific lexical field⁷⁰.

The method followed to analyze the data relies on what the evidence is meant to show. Mason lists three cases in which the data can be considered as evidence to the research. The first one is about validity, which means that what is observed and identified in the research is exactly what is written in the results. It can also be about generalizability, meaning that the claims made from the research can be applied empirically to a wider universe or can have a wider theoretical resonance, whether the data is representative or not. Lastly, the analysis can be made from reliability, which implies that the research method and technique is accurate. This last one is a lot more easily done when using quantitative method than qualitative. This is why the method of analysis of this thesis lies on both validity and generalizability. The data contained in the emails is stemmed from interpretive elements to better contextualize the text and reflexive sense to see other aspects than the actual reading of the emails, as opposed to a literal reading. Literal reading, in the case of this study, is insufficient on its own to capture the implications and further meanings. It is especially essential to add interpretation when it comes to ideological arguments in the emails. However, since emails are quite raw, it is expected that reflexive reading will matter the most in analyzing properly the texts. Indeed, reflexive reading considers the researcher's role and perspective in the interpretation of the data, with the biases attached to such a method of data generation.

⁷⁰ Baillat, A., Emprin, F., & Ramel, F. (2016). Chapitre 12 - Des mots et des discours. *Dans* A. Baillat, F. Emprin, & F. Ramel (Éds.), *Les politiques publiques de l'environnement : Une analyse critique* (pp. 227–246). Presses de Sciences Po.



Considering the choice of the method, categorical indexing, the primarily step is to read through each file containing emails from the sample. The process of reading is accompanied with the categorization of the content according to the subquestions developed in the previous chapter. Each email is thoroughly read to identify key elements and themes that could fit in the categories drawn from the subquestions. The process then moves from broad and general classifications to more precise reading and categorization. For each subquestion, hence analytical chapter, there are multiple categories, but some have been removed and others added. This ensures that the analytical framework evolves with the researcher's growing familiarity with the emails. Plus, as the analysis relies on interpretive and reflexive reading, such work is better done with multiple and thorough readings. Broad categories could also be adjusted following the nuances of the data. As a matter of example, the category of structural violence, relevant for the third subquestion when discussing management of resistance and opposition has been removed. Indeed, no data from the email could have been extracted to fit within this category. Yet, it does not mean that this does not exist in the social reality, only that the data cannot provide sufficient evidence.

Because of the method of reading, using AI tools and computer aids are not relevant in this case. Indeed, Mason suggests the use of computer-assisted qualitative data analysis software (CAQDAS) for indexing⁷¹, in a period when Artificial Intelligence did not exist. However, using such a software requires to be well accustomed to this aid, which is not the case here, and could thus add to the difficulty. It is also suggested by Baillat, Emprin and Ramel when detailing qualitative analysis in International Relations methods of

⁷¹ Mason, J. (2002). *Qualitative researching* (2nd ed.). SAGE Publications. pp.151

research, with IRaMuTeQ⁷² specially conceived for lexical analysis. Although better fitted for this study, it would mean to subtract some of the work to a tool which, if not well managed, could be disastrous for the research. Plus, the analysis of emails requires interpretive and reflexive reading, which cannot be done effectively using a software. It goes the same with AI tools, although considered at first. However, it is not a sufficiently precise tool, especially considering that their functioning mode is quite unpredictable and adds biases, additionally to the researcher's. However, AI tools were used to organize the data: after doing the categorization manually, ChatGPT was assigned the role of assembling by categories the multiple pages of selected data. Still, the categorization is done manually, otherwise the risk is to lose control over the research which, if not done properly, questions in turn the validity of the study.

After thorough reading, key concepts and themes are coined with codes according to this thesis' analytical framework, thus deviated from the sub-questions. Elements from emails mentioning internal legal strategies, restrictive contracts or use of lawsuits are coded as part of the lexical field of Wallerstein's third analogy of hegemony, which is coercion. Such elements thus fit within the thematic group of management of anti-systemic movements, corresponding to the third subquestion. Here, the interpretation method comes, when trying to look for connections between the categorized elements and the elements detailed in the second chapter as this thesis' conceptual and analytical framework. After the thorough reviewing of each of the 63 files of emails and the categorization of the data, the analytical chapters are better rearranged and detailed, and with special refining and specifying of headings and key arguments for a coherent structure of the analysis. Thus, it ensures internal consistency, a better linkage with the

⁷² Baillat, A., Emprin, F., & Ramel, F. (2016). Chapitre 12 - Des mots et des discours. *Dans* A. Baillat, F. Emprin, & F. Ramel (Éds.), *Les politiques publiques de l'environnement : Une analyse critique* (pp. 227–246). Presses de Sciences Po.

research objectives and between the empirical data and the sub-questions. There are three rules, essential to the work of interpretation, that would serve as guidelines for each step: to place in context, to avoid presuppositions, and to avoid value judgements⁷³. These conclude the explanation of the method of data analysis chosen to properly make use of the data and create enough valid material to analyze.

2: Turning data into analytical writing

Once the work of categorization is properly done, it is essential to know what to do from the categorized data, and to know what to make of the results from the research. It is necessary to do this work to first decide which type of argument is being made. It could be about the meaningful process of development, or about how something works or is constituted by focusing on mechanical arguments, or making comparative arguments to explain by comparing social phenomena, or at last presenting arguments about causation and prediction. The last two are not considered for this thesis as they do not relate to the research question, and would thus not be relevant to answer it. The first two are rather what is sought in this research. Indeed, the goal is to look for a cyclical pattern, which is coherent with development arguments, and internal strategies that imply mechanical arguments. It is necessary to make the arguments work to know first how the data is being read, which was discussed just before, and second what role the data plays in the argument. The data does not constitute the argument in itself but rather supports it and provides a way into making the argument. The argument is made interpretively, meaning that the

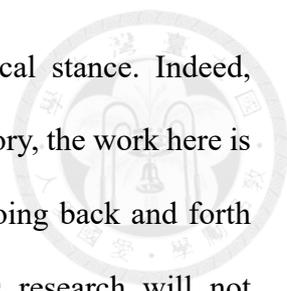
⁷³ Baillat, A., Emprin, F., & Ramel, F. (2016). Chapitre 12 - Des mots et des discours. Dans A. Baillat, F. Emprin, & F. Ramel (Éds.), *Les politiques publiques de l'environnement : Une analyse critique* (pp. 227–246). Presses de Sciences Po.

interpretation from the categorized data is meaningful and reasonable, but also reflexively as it is made from the awareness of a meaningful range of perspectives.

Now that the making of the argument has been clarified, it is necessary to explain how theory comes into play. Indeed, this research is based on theory, and it is primordial to know when to use it with the analysis, and how. In the case of this study, theory has already been developed, as it relies heavily on Wallerstein's theory. More specifically, the theory used is the one of hegemony, for some parts directly drawn from his writings on hegemony⁷⁴, and for other parts constituted from a thorough reading of his modern world-system series, especially the second volume⁷⁵. For this reason, theory will not be developed from and through data generation and analysis. Theory will rather be incorporated through two distinct ways. First, as it has already been done in Chapter 2, theory comes first, before empirical research and analysis as the goal is to test it against data. This is how the four sub-questions were developed, as a direct way to answer the research question, which is as follows: **In what ways does Monsanto's behavior in agribusiness reflect and assess Wallerstein's hegemony in his world-systems theory?** However, the research question seeks two different results, differentiated particularly by levels of interpretation. The first goal is to show how Monsanto's behavior reflects Wallerstein's theory of hegemony. It is a rather descriptive objective, by seeking how data can show evidence that Monsanto's strategies embody and illustrate the theory, whether consciously or not. This is done by asserting first the theory and then by testing it against data, in this case emails about Roundup. The second goal is to assess, which

⁷⁴ Wallerstein, I. (1983). The three instances of hegemony in the history of the capitalist world-economy. *International Journal of Comparative Sociology*, 24(1-2), 100-108.

⁷⁵ Wallerstein, I. M. (2011). *The Modern World-System II: Mercantilism and the consolidation of the European world-economy, 1600-1750*. University of California Press. Preface & Introduction



implies a critical examination and a more evaluative and analytical stance. Indeed, Monsanto's behavior does not necessarily and naturally show the theory, the work here is to measure it and judge it against Wallerstein's theory. It implies going back and forth between data analysis and the process of explanation. Still, this research will not participate in constructing a theory, as the aim is to use Wallerstein's theory as close as possible to the one he developed in his writings.

Lastly, this part discusses the ways this method intends to demonstrate the validity of the research and data analysis. For the interpretive and reflexive reading and the way the arguments will be constructed, there are two possibilities for validity that Mason emphasizes in the last section of her book on qualitative research⁷⁶. It is first about the validity of data generation methods, which means that the logic of the method, the document analysis and the selection of data sources matches well the research question and is thoroughly explained. This is what this chapter intended to do, as well as explaining the process and giving some research context to understand the analysis. Indeed, this Chapter 3 works as to confirm the validity of the research, by being coherent with the framing of the method and data, and the analysis and results parts. The second way emphasized by Mason to confirm the validity of the qualitative research with the kind of reading chosen here is the validity of interpretation. The analysis of this thesis will thus read sections of data together, accordingly to cross-sectional themes. This process will be done thoroughly in the following chapters which will discuss the data and the interpretation of the results of the research. Before moving on to the analysis parts of this thesis, a last section needs to be discussed, as to acknowledge some research limits.

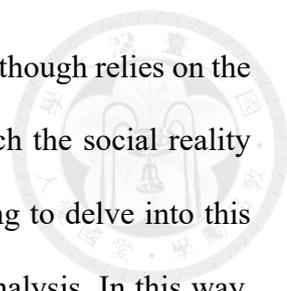
⁷⁶ Mason, J. (2002). *Qualitative researching* (2nd ed.). SAGE Publications. Chapter 9



3: Reflecting on research limits of this study

This last part is necessary to cover entirely the discussion on method and data for this research. There are three core limitations of the method used, which are essential to acknowledge and reflect on, especially when doing an interpretive and reflexive reading. First, the framework must remain flexible, as some categories may become too broad or vague with the reading, thus weakening and making their analysis rather useless. Using such a method can be difficult when reading through texts, where multiple themes in a single text may complicate categorization. Although it could be less of the case with emails than it is for other types of text-based documents, data categorization will require adjustment in the categories and the methodology. What could be more of a limitation with emails is the non-uniformity of the layout and, as opposed to a speech, by being rather unstructured. Such limitations are kept in mind while doing the data categorization and data analysis, so the categories keep their relevance and answer properly the four sub-questions.

Another core limitation is, inevitably when doing interpretive and reflexive reading, the researcher's biases. This is the reason why the question of biases will be present throughout the categorization process to cope as best as possible with this limitation. During the analytical work, the objective is to present results and observations in all chapters on a neutral tone. Biases, or subjective judgments based on personal or cultural experiences, are present in all kinds of research, but even more in qualitative research and this method particularly as it involves the research even more than, for example, when comparing graphs and numbers. There is a risk of a tendency to look for confirmation of expectations and overlooking certain data that could compromise them.



It is necessary to emphasize that the aim is to test the theory which, although relies on the expectation that it would be confirmed, looks also for ways in which the social reality could differ from the theory. In this case, it is always very interesting to delve into this observation, as it tells something about the social reality worth of analysis. In this way, the interpretation will less be shaped by the analyst, and more by the data itself.

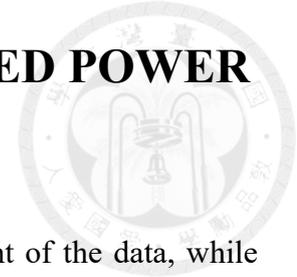
At last, this method of interpretive and reflexive reading through categorical indexing can introduce a loss of nuance and contextual dependence. Indeed, qualitative research sometimes try to rely on quantitative treatments such as occurrence and co-occurrence⁷⁷ counts to obtain for validity of analysis. However, by relying only on this method may lead to overlooking hidden meanings. This is why the previous part had at heart to explain how the validity of the research is sought in this thesis. Coping with this limitation thus lies heavily on how well and properly the interpretation is done. The analysis will rely on presenting as much of the data as possible, without looking for occurrence. About contextual dependence, what is implied is that the results of the analysis will depend heavily on the researcher's contextual knowledge of the historical, social, and political background. To better counter this limit, contextual information will accompany the analysis of the data, when necessary, to be rigorous and clear on how some results are being drawn from the data analysis.

To finish the limitations' part, it is imperative to acknowledge that, although the method chosen to analyze the text-based document is cross-sectional and relies on interpretive and reflexive reading, it will not be possible to fully capture hidden intentions, neither power relations nor strategic calculations entirely. Indeed, the researcher is not omniscient and will always lack in a way or another, some context or knowledge to

⁷⁷ Reinert, M. (2007). Postures énonciatives et mondes lexicaux stabilisés en analyse statistique de discours. *Langage et société*, 121-122(3), 189–202.

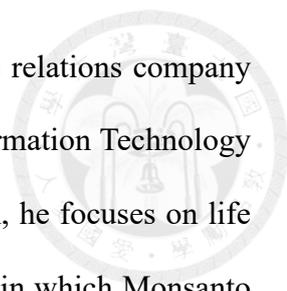
entirely comprehend all intentions and meanings. The research will still thrive to get the best relevance of data reading, essentially by doing multiple reading and revisions along the analytical process. These limitations will be kept in mind during the research, as to offer the finest study to answer properly the research question and four sub-questions. By concluding this Chapter 3, the thesis finishes the extensive explanation on the framing of this work and gives all the necessary elements to start the discussion and analysis section of the research.

CHAPTER 4: CORPORATE INTEGRATED POWER



This first chapter of analysis aims at introducing the content of the data, while answering the first sub-question: **How does Monsanto integrate economic, political, and ideological strategies to sustain corporate dominance?** This part begins the analysis because it seeks to establish an overall look at the different actors involved, and how such a network interacts. This is done in order to present the structural and strategic integration of the powerful corporation that is Monsanto. This integration then permits dominance, through mechanisms analyzed thoroughly in the second and third chapters of the analysis. To begin with the first chapter, it is essential to get a better grasp at what are the general first findings of the data. This will be done with an overview of the key actors of the dataset, and what the email network entails.

There are six high-frequency actors in the dataset, that appear as regular correspondents in the sense that they appear in more than four files, either as the sender or recipient of the email. Still, it is necessary to situate this information within its temporal context. The emails span the period from 2012 to 2017, with 63 files and 5402 worth of pages. Thus, even the regular correspondents do not appear as regular through this many data. It must be mentioned that the actors considered for the analysis are not the exhaustive list of actors appearing in all files, but only the ones from the emails deemed as relevant to the analysis. The most regular one is Kevin Folta, a professor at the University of Florida and Department Chair at the Horticultural Sciences Department of the University of Florida in Gainesville. He appears as a central academic liaison for Monsanto, as he is often in contact, especially with Eric Sachs who works as Regulatory for Science and Policy Lead. Together, they handle corporate and academic coordination and facilitate cross-domain networking between corporate, media and public policy. They



often correspond with Carly Barnes who works at the global public relations company Ketchum. Another regular correspondent is Val Giddings at the Information Technology & Innovation Foundation, a public policy think tank. In his position, he focuses on life science and innovative technology such as biotechnology, a domain in which Monsanto is at highly competitive and at center during this four years span. Finally, Stuart Smyth, holding the industry chair in agri-food innovation at the University of Saskatchewan, appears as a key academic partner for Monsanto, often corresponding with Camille Ryan who, while occupying the role of Social & Behavioral Lead in the Regulatory Scientific Affairs, served as a professional affiliate in the Department of Agricultural and Resource Economics at the University of Saskatchewan. Together, they coordinate workshop and panels with an international outreach, both serving as intermediaries between academic and private spheres.

The actors will not be exhaustively named and presented here, as they amount to 111. The great majority only appears once in the selected data, either as the sender or the recipient of the email. What needs to be emphasized is the diversity of profiles and spheres of influence. Some serve as academic intermediaries, others as corporate strategists and communication specialists. A great number of actors is significantly publicly engaged, whether through medias, social medias, university workshops and public panels. At last, some of the correspondents have regulatory and policy roles. The actors serve different roles, with high-frequency actors often functioning as the core hub of the network, linking corporate strategy to academics and media outreach. Actors that are rather mid-frequent embody the role of bridges as they connect sphere without being necessarily at the core of the network of different spheres. Finally, the actors appearing only in a few emails often play a specialized role, contributing to projects and specific goals. In this way, the extent and diversity of correspondents highlight the strategic layering of influence that

Monsanto puts into place. In Wallerstein's world-system theory, hegemonic control is achieved through integrated coordination across multiple domains. In this case, Monsanto touches upon academic, corporate, regulatory domains as well as the media, which are relative to Wallerstein's first analogy of hegemonic power.

The following part will tackle in a more detailed and thorough way the corporate integration at play with Monsanto. First, it will look at cross-domain coordination and academic integration, or in other words who Monsanto brings in its network. Then, the second section will discuss how Monsanto exerts influence beyond internal networks, how he uses its voices externally through public opinion, media, and policy arenas. At last, the third section will cover Monsanto's internal coordination, and demonstrate how the corporation, through oversight of research and engagement with regulators and institutional institutions, consolidate its influence.

Section 1: Cross-Domain Coordination and Academic Integration

This first section aims at showing how Monsanto embeds academic people into corporate networks. It in turns allows Monsanto to coordinate science, media and advocacy. Such a strategy come first at sight when reading through the data, as it is explicitly at work throughout the whole dataset.

1: Coordinated cross-organizational messaging and GMO labeling

To begin with, Monsanto aligns multiple actors across different spheres such as academics, journalism, corporate representatives and policy actors through emails correspondence. Such a concrete example of coordination can be found in email correspondences on GMO labeling, a law about to pass in multiple states in the United States in 2014. This law poses significant concerns for Monsanto as well as for major actors in the agribusiness, and is a topic greatly discussed in academic spheres. Amber Niebauer, organizer and manager for biotech events at the North Carolina Biotechnology Center is in charge during this time to coordinate a conference call to discuss a summit session on GMO labeling⁷⁸. Such a correspondence brings together several people serving different roles: Kevin Folta as academic authority, Phil Miller as corporate representation of Monsanto, Michael Hansen as advocacy perspective, Tamar Haspel as media communication and Bo Stone as farmer perspective. Their goal is to shape discussion on GMO labeling, a law which intends for products to show an indication that the product or certain ingredients consist of or contain GMOs. Such a multi-domain coordination is regularly at work throughout the emails from the dataset, as it is a strategic alignment of different roles. In multiple states, Monsanto and its collaborators organized GMO labeling related events, to shape discussion on the law. This topic will be further investigated in other parts, as it is one of the biggest struggles for Monsanto and other agribusiness corporations in the year 2014, hence requiring strategic cross-domain coordination. In addition, such a strategy relates to the integration of production, commerce and ideology authority emphasized by Wallerstein when discussing the hegemonies for the Netherlands,

⁷⁸ File 14: Hood, AimeeAimeeBIOHall, KateReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.38-40

the United Kingdom and the United States. With this strategy at work, it enables for the summit to enjoy credibility in science debates, while being granted practical expertise and a communication channel.

Monsanto also establishes ties with academic spheres, and in particular from 2013 to 2015 with Kevin Folta from the University of Florida, who benefits from quite the credibility in the domain of biotechnology and is known for being a great science communicator. In 2014, he proposes to lead an experiment with his colleague Karl Haro von Mogel as a public counter to anti-GMO narratives and informs Aimee Hood at Monsanto “we also talked about getting some traited corn and an isoline to distribute to do the citizen science corn test... We want to put that nonsense to rest”⁷⁹. In this case, scientific credibility is put forward for corporate defense. In that regard, Eric Sachs from the same Regulatory team as Aimee Hood explains the role of “Monsanto’s Academic Research License (ARL), which makes it possible for researchers to do research with our commercial products and traits”⁸⁰. Monsanto indeed provides materials, licenses, and legal oversight to control how independent research, in the sense that it is not research pursued by its own corporate researchers, is framed and conducted, through the signing of an agreement. Such an agreement is mandatory for independent researchers to do research on their commercialized products. Glennon Rogan from the Regulatory team at Monsanto discloses the role of the Academic Research License (ARL): “The ARL provides a streamlined process for academics [...], avoids the review process and MTA”⁸¹, which is the Material Transfer Agreement, a contract for the transfer of research materials. This agreement can appear as a mechanism for the corporation to legally gatekeep the

⁷⁹ Ibid. pp.7-8

⁸⁰ File 14: Hood, AimeeAimeeBIOHall, KateReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.23

⁸¹ Ibid. pp.42

research and keep control on studies on their products. In the same line of idea, Aimee Hood offers Kevin Folta “resource data cards”⁸² with logos and curated content for his teaching courses. Monsanto can also exert some control in education spaces in this way.

Thus, the emails show how Monsanto uses cross-domain coordination, reviewing some of the mechanisms they employ to that goal. Coordinating these actors, either academic, corporate, media or advocacy enable Monsanto to frame a single and orchestrated discussion around topics essential for the sustainability of their hegemony. It is the same sense that Wallerstein intends when mentioning the simultaneous advantage in production, here with seeds production and R&D, commerce with their licensing strategy, and ideology through media and public science narratives.

2: Academic influencers as corporate connectors

What matters specifically in this part is the manner with which Monsanto leverages networks and reputation of influential scientists. Here, academics are viewed as networkers, or even to some extent coaches. The previous part introduced Kevin Folta as a key actor in this domain for Monsanto as well as for other corporations. Indeed, Kevin Folta is a loud voice and excellent communicator in the biotechnology academic and research sphere, and is recognized as such by his peers, whether in line with his views or not. As mentioned previously, his role as leveraging academic credibility is essential, but so is his role as connecting corporate executives to academic networks. This is especially the case through the several summits, conferences and panels where academic corporate employees meet. Kevin Folta, as a passionate science communicator, often

⁸² Ibid. pp.1

attends these events⁸³ which places him at the center of academic and corporate networking.

As well as attending these events, Kevin Folta helps organizing and framing such events. In 2014, he assists Robert Fraley's debate on genetically modified food. Robert Fraley has a high importance at Monsanto as he was the executive president and chief technology officer. At this time, Kevin Folta, in response to his inquiry, sends to Benjamin Schaffer, scientific communications manager at Monsanto, an email stating "I have some follow-up stuff for Robb, mostly toward his debate with Benbrook, etc. What is the best way to get to him?"⁸⁴. In this sense, he provides strategic information to guide the corporation's debate preparation. Andria Van Mierlo, executive protection at Monsanto, sent a thankful email to Kevin Folta after the debate, emphasizing that "your willingness to take time from your day and walk us through Dr. Fraley's was integral in the success of the trip"⁸⁵. Monsanto's strategy is to surround itself from trusted academics, in order to help shaping public opinion and policy debates. Here, the academic researchers act as a debate coach, to ensure the corporation is armed with scientifically credible arguments. The corporation coordinates actors from different domains, as mentioned previously, before inserting trusted and strategic academics into their network.

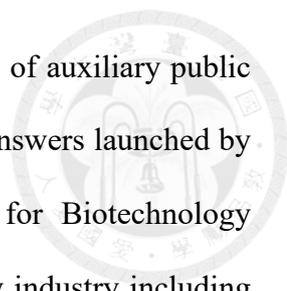
3: Academics as public relations communicators

The previous part highlighted how Monsanto relies on academics for communication. It is essential to show a different manner for the corporation to integrate

⁸³ File 15: Folta, Kevin M; Monsanto; Quarles, Lee. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

⁸⁴ Ibid. pp.4

⁸⁵ File 40: Bill, Seglar; Bill; DuPont-Pioneer; Monsanto; van Mierlo, Andria Nicole; Barnes, Carly; Ketchum. (2014; 2015). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.2

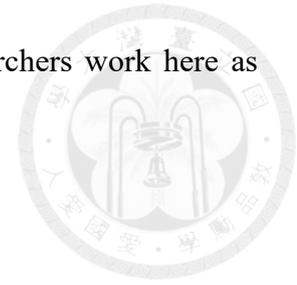


academics, and other domains. Indeed, academics can serve the role of auxiliary public relations operatives, and this is at the center of the platform GMO Answers launched by Ketchum public relations. The firm was hired by the Council for Biotechnology Information (CBI), funded by several giants from the biotechnology industry including Monsanto. This platform will be further analyzed in other parts, this part rather focuses on the link with academics. With GMO Answers, anyone can ask questions on the website, which are then answered by independent researchers. These researchers are contacted through the public relations firm's network and, from the dataset, a majority of them are the same in contact with Monsanto. GMO Answers make sure that its independent researchers comply with positive views on biotechnology, which are easily spotted through the network. Hence, Kevin Folta is a great contributor on the website, often thanked by the launchers of GMO Answers for his dedication to the task. Although the website intends on answering any question from independent researchers, the link with the agribusiness corporations is clear and the questions, often carrying worried concerns on genetically modified organisms (GMOs), are answered with reassurance. Kevin Folta, about free inquiry limited because of patent protection, responds that "any academic researcher can get the seeds"⁸⁶. Furthermore, "you are free to use their stuff, you can just grow it and sell it. There are no restrictions on publication and they don't care what you are up to"⁸⁷. However, when taking a look at the defense and offensive Monsanto pursue in the academic sphere when an academic paper threatens its products, it is necessary to mention that such a quote needs to be nuanced. On GMO Answers, independent researchers spread positive information on GMOs. The strategy for the corporation is to dismantle public critique by projecting transparency, and in the end by controlling how

⁸⁶ File 16: Barnes, Carly Ketchum. (2013; 2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.37

⁸⁷ *Ibid.* pp.37

controversies are depicted across domains. The independent researchers work here as delivering external messaging internally framed by the corporation.

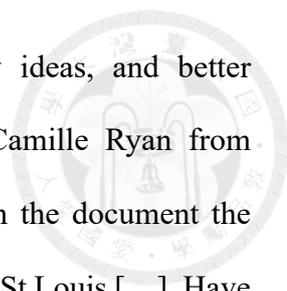


4: Facilitation of corporate-academics networks

The last part of this first section still focused on the academic network, but from a relatively different angle. Here, the academics do not represent Monsanto's internal messaging and strategy but rather tackles how the corporation facilitates their positioning inside networks. This part focuses rather on sustained embedding, with long-term effects which goes further than regular coordination. For this result, Monsanto finds, mentors and then places independent researchers where their voices can be the most useful to shape the debate around positive views of biotechnology. This is done and found multiple times in the dataset, when Monsanto ensures site visits and exposes academics to a corporate narrative. In 2015, Director of Government Affairs at Monsanto George Gouch introduces Bradley Calhoun of the National Defense University's Eisenhower School to his colleagues Kent Bradford and Susan DiTomaso from the Seed Biotechnology Center at the University of California in Davis (UC Davis). He explains that "Bradley is leading a contingent of eighteen individuals [...] to learn about agricultural biotechnology"⁸⁸ and that "they will be making a stop at our site as well as Arcadia's and would like to visit the Seed Biotechnology Center if possible"⁸⁹. In the same manner, Jill Deikman from Monsanto thanked a few months prior Kent Bradford for visiting her work team at Monsanto, stating that his "expertise in seed biology is exactly what we needed to tap into

⁸⁸ File 33: MonsantoDeikman, JillJillGough, George NaphisUSDAUnited States Department of AgricultureBell, R Andre. (2015). *Email communications between Kent Bradford and Monsanto*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp5

⁸⁹ File 33: MonsantoDeikman, JillJillGough, George NaphisUSDAUnited States Department of AgricultureBell, R Andre. (2015). *Email communications between Kent Bradford and Monsanto*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.5



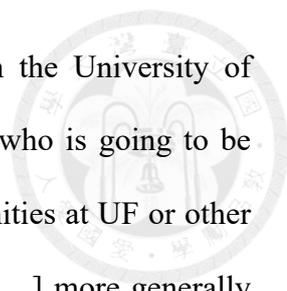
to help us develop better approaches, and we got several new ideas, and better understanding of critical aspects of seed biology”⁹⁰. In 2016, Camille Ryan from Monsanto sends to Peter Phillips and another recipient censored in the document the following email: “Please find attached a draft agenda for your visit to St Louis [...]. Have you been able to connect *censored name* as yet? He had expressed interest in hosting you both in Columbia”⁹¹. This illustrates how Monsanto reinforces their knowledge exchange between the corporation and the academic sphere, but also the reciprocal value between both coordinated domain. Researchers and Monsanto employees are bond to meet in many settings such as workshops: Bradley Gabor from Monsanto informs Kent Bradford that “The American Association of Cereal Chemists and American Phytopathological Society are organizing a one-day ‘hot topics’ workshop on Sustainability, Genetics and Future Cultivars”⁹² to which he invites the researcher to do a presentation. Kent Bradford declines the offer but suggests other of his colleagues that he deems more suited for this topic, and with this including more researchers in the academic and corporation network. Monsanto keeps ties with academics through panels, workshops, conference and meetings, as Kent Bradford explains to Jill Deikman: “Monsanto is a member of a group that supports research in my lab on seed quality topics. We have an annual meeting [...]. Mike Centner from Oxnard usually attends, [...] he thought perhaps someone at Calgene or Monsanto from Woodland might want to attend”⁹³. This shows that not only does Monsanto invites academics to events, but its corporate employees also get involved with academic events, highlighting once again the reciprocity of their coordination. Indeed,

⁹⁰ Ibid. p43

⁹¹ File 51: Bluethner, AndreasBASFPhillips, PeterUniversity of SaskatchewanRyan, CamilleMonsanto. (2016). *Email communication between Peter Phillips and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.63

⁹² File 33: MonsantoDeikman, JillJillGough, George NAphisUSDAUnited States Department of AgricultureBell, R Andre. (2015). *Email communications between Kent Bradford and Monsanto*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp27

⁹³ Ibid. pp.11



Jennifer Yates from Monsanto emails Michelle Samuek-Foo from the University of Florida the following inquiry: “We have someone from Monsanto who is going to be visiting Florida [...] and wanted to know if there were any opportunities at UF or other Florida universities to speak about Monsanto. [...] She can speak [...] more generally about GMOs. Would you be able to connect her with someone to see if there’s interested at UF to do this?”⁹⁴. Monsanto tries, by fostering an academic network, to embed corporate voices in universities. In the same manner, Monsanto hosts and organizes events in coordination with academics, as Camille Ryan from Monsanto emphasizes when contacting Peter Phillips from the University of Saskatchewan when stating “you mentioned a science event scheduled in Regina this April that we could potentially attach a sci comm related panel to. We are interested in helping you push this idea forward”⁹⁵. At last, Monsanto and academics connect through defensive mobilization on social media, as seen in an email in which Alison Van Eenennaam from UC Davis requests from three of her colleagues at UC Davis and Joanne Fillatti at Monsanto to “please watch social media and defend my honor/ scientific integrity”⁹⁶ about a debate, to which Joanne Fillatti responded “you were the most articulate and most believable of the group [...] the whole Calgene crew watched it and was cheering for you”⁹⁷. It also highlights the friendly ties between corporate employees and academics.

This section showed through which processes Monsanto coordinates different spheres, with insistence on the academic sphere as it is the link that emerges the most from the dataset. It illustrates how Monsanto’s domain of influence is embedded through

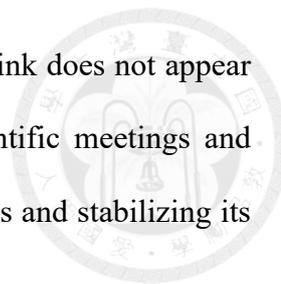
⁹⁴ File 43: Barnes, CarlyCBKetchumDudinMonsanto. (2015). *Email Communications with Kevin Folta regarding media opportunities*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.12

⁹⁵ File 51: Bluethner, AndreasBASFPhillips, PeterUniversity of SaskatchewanRyan, CamilleMonsanto. (2016). *Email communication between Peter Phillips and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.24

⁹⁶ File 33: MonsantoDeikman, JillJillGough, George NAPHISUSDAUnited States Department of AgricultureBell, R Andre. (2015). *Email communications between Kent Bradford and Monsanto*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.17

⁹⁷ Ibid. pp.17

academics and is far beyond the corporation, where sometimes the link does not appear as evident. Through knowledge production, professional and scientific meetings and public defence, the corporation makes sure of integrating all domains and stabilizing its dominance.



Section 2: Public, Media, And Policy Influence

This second section focuses on Monsanto's integration strategy and cross-coordination through its influence on public policy and its media framing. Three parts will tackle this topic, to show the extent of the strategies.

1: Media and public influence via coordinated platforms

First, Monsanto uses external medias to influence public opinion, but also policy debates, through specific platforms and blogs. This is the case with the Genetic Literacy Project media, founded in 2011 by Jon Entine who happened at that time to be the founder and principal of ESG MediaMetrics, a public relations firms whose client was Monsanto⁹⁸. The Genetic Literacy Project is very influential, and by the end of 2014, the media claimed to have “grown in readership and impact, sometimes exceeding 20,000 hits a day, and [...] have been cited or featured on television, radio and in hundreds of publications and media stories around the world”⁹⁹. Furthermore, the media explains in its newsletter that “the GLP doesn't just oversee a website – we're committed to positively influencing

⁹⁸ Malkan, S. (2022, July 14). *Genetic Literacy Project: A PR front for Monsanto, Bayer, and the chemical industry*. U.S. Right to Know.

⁹⁹ File 18: Relph, Deborah Genetic Literacy Project. (2014). *Illumination and Genetic Literacy Project Daily Newsletter*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.113

public policy”¹⁰⁰. Here, the influence operates through external media, reaching both in media coverage and policy influence. In a similar way, GMO Answers, mentioned in the previous part, made the choice to expand into interactive platforms such as Reddit, as Carly Barnes informs Kevin Folta: “Cathy Enright will be hosting a Reddit AMA this Thursday at 1 p.m. ET on behalf of GMO Answers [...] Also, we are working with CBI to offer a Reddit AMA training for folks who have contributed to GMO Answers”¹⁰¹. This quote also highlights an attempt to align trainings between employees from the PR firm and academics, to keep their relevance on all platforms. Additionally, a concrete platform has been put forward by Monsanto, a blog, under the name of Beyond the Rows¹⁰². Its content is managed by six Monsanto employees and is used to frame positive views on the company and biotechnology in general. As a matter of example, a post updated in 2015 is headlined “Monsanto Philippines talks with Mindanao university students on global agriculture and food sustainability”¹⁰³. The article goes on, portraying Monsanto in a great light and mentioning the “warm welcome from 866 university students who attended its briefing on sustainability, food, partnerships and career building”¹⁰⁴. In addition to the depiction in which Monsanto shapes the public opinion, this post shows that Monsanto positions itself as a career pathway by organizing briefings inside universities. Finally, another strategy put forward by Monsanto is through pre-packaged booklets on glyphosate sent to academics already part of their network. This booklet is, according to John Vicini from the Regulatory team when sending Alison Van Eenennaam their version a compilation of frequently asked questions (FAQs) on the GMO Answers

¹⁰⁰ Ibid. pp.113

¹⁰¹ File 21: Daly, Carolyn A/Daly, Carolyn/Monsanto/Monsanto Company/Lohuis, Mike. (2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.36

¹⁰² Young, G., Person, J., Manning, K., Veihman, M., Weber, N., & Morgan, T. (n.d.). *About the bloggers*. Beyond The Rows (SM) – A Monsanto Blog.

¹⁰³ File 45: Relph, Deborah/Genetic Literacy Project. (2015). *Illumination and Genetic Literacy Project Daily Newsletter*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.72

¹⁰⁴ Ibid. pp.72

website¹⁰⁵. From this email, the link between Monsanto and GMO Answers is quite evident. Overall, Monsanto seeks to ensure that their public statements are consistent throughout the corporate-academics network. Such an objective is pursued through multiple platforms such as the traditional press, blogs, Reddit and university briefings, and builds on the academic incorporation tackled in the first section.

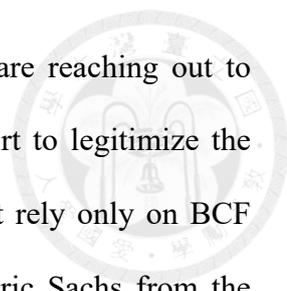
2: Coordinated political influence and policy shaping

Monsanto attempts to influence many domains, through networking and media influence. Such strategies are put forward with a concrete objective of shaping public policy to its benefit and sustainability. The case of Proposition 37 is very striking, as Monsanto was the biggest opponent to the passing of the law, investing as much as 8 million US Dollars for the opposition campaign “NO. Prop 37”¹⁰⁶. Proposition 37 was a ballot in 2012 in the state of California that would have required labeling of genetically engineered food. BCF Public Affairs leads the opposition campaign at the time, and surrounds itself of academics, as Sheri Yang explains to UC Davis researcher Colin Carter that “the No on 37 Team has been working intensely with Scientists and Doctors from all over the world to spread the word to Californians that labeling GE food is unnecessary and costly”¹⁰⁷. Other UC Davis researchers participated directly to the campaign against GMO labeling. Overall, the No on 37 campaign relied greatly on academics to coordinate their political coalition, supported by many agribusiness companies threatened by the passing of the law. BCF Public Affairs contacted Nobel Laureates for their campaign, as

¹⁰⁵ File 49: Vicini, John L. Monsanto. (2015 March 17). *Email communications between Alison Van Eenennaam and Monsanto enclosing glyphosate booklet*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

¹⁰⁶ File 38: Carter, Colin LAO Taylor, MacMatosantos, Ana J. (2015). *Email communications between UC Davis and BCF Public Affairs re: No on Prop 37*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.3

¹⁰⁷ Ibid. pp.135



explains Amanda Drew to researcher Pamela Ronald stating “we are reaching out to Nobel Laureates to get involved with the campaign”¹⁰⁸, in an effort to legitimize the campaign by leveraging high-profile researchers. Monsanto did not rely only on BCF Public Affairs to handle the opposition campaign. For example, Eric Sachs from the Regulatory team, often mentioned in the dataset, reached out to researchers from UC Davis, University of Missouri-Columbia, University of California Berkeley and North Carolina State University to “develop a report on consequences if California were to adopt Proposition 37”¹⁰⁹. It shows how Monsanto utilizes its network, with researchers from all across the country mobilized for a ballot in the state of California.

Another striking case where Monsanto is able to pull strings in regard to policy shaping is by corresponding with the Food and Agriculture Organization (FAO). In an email correspondence with researchers from the International Consortium on Applied Bioeconomy Research (ICABR) and Eric Sachs from Monsanto, Stuart Smyth, president of ICABR, explains that he “had discussed with Terri about having some of the papers presented at the FAO following the conference”¹¹⁰. Stuart Smyth is, from the dataset, often in correspondence with Monsanto, as his Industry Research Chair in Agri-Food Innovation is funded by industry sponsors including Monsanto. He also works with Monsanto researchers within the College of Agriculture at the University of Saskatchewan, such as Camille Ryan who happens to be one of the council members of ICABR. This correspondence is not the only one between ICABR and Eric Sachs, as they discussed the organization of a collaborative panel on the topic of the classification of glyphosate as carcinogenic in 2015¹¹¹. It appears thus as relevant to see the implication

¹⁰⁸ Ibid. pp.141

¹⁰⁹ File 39: Alston, Julian American Seed Trade Association Shryock, Jereme J Pardey, Philip G Sumner, Daniel. (2015). *Email communications between Julian Alston and Monsanto re: ASTA Plant Breeding WG meeting with attachments*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.24

¹¹⁰ Ibid. pp.35

¹¹¹ Wisner, R. B., Baum, M. L., & Esfandiary, P. (2017, June 30). *Letter initiating meet-and-confer regarding confidentiality of documents produced by Monsanto in discovery* [PDF]. Baum Hedlund Aristei & Goldman. pp.28

of Monsanto in the effort of ICABR to contact Terri Raney, FAO representative, to present their work to the FAO. Monsanto's strategy relies on exerting political influence by mobilizing its academics-corporate network at different levels, whether for domestic campaigns or global organizations.

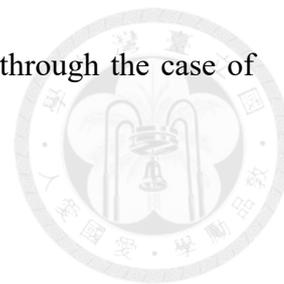
This second section emphasized that Monsanto relies on traditional media, such as news coverage and university workshops, but also integrates new platforms of communication with time through blogs and forums like Reddit. Monsanto's public image is essential for their sustainability in the regulated domain that is agribusiness. Stuart Smyth and Camille Ryan, when hosting their annual ICABR conference in 2017, decided to organize a pre-conference workshop, "hoping to have some Hollywood writers and researchers participating"¹¹², to counter the framing of biotechnology as concerning in a show in production called CRISPR. To counter discreditable offenses, Monsanto and his partners make the choice to use media and communication channels. It is also through these strategies that Monsanto influence policy shaping, as well as surrounding itself with partners that are best suited to spread positive views on biotechnology.

Section 3: Internal Alignment, Strategic Oversight, And Regulatory Engagement

The first two sections tackled cross-domain networks, with a focus on how academics are integrated, and how Monsanto leverages his networks for public image and policy shaping. At last, this section looks at how the corporation manages internal

¹¹² File 52: Smyth, Stuart University of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp121

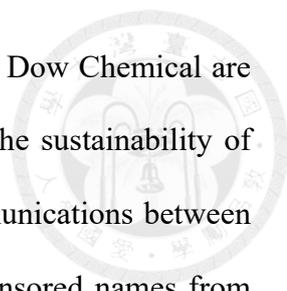
coordination and discipline, especially with knowledge production through the case of glyphosate.



1: Internal coordination and strategic messaging

This part introduces the internal alignment put forward by Monsanto through some of the processes apparent from the emails of the dataset. The aim of this part is to show how coordination happens inside the corporation and across other industry partners. The corporation tries to align its staff, from the regulatory team to the communication and R&D staff, through training sessions. Carolyn Daly from Monsanto emails 71 of her colleagues to invite them to Kevin Folta's seminar, the host being the regulatory policy lead at Monsanto Keith Reding. She emphasizes that "Dr. Folta's seminar is also part of the series of opportunities to see different styles of presenting biotechnology, how to exchange perspectives on best ways to address issues, and glean from his experiences"¹¹³. The goal from this session is to build an internal corporate strategy with skills such as presentation capability and issue-handling. Considering the number of recipients to that invitation, the goal is to uniformize their strategy with the attendance of as much staff as possible. Throughout the dataset, the attendance of Monsanto employees to conferences and seminars hosted by academics from their network, either to show support or reflect on the content of the talks to shape the corporation's internal strategy for external communication. Something else that is salient from the emails is cross-corporate alignment. This has been the case, as a matter of example, for Proposition 37 where agribusiness corporations worked together to form the opposition bloc. Throughout the

¹¹³ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.2



dataset, employees from Bayer CropScience, Syngenta, DuPont and Dow Chemical are often recipients of the same email. It shows their coordination as the sustainability of profits are often linked with public opinion and policies. The communications between researcher Stuart Smyth, Camille Ryan from Monsanto and two censored names from Syngenta and Bayer about “the abstract for the meta-analysis that is just beginning on changes in bee populations”¹¹⁴, asking that “if you have experts in your respective organizations that would be willing to review the key words and suggest additional ones, that would be greatly appreciated”¹¹⁵. Stuart Smyth also discussed with employees from these respective corporations on workshops and the 2016 ICABR conference¹¹⁶ which he organizes, sharing his enthusiasm to meet them. Thus, the coordination revolves around internal strategies, to align all teams, but involves as well cross-firm harmonization as they share common interests and threats.

2: Research oversight and framing academic output

Internal alignment is also pursued with documents shaping and review committees. Eric Sachs explains that “the abstract, authorship and conclusions in the version reviewed by Monsanto are different from those in the published paper”¹¹⁷, a study on which Monsanto collaborated by transferring seeds. He informs his collaborators at Monsanto that they “will pursue a correction to the paper”¹¹⁸, as other Monsanto employees pointed out this paper and an article from an organization described they described as anti-

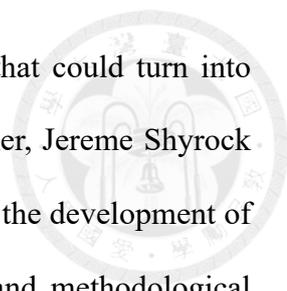
¹¹⁴ File 52: Smyth, Stuart University of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.5

¹¹⁵ Ibid. pp.5

¹¹⁶ Ibid. pp.121

¹¹⁷ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.454

¹¹⁸ Ibid. pp.45



biotechnology. The corporation is organized so that no statement that could turn into something that could jeopardize its sustainability. In a similar manner, Jereme Shyrock from Monsanto contacted researcher Julian Aston, as he was leading the development of a Monsanto publication. He explains that “to ensure the quality and methodological validity of this publication it has been recommended that a committee of external experts be organized to periodically review the publication”¹¹⁹, in return of a compensation for the time and travel of these experts. This goes on to show how the corporation organizes on the inside to control and regulate the publication of studies they developed or helped developing. Hence, there is process pre-publication, not as a peer review since the oversight is done internally to the company before being published and reviewed by others. Overall, Monsanto through internal coordination, with the regulatory team overlooking possible drawbacks from scientific output. It also demonstrates that, with the Academic Research License, Monsanto is granted the opportunity to review studies before they appear published. The firm ensures that the research supports its corporate narratives, and if not the case, can act on it. At last, emails have showed Eric Sachs suggesting the work of specific authors as sources to write reports¹²⁰ to researchers, which highlights how the corporation identify some sources, which in turn shapes conclusions. Through these few strategies, Monsanto organizes internal coordination between teams to control corporate narratives.

¹¹⁹ File 39: Alston, Julian American Seed Trade Association Shryock, Jereme J Pardey, Philip G Sumner, Daniel. (2015). *Email communications between Julian Alston and Monsanto re: ASTA Plant Breeding WG meeting with attachments*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.28

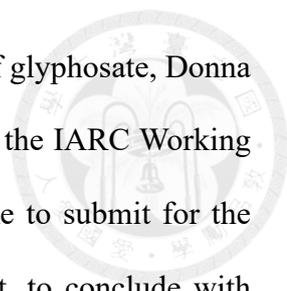
¹²⁰ File 39: Alston, Julian American Seed Trade Association Shryock, Jereme J Pardey, Philip G Sumner, Daniel. (2015). *Email communications between Julian Alston and Monsanto re: ASTA Plant Breeding WG meeting with attachments*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.23

3: Strategic regulatory and public relations planning on glyphosate

Finally, the case of glyphosate illustrates how Monsanto frames a narrative. The case of glyphosate will be further developed in the analysis; this part focuses on some mechanisms at work that suggests or reveals internal coordination and overall mechanisms mentioned previously in this chapter. These strategies are put in place after the classification of glyphosate as carcinogenic for humans by the International Agency for Research on Cancer (IARC), an agency of the World Health Organization (WHO), in March 2015. William Heydens, from Monsanto, contacts Daniel Jenkins from the U. S. Agency lead of Monsanto, to discuss how to deal with IARC fallout. He suggests some analyses or collaborations to publish updated studies to rehabilitate their public image or even show inconsistency with the agency's results¹²¹. The outputs from the suggestions are all citable in assessments, which shows again the emphasis Monsanto puts on research and studies and reinforces its reason for constituting strategic academics networks. This will be further discussed in other chapters, that will look more in details on this major crisis for Monsanto William Heydens, from the Product Safety Assessment Strategy team, asks for thoughts or inputs from another Monsanto team, even to pull some strings with “approaching EPA and having a conversation”¹²². Indeed, the corporation is organized into teams, that tackle specific topics and apply the necessary strategies. They also have their own networks, as the regulatory team is more often in contact with academics, as concluded from the dataset, which is the reason why internal coordination is needed at some point to deal with major crisis. Another mechanism at work is the selected sources cited and circulated by Monsanto, a safe bibliography for the company that does not

¹²¹ File 58: United States Environmental Protection Agency Wendy, Blake Huffstutter, PJ Bill Heydens, William F Rowland, Jess. (2016 December 05). *Request for testimony of Jess Rowland in Roundup Products Liability Litigation; attached Glyphosate Report of the Cancer Assessment Review Committee (CARC)*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.101

¹²² Ibid. pp.102

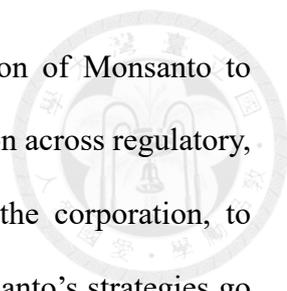


endanger its activity, as mentioned in the previous part. In the case of glyphosate, Donna Farmer, from the regulatory team, sends to Kathryn Guyton leading the IARC Working Group on glyphosate a “list of references that Monsanto would like to submit for the Meeting 112 regarding the active ingredient glyphosate”¹²³. At last, to conclude with some of the mechanisms at work regarding glyphosate, the control of information flow needs to be emphasized. To illustrate, the emails Camille Ryan from Monsanto sent to researcher Peter Phillips from the University of Saskatchewan are quite relevant, as she emails a collection of recent articles on glyphosate during the review of glyphosate by the US S. Environmental Protection Agency (EPA) Cancer Review Assessment Committee (CARC). With this, the agency classified the herbicide as “Not Likely to be Carcinogenic to Humans”. However, Camille Ryan explains that four days after posting the CARAC assessment on their website, the EPA removed it without giving any explanation on this decision. The Monsanto researcher thus informs her colleague that Monsanto is “directing questions about the removal to the EPA”¹²⁴. It shows again how Monsanto is vigilant on any flow of information in regard to its sustainability. The teams overlook recent published emails, and any regulatory status that could impact the corporation. Such a work could not be done efficiently without a solid network and an internal coordination. As well as overseeing publications, the corporation acts accordingly to it, once again through its internal network as well as external one when needed.

This chapter focused on introducing the dataset to get a better grasp at how the study was conducted. With codes and categories, the quotes of emails enabled the framing

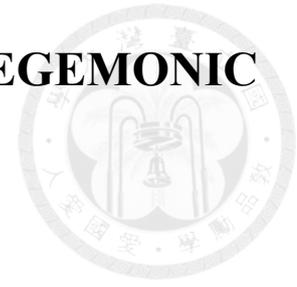
¹²³ File 61: Ross, Matthew. (2017 May 03). *Deposition of Dr. Matthew Ross in Roundup Products Liability Litigation*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.203

¹²⁴ File 51: Bluethner, Andreas/BASF/Phillips, Peter/University of Saskatchewan/Ryan, Camille/Monsanto. (2016). *Email communication between Peter Phillips and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.49

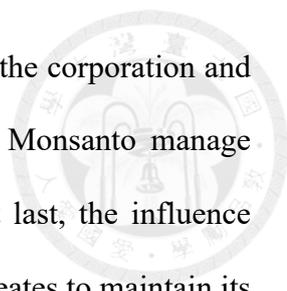


of this chapter, looking at mechanisms and the overall organization of Monsanto to produce and sustain its dominance position. With internal coordination across regulatory, policy, and R&D, there is an effort to align narratives to serve the corporation, to harmonize what comes out of the internal structure. However, Monsanto's strategies go way beyond, and create external networks, especially with academic integration. Through site visits, faculty invitations, funding or placement of speakers, Monsanto fosters and keeps a dynamic in constant motion. Monsanto also chooses to control the public opinion and policies. The corporation uses strategically multiple platforms such industry blogs or third-party platforms. They also coordinate campaigns and commission reports to act on regulations, with an emphasis on aligned research as Monsanto benefits from an extensive academic network and sponsorship of chairs. What stands out of these strategies is the way with which Monsanto chooses to integrate many domains, to connect them together, and to rely on external networks. From the dataset, the majority of emails engage Monsanto only as a sender or recipient, but rarely as both. Monsanto orchestrates the integration of political, ideological and economic strategies by expanding its networks, relying on external partners by keeping control through international coordination and aligned narratives.

CHAPTER 5: STRATEGIES OF HEGEMONIC MAINTENANCE IN MONSANTO



The previous chapter aimed at establishing the groundwork for the analysis, by setting out the dataset and identifying some evident aspects, which enable to grasp what overly constitutes Monsanto's dominance as an agribusiness company. It is essentially through the integration of several spheres of influence, and especially the academic one, the reliance on building a network, and benefiting from the power which these domains constitute that Monsanto asserts itself in agribusiness. From these results, it appears that the elements of hegemony as put forward by Wallerstein are verified in the case of Monsanto. Indeed, with the integration of academics, medias and policy shaping, the corporation enables itself to navigate through ideological, economic and political strategies, in the sense of coordination across all domains that Wallerstein develops as a first analogy. The present chapter aims at continuing this path, in the sense that elements of hegemony are part of maintenance of such powerful position, but by addressing Wallerstein's second analogy, which is based on political and ideological leverages. To this aim, this chapter provides an in-depth reading and thorough analysis of the dataset, to highlight rather hidden strategies. The goal is to get from the dataset as much intel as possible on internal frameworks and approaches that evolve accordingly to hardships that Monsanto faces. With the objective of the chapter advanced, it is essential to present the second subquestion of the analysis, which this chapter seeks to answer: How do Monsanto's internal strategies reflect Wallerstein's mechanisms for maintaining hegemony? Such an inquiry will be responded through three parts highlighting specific mechanisms. At first, some underlying strategies will be put forward in order to make

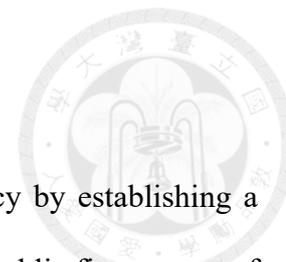


sense of how ideological framing and legitimacy are constructed by the corporation and its network. Once these identified, the analysis will look at how Monsanto manage strategically expertise, in addition to the control of knowledge. At last, the influence networks will be put forward, and the specific alliances Monsanto creates to maintain its hegemony. A particular attention is given to the implicit meanings of the data, which relies on emails internal to the company and to its network. This implies to make use of the interpretive reading on which the method of data analysis is built upon. Going in a rather in-depth analytical analysis and writing enable this part to tackle similar strategies to the previous chapter, but with a different output.

Section 1: Ideological Framing and Construction of Legitimacy

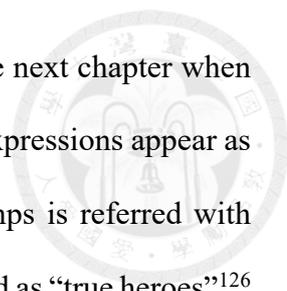
The first section focuses on elements relative to lexical fields and interpretive reading of emails as the goal is to emphasize how Monsanto fosters concepts such as ideology and legitimacy. Such an analysis is made by acknowledging what has been put in the previous chapter, in the sense that Monsanto relies heavily on an extensive network to exert dominance. It is by having a network that the corporation can construct legitimacy and ideology, but it is also the network, and the individuals that are part of it, that create such an advantageous ideological position. This will be emphasized in the three parts of the section, which tackle questions relative to drawing boundaries, persuasion through the emphasis on communication and, at last, using crisis as ideological opportunities.

1: Drawing boundaries: In-Groups and Out-Groups



To begin with, Monsanto constructs ideology and legitimacy by establishing a dichotomy between scientists, researchers, journalists and political public figures part of their network, and others that share opposite views on agribusiness and Monsanto's activity. There are multiple and different lexical fields that highlight the boundaries set by the corporation and its allies between the in-groups and out-groups. However, they have in common to reflect a rather Manichean, in other words binary or dualistic, pattern of identification. Either individuals and entities part of the Monsanto network are good, either the ones against such network are bad. A dichotomy often at work throughout the dataset is the scientific community on one side, and unscientific or anti-scientific on the other. As a matter of example, the expressions “anti-science/scientific”, “unscientific” or “non-science/non-scientific” appear eleven times throughout the analyzed dataset. Yet, these derogatory words are far from being the only used in internal communications. As such, Eric Sachs from the regulatory team at Monsanto use very degrading words to characterize the GenØk group, another label for a non-profit Norwegian foundation focused on biosafety and innovation which is the National Centre for Biosafety. Wayne Parrot, a researcher from the University of Georgia and part of the academic network created by Monsanto, sent to Eric Sachs an email in regard to his participation in the Ad Hoc Technical Expert Group (AHTEG) that he “will get to parley with such ~~idiots~~ luminaries [...], get to know a lot of other ~~zealots~~ influential characters”¹²⁵. Such expressions are frequent in internal communications, especially when either the sender or recipient is from the academic domain. Overall, there is a pattern for researchers to discredit the work of others that oppose their views, hence the frequent mention of “anti-

¹²⁵ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.9



science”. This targeted discrediting will be further emphasized in the next chapter when focusing on how Monsanto manages threat. In this part, using such expressions appear as a strategy to draw boundaries between two camps. One of the camps is referred with derogatory terms in the dataset, but Monsanto and its allies are labelled as “true heroes”¹²⁶, for trying to spread scientific facts and overall, the truth. There is a specific lexical field around the researcher and professor at the University of Florida, Kevin Folta, for which people “sung your praises”¹²⁷ and “wonder if you are a superhero”¹²⁸. Overall, there is an extremely positive lexical field in the emails concerning the work of academics and researchers to help Monsanto establish and sustain strategies, especially in regard of scientific communication and opposing threats to the corporation. Open communication is central to the construction of ideology and legitimacy. Individuals part of Monsanto company or of its network emphasize on common themes, such “the safety and benefits of GM technology”¹²⁹ and “explaining why biotech derived foods are the safest and greenest in the industry of ag and worth of support”¹³⁰. This is at the heart of the following part.

2: Emphasis on communication

Another striking element from the dataset, which highlights the ideological analogy in the case of Monsanto is the emphasis on communication, how much it is

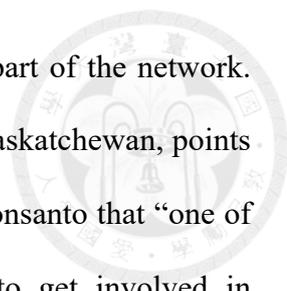
¹²⁶ Ibid. pp.9

¹²⁷ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.16

¹²⁸ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.29

¹²⁹ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.31

¹³⁰ File 11: Kester, Kirby LBASFDrake, LisaMonsantoCoyKetchum. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.11



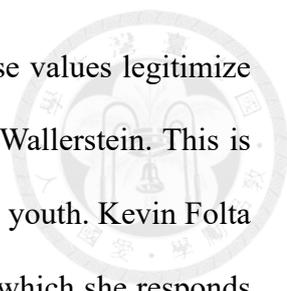
valued by employees of the company as well as other individuals part of the network. This is something Stuart Smyth, researcher from the University of Saskatchewan, points out when writing to Camille Ryan, a colleague and researcher of Monsanto that “one of the things I’ve found quite appealing was his call for people to get involved in communicating about science and ag”¹³¹. What matters with communication, more than spreading positive information on Monsanto, is for it to make a change. Kevin Folta illustrates well this, as he corresponds a lot with academic colleagues or employees from Monsanto on how much he is able to make people switch their views from negative to positive on GMOs and overall biotechnology. He is also an excellent science communicator, in the sense that he can share scientific explanations and arguments with people without a scientific background. He is thus a great ally for Monsanto, which is probably one of the reasons why he appears as much in the dataset: his influence is considerable, and especially to the ideological dominance of Monsanto as hegemonic. As such, he informs Cathleen Enright, the executive director of the Council for Biotechnology Information (CBI) that he assists to sessions on biotechnology during some periods one to three times a week because “it is amazing to see how people flip when someone holds their hand”¹³² and that by communicating, “we’re changing some hearts and minds”¹³³. Through communication, the corporation and the network can appeal to the “emotional capital”¹³⁴ of people, with the idea that one goal of discussion would motivate and spark interest in people, the consumers and more broadly the public opinion, of the positive effects of biotechnology and agribusiness, and even the necessity

¹³¹ File 52: Smyth, Stuart University of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4

¹³² File 3: Folta, Kevin M University of Florida Drake, Lisa Monsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.32

¹³³ Ibid. pp.32

¹³⁴ File 2: Folta, Kevin M Kevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4



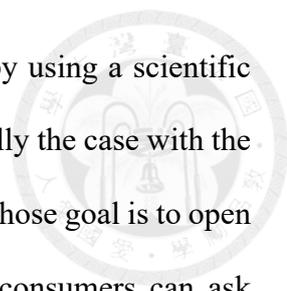
for biotech modified foods for food security and sustainability. These values legitimize dominance and fall directly under the ideological analogy made by Wallerstein. This is also why Monsanto and its network sometimes target specifically the youth. Kevin Folta asks for example to Cathleen Enright for “resources for kids”¹³⁵, to which she responds affirmatively. Keith Reding, from the regulatory team of Monsanto, explains that he has “an upcoming talk to a high school biology class”¹³⁶ to Kevin Folta. They also emphasize communication with students, especially considering their extensive academic network, many being university professors. When Jennifer Yates from Monsanto contacts the professor Michelle Samuek-Foo, she asks for an opportunity as researcher at Monsanto to speak about Monsanto and related topics such as “food safety, policy, regulatory science, or more generally about GMOs”¹³⁷. Such efforts for communication are indeed worth it, as William Urquhart sends a note of appreciation to Kevin Folta after starting to work for two years right after graduate school. He explains that he knows how the safety of their products is essential to Monsanto, but he struggles answering questions in his private life on his work as he feels uncomfortable to discuss such controversy topics. However, seeing how academics communicate positively about Monsanto’s products and methods, with an open discussion have made him feel more confident in addressing difficult questions¹³⁸. Such statement reinforces how well Monsanto uses communication to construct its legitimacy.

¹³⁵ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.31

¹³⁶ File 40: Bill, SeglarBillDuPont-PioneerMonsantovan Mierlo, Andria NicoleBarnes, CarlyKetchum. (2014; 2015). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.8

¹³⁷ File 43: Barnes, CarlyCBKetchumDudinMonsanto. (2015). *Email Communications with Kevin Folta regarding media opportunities*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.12

¹³⁸ File 10: Folta, Kevin MUniversity of FloridaBayerSpurgat, JenniferKris, Alan. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.46



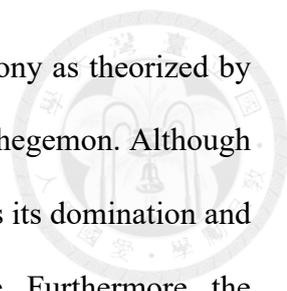
The legitimacy is also constructed through communication by using a scientific perspective to defend positive views about Monsanto. This is especially the case with the website GMO Answers, already mentioned in the previous chapter, whose goal is to open discussion about inquiries and concerns on biotechnology, where consumers can ask questions and be answered by a scientific expert. Considering the integration of the academic domain which Monsanto put into work to exert dominance, the corporation benefits from a whole network of academic experts that can assert their scientific legitimacy. This is done through either very true, even raw language used by the scientific experts, or by going straight to the point, holding that they need to go into in-depth explanations as they are the expert so they must know the truth. The first case is exemplified with a long response to a question on free inquiry and patent protection on GMO Answers, to which Kevin Folta, the expert, responds with multiple details, lots of punctuation¹³⁹. On the other hand, Kevin Folta answers a question on cancer related to GMOs, stating that “the basic science says there’s no plausible way these well understood genes could cause or promote cancer”¹⁴⁰. These mechanisms put into perspective the construction of legitimacy through open discussion, scientific communication from experts which distil ideological elements while serving as legitimacy.

3: Crisis as ideological opportunity

The last element which participates to build ideology and legitimacy for Monsanto is to use moments of crisis for the company as an opportunity. Indeed, there are multiple examples throughout the dataset when an uncomfortable situation can turn into a way to

¹³⁹ File 16: Barnes, CarlyKetchum. (2013; 2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.37

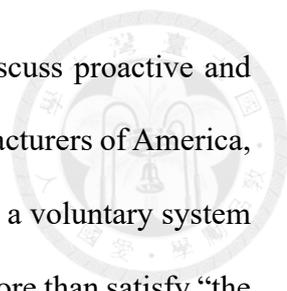
¹⁴⁰ Ibid. pp.3



convince more people. This can be compared, in the case of hegemony as theorized by Wallerstein, to armed conflicts which end up being victory for the hegemon. Although such conflict could be threat for the hegemon, the outcome reinforces its domination and participates in portraying the power as unassailable and absolute. Furthermore, the hegemon is more likely to go to war when he knows he is more powerful than his opponent and uses such armed conflict as a strategy to reaffirm its hegemony. In the case of Monsanto, it is one of the objectives of GMO Answers. Indeed, the website is affiliated with public relations companies and organizations that are working hand in hand with agribusiness, and especially Monsanto. They are a client of the PR firm Ketchum for example, which are often in the dataset in contact with either academics part of the network or direct Monsanto employees. An excellent example to illustrate this strategy is in regard Tom Calarco's questions to Kevin Folta, with many correspondences held through personal emails rather than the GMO Answers website. Kevin Folta shares to Carly Barnes from Ketchum about how much he communicated with Tom Calarco, in hope of convincing him of positive aspects of GMOs and Monsanto. Carly Barnes responds to Kevin Folta, saying that "maybe he will start constructively contributing to the GMO conversation by submitting questions to the site from now on"¹⁴¹, urging the professor to "direct him to <http://www.gmoanswers.com/ask> if he continues to contact"¹⁴² him. This way, the arguments put forward by Kevin Folta can be seen by anyone else, and keep on distilling Monsanto's ideology. A crisis is also the time for creative solutions and putting into work some strategies not considered before the crisis happened. As a matter of example, the Monsanto crisis on GMO labelling, previously mentioned in chapter four, fostered creative strategies to flip the discussion on labelling. Kevin Folta asks Eric Sachs

¹⁴¹ File 11: Kester, Kirby LBASFDrake, LisaMonsantoCoyKetchum. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.45

¹⁴² Ibid. pp.45



to be directed to someone from the company with whom he can discuss proactive and precise labelling. He proposes that Monsanto and the Grocery Manufacturers of America, an association uniting many giants of the agribusiness, come up with a voluntary system that “would advance education, provide scientific information, and more than satisfy “the right to know””¹⁴³. The right to know is the argument which make pro-labelling people, against which Monsanto tries to fight back, and that Kevin Folta suggests countering. However, it is quite interesting to observe that Monsanto uses open discussion and communication strategically but opposes such transparency on its products. Harriet Friedmann also talks about how corporations are taking crisis as an ideological opportunity. Indeed, she talks about how agribusiness corporations created a crisis where cultivated crops developed a certain resistance to chemicals. As such, she emphasizes that “now the corporations respond to the crisis from which they grew by offering the solution of biotechnology [...] mainly devoted to overcoming limits to the use of toxins”¹⁴⁴. The corporations then promote a narrative about how their products permit to sustain food safety, when the author points out that, with this dominant perspective, “the dependence of farmers on industrial inputs that continually disrupt and simplify natural cycles will deepen and the manufacture of replacements for these cycles will grow”¹⁴⁵.

The emphasis on communication that Monsanto displays in the emails is controlled. Indeed, it is strategically tailored to foster legitimacy around Monsanto’s products and methods, and the company’s overall position as the hegemon. As such, it

¹⁴³ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp49

¹⁴⁴ Friedman, H. (2000). *What on Earth is the Modern World-System? Foodgetting and Territory in the Modern Era and Beyond*. *Journal of World-Systems Research*, 6(2), 480-515.

¹⁴⁵ Friedman, H. (2000). *What on Earth is the Modern World-System? Foodgetting and Territory in the Modern Era and Beyond*. *Journal of World-Systems Research*, 6(2), 480-515.

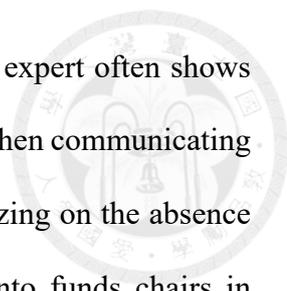
highlights well how much strategies are part of their internal communications, in an attempt to maintain dominance through ideology. It is also the case through the control of knowledge a strategic management of expertise, which will be tackled in the following section.

Section 2: Knowledge Control and Strategic Management of Expertise

After tackling the construction of legitimacy through some apparent strategies from the dataset, it is essential to look at other mechanisms that reinforce the ideological analogy identified by Wallerstein to permit Monsanto to gather the three instances of hegemony. This is done by maintaining control on what counts as knowledge, fostering the dichotomy between good and bad science, and by managing internally to the network expertise.

1: Controlling who counts as experts

From the data, there are a few elements that show how Monsanto shapes his network around what counts as an expert. This participates to the idea of legitimacy, as mentioned previously, as counting trusted scientists in its network enables Monsanto to leverage a certain validity in the discourse. To that, Monsanto employs public relations companies to put forward their experts, through mediatization of their work. This is done especially by Ketchum in the dataset, which records high numbers of consultation on their website GMO Answers. The PR company has the power to elevate certain profiles on its website, such as making their best researchers to “show up in a different color with



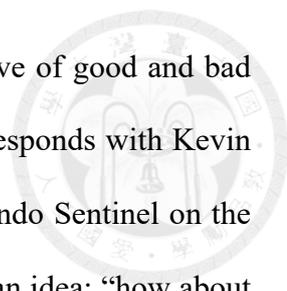
“independent expert” above the name”¹⁴⁶. The label of independent expert often shows up in the dataset, as it leverages legitimacy to academic researchers when communicating positive perspective on agribusiness products and methods, emphasizing on the absence of risks of modified organisms. Yet, as mentioned before, Monsanto funds chairs in universities where researchers are labeled as independent, and has an oversight authority on studies conducted on the products the corporation develops, through licenses and mandatory agreements. Ketchum can also bring to the forefront chosen pieces of work, which is something done through GMO Answers. As such, Kevin Folta asks for Carly Barnes, from Ketchum, to “PLEASE put them up on GMOanswers”¹⁴⁷ when talking about two pieces that got minimal exposure and validate the dominant discourse of advantages of bioengineered products. Additionally, scientists part of the network introduce peers to the network, when they deem them as fit to perpetuate the narrative of Monsanto. As a matter of example, Kevin Folta introduces to Emily Coy and Kevin Oates from Ketchum a student interested in communications and advocacy for science to create a position for her in the team of GMOanswers, for whom he states that she would be a great addition as he is very impressed by her¹⁴⁸.

Controlling the characteristics of expertise also means using the academics as a weapon, essentially by promoting the idea of real science as opposed to bad or anti-science. Such a dichotomy has been the object of the first part of the chapter, but here, it needs to be emphasized by questioning how it is weaponized in the media. The fourth chapter showed how Monsanto uses media, the process of its integration to assert dominance. For the sake of this part, it would be a matter of discussing how existing

¹⁴⁶ File 20: Folta, Kevin MKevinUniversity of Florida. (2013; 2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

¹⁴⁷ File 21: Daly, Carolyn ADaly, CarolynMonsantoMonsanto CompanyLohuis, Mike. (2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.19

¹⁴⁸ Ibid. pp.12

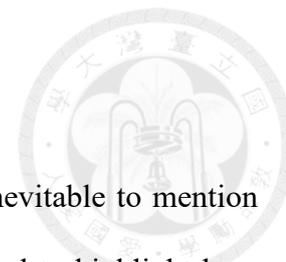


medias, independent ones, are being leveraged to spread the narrative of good and bad science. For example, Bill Mashek, vice-president at Ketchum, corresponds with Kevin Folta and Darryl Owens, editorial writer and columnist of The Orlando Sentinel on the topic of a column on bioengineered products. Bill Mashek suggests an idea: “how about writing a column about your efforts to do a pro/con columns on GMOs, but finding that the con side was unable/unwilling to engage in thoughtful manner”¹⁴⁹. Through shaping the discourse around the lack of scientific ground for opposing GMOs, Monsanto and its allies instill a specific ideology around the scientific legitimacy and supremacy of agribusinesses. Additionally, through answers on the GMO Answers website, scientists discredit authors, asserting once again their legitimacy and the dichotomy between good and bad science. As such, Kevin Folta points out the lack in even peer-reviewed and trusted articles, explaining for example that the reason for the publication of a critical article of biotech on Scientific American by the editors, which he reckons as historically pretty good, must be found with “that this was in the transition in 2009 when John Rennie was leaving and perhaps something a little flimsy snuck in”¹⁵⁰. Such strategies of discrediting authors and articles will be further discussed in the next chapter when reviewing how Monsanto tackles opposing movements. What could be added, still, is that Monsanto embedded academics tend to talk of manipulating scientific language, doing an activist instead of a scientific job, and overall seek to frighten the public rather than providing true notions on the safety of biotech products.

¹⁴⁹ File 12: Reding, KeithMonsanto. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.37

¹⁵⁰ File 16: Barnes, CarlyKetchum. (2013; 2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.37

2: Internal shaping and reviewing of knowledge

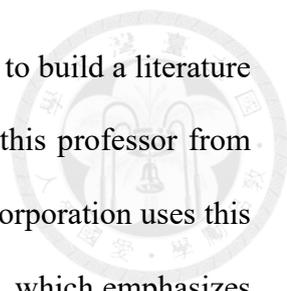


To continue with the idea of knowledge control, it seems inevitable to mention previous elements from chapter four. Indeed, a case was emphasized to highlight how Monsanto in appearance enable independent researchers to conduct studies on their products through agreements and licenses. However, these enable Monsanto to have an oversight on the results and be in a position to review and put pressure when they are not satisfied with the conclusions¹⁵¹. There are other strategies that Monsanto mobilize to shape knowledge, and it is by being at the origin of the production of knowledge, of academic scientific work which ends up being peer-reviewed and used for working groups from governmental institutions and political organizations. This is corroborated in the dataset, when Eric Sachs corresponded with Kevin Folta by “sharing information CONFIDENTIALLY”¹⁵², so that “the attachment provides background information that is intended to help in drafting commentary related to the study”¹⁵³, study for which Monsanto provided the relevant information and findings. As such, Monsanto seeks from close trusted scientists to peer-review the studies they helped directing without apposing their name. To permit this, Monsanto also provides confidential information to selected independent researchers, guided by the motivation to internally shape knowledge and maintain the hegemonic ideology spread in the literature. This has been emphasized as ghostwriting in the scientific literature. Leemon McHenry analyzes Monsanto’s use of ghostwriting, which he defines as the practice for a company to use the name of a

¹⁵¹ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.45

¹⁵² File 6: Greene, TomPioneerDuPontGreene, Thomas WGreen, MargaretMasri, SaadWall, ErikaSchmidt, Anna-MaryJames, DelanoCenter for Plant HealthCanadian Food Inspection AgencyDickenson, BrentZhang, YuanjiPetrick, Jay SIVashuta, SergeryMarshall, William SFolta, Kevin M. (2014). *Email communications between Kevin Folta and various chemical industries*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.21

¹⁵³ Ibid. pp.21



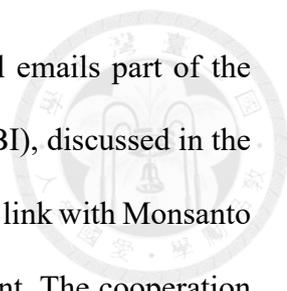
prominent academic researcher to write and publish article, “in order to build a literature base to support products and neutralize criticism”¹⁵⁴. According to this professor from California State University, there are many examples for which the corporation uses this practice, the name of Henry Miller being the most scandalous reveal, which emphasizes the strategy of shaping knowledge. He explains that this is also a strategy for relevant journals to accept the publication of articles that would have lacked credibility if written by industry employees. Monsanto also uses its academic network to display convincing arguments, emphasizing on the scientific legitimacy, like Carly Barnes did for a student event, using a video recorded of one of the class lectures he gave¹⁵⁵ as a resource to talk about opportunities around GMOs. At last, Monsanto exerts a control on knowledge by reviewing and labeling what is legitimized knowledge to his network. In a private group discussion through emails called AgBioChatter, which will be further developed in the analysis, there are often shared reviews on papers, scientific works or press articles. They also use this group discussion to share impressions on scientists and journalists, to map whom to consider as an ally or worth of discussing knowledge, and who is not¹⁵⁶. Similarly, Eric Sachs shares on the group discussion Monsanto’s analysis on reports, in an effort for others to “use the content and scientific information to help address any false or misleading statements in the media”¹⁵⁷. The strategy in reviewing also entails doing reviews, peer-reviews, to give more credit to an article. Bruce Chassy and David Tribe, who both appear in the data, are founders of a website called “Academic Review: Testing Popular Claims Against Peer Reviewed Science”. Monsanto has actually a role in this

¹⁵⁴ McHenry, L. B. (2018). The Monsanto Papers: Poisoning the scientific well. *Journal of Scientific Research and Technology*, 13(3), 227–234. pp.30

¹⁵⁵ File 12: Reding, KeithMonsanto. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.7

¹⁵⁶ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.27

¹⁵⁷ Ibid. pp.31

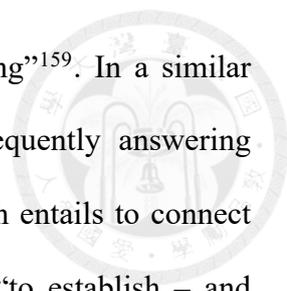


third-party platform, as Leeman McHenry also shows from internal emails part of the Monsanto Papers¹⁵⁸. The Council for Biotechnology Information (CBI), discussed in the analysis, is also a major funding source for Academics Review, whose link with Monsanto is established as one of its directors is also Monsanto's Vice President. The cooperation develops as such internal strategies in the created network to exert a control knowledge, reinforcing the boundaries between what is deemed as true, reliable and trustable science, and their opponents. In the network, they establish directives for their allies to spot and repudiate scientific work that could threaten Monsanto.

3: Training the network

The previous part ended with the observation from the dataset of Monsanto to use its network the shape knowledge and providing guidelines to refute opponents' pieces. This is relative to what is at heart in this part, which focuses on how Monsanto trains the network. Indeed, this entails sharing directives and views on opposing works. It also involves sharing strategies, often on the AgBioChatter, of methods to better Monsanto's communication, and overall positive biotech perspectives, in discussions or meetings. The previous chapter mentioned how employees of Monsanto and academics resort to participating in numerous conferences and panels to learn from each other and shape commonly their knowledge and harmonize strategies. Along the same lines of sharing strategies, the AgBioChatter serves as such. For example, Camille Ryan from Monsanto shares her conclusions on a social scientist's work on how to tackle the 'backfire effect' of communication and how to be able to circumvent it to "connect values and build

¹⁵⁸ McHenry, L. B. (2018). The Monsanto Papers: Poisoning the scientific well. *Journal of Scientific Research and Technology*, 13(3), 227–234. pp.9



relationships while providing a foundation for further understanding”¹⁵⁹. In a similar manner, GMO Answers community manager sent to experts frequently answering questions an email to invite them to an ambassador program, which entails to connect these experts through monthly webinars, with the goal for them “to establish – and ultimately maintain – an expert dialogue around GMOs and food production”¹⁶⁰. By regrouping scientists sharing positive views on biotechnology and agribusiness, these individuals are able to exchange knowledge, establish new strategies. The network all serves to conduct training, in an attempt to manage expertise. The dataset permits such an observation, with John Vicini from Monsanto contacting Kevin Folta, on the recommendations of Monsanto colleagues Eric Sachs and Keith Reding, often in contact with the professor, to conduct a training for animal scientists to teach them how to communicate on GM issues¹⁶¹. Kevin Folta offers a combination approach and attests to the interest he, as well as cattlemen and dairy industries have for these topics.

As such, Monsanto relies on his network, and especially the academic one to control and frame knowledge, expertise, and legitimacy. Such strategies participate in fostering ideological dominance for the corporation, which is sustained and even amplified by cultivating ties with influential groups. This has been demonstrated in the previous chapter, which focused on the corporation’s integration of several domains, which is at the core of Wallerstein’s first analogy of hegemony. The following and last section focuses thus on influence networks, mentioning the integration but even more so

¹⁵⁹ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.22

¹⁶⁰ File 52: Smyth, StuartUniversity of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.150

¹⁶¹ File 8: Entine, JonVicini, JohnMonsanto. (2014). *Email communication with Kevin Folta regarding GMO Answers and outreach*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4

pointing out mechanisms and strategies that Monsanto implements to sustain after establishing its dominance.



Section 3: Alliances, Coalitions and Influence Networks

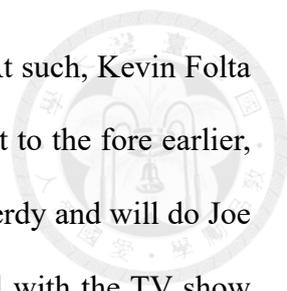
This final part concludes the chapter on emphasizing how Monsanto mobilizes its influence networks and relies on alliances and coalitions to sustain its hegemony. These networks permit Monsanto to disseminate a legitimized ideology. To tackle these mechanisms, this section will develop the academic embedding, central to the previous chapter and further elaborated in a first part by focusing on its leverage. A second part will look at strategies through political and institutional alliances, before providing some conclusions by undertaking to show how Monsanto keeps everyone in the loop.

1: Leveraging academic networks

To begin with, it is advisable to start by showing how Monsanto relies on academic professors to leverage and use their legitimate work, and overall relying on academic work as PR. Jay Byrne, president of the public relations firm v-Fluence and previously director of corporate communications at Monsanto¹⁶², suggests Kevin Folta to “turn is powers of persuasion”¹⁶³, emphasizing on his great skills of communication and how he works successfully at sharing positive perspectives on biotech and agribusiness. Additionally, academics spread knowledge through their research work, their teaching

¹⁶² Malkan, S. (2025, February 3). Jay Byrne: Meet the man behind USAID-funded attacks on pesticide critics. *U.S. Right to Know*.

¹⁶³ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1



position as well as their scientific legitimacy on various platforms. At such, Kevin Folta informs Jon Entine, whose connections with Monsanto were brought to the fore earlier, of having “a great talk with Cara Santa Maria on her podcast Talk Nerdy and will do Joe Rogan’s in a few weeks”¹⁶⁴ and appearing live on the news channel with the TV show Breaking the Set by Abby Martin. This shows the diversity of platforms and formats through which academics can communicate and expand Monsanto’s influence through shaping knowledge. Furthermore, Monsanto is directly involved in academic networks and sustain its ideological dominance by offering for example to prepare resource data cards that Kevin Folta could hand out at his training¹⁶⁵, and offers to customize the content based on his and the audience’s needs. This is a common strategy for Monsanto, as Aimee Hood, employee of the corporation, explains that they make use of pre-established templates, tailored to Monsanto’s narratives. Moreover, academic embedding enables scientists to introduce trusted colleagues into Monsanto’s network. This implies an evolving loop, a mechanism that, more than establishing, sustains the ideological hegemony. For example, Kevin Folta introduces students quite often to the network¹⁶⁶. Monsanto also contacts trusted academics to connect the corporation to some colleague likely to be integrated to the network, like Martha Smith from Monsanto asks Kevin Folta to share her contact to potential collaborators in Florida. In an opposing dynamic, academics ask for Monsanto to consider integrating new experts, like Kevin Folta suggests for specific themes on GMO Answers¹⁶⁷ or more broadly ones that could be fit

¹⁶⁴ File 5: Folta, Kevin M. (2014). *Email communications between Kevin Folta, Cliff Gauldin and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.5

¹⁶⁵ File 14: Hood, AimeeAimeeBIOHall, KateReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

¹⁶⁶ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.29

¹⁶⁷ File 11: Kester, Kirby LBASFDrake, LisaMonsantoCoyKetchum. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.38

to internalize Monsanto narratives, by sharing similar views. Kevin Folta introduces some scientists to Monsanto, mentioning that they “are really mad right now because of labeling initiatives, the golden rice thing”¹⁶⁸.

At last, it is essential to mention that Monsanto and its allied organizations resort to funding academic work or initiatives to sustain their narratives and ideology in the literature. It has been mentioned that Monsanto employs ghostwriting practices. As such, Mike Lohuis, director of scientific engagement at Monsanto, signed and sent a letter to Kevin Folta, stating for the professor to “accept this unrestricted grant in the amount of \$25,000.00 which may be used at your discretion in support of your research and outreach projects”¹⁶⁹. Although the content for which this grant has not been disclosed, it appears that Monsanto makes use of money for academic embedding, probably in a gesture of recognition and appreciation for Kevin Folta’s intensive and motivated advocacy for bioengineered products commercialized by the corporation. Monsanto also supports workshops and conferences, such as one in Berkeley and the annual ICABR conferences¹⁷⁰. A final example could be put forward: Kevin Folta and Jon Entine organized together a program called the Coordinated Social Media Initiative, supported with a funding amounting to \$15,000 through an invoice sent to the Genetic Literacy Project¹⁷¹. These three types of projects exemplify how Monsanto makes use of funding to keep benefiting from academic embedding.

¹⁶⁸ File 15: Folta, Kevin M/Monsanto/Quarles, Lee. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.43

¹⁶⁹ File 21: Daly, Carolyn A/Daly, Carolyn/Monsanto/Monsanto Company/Lohuis, Mike. (2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.5

¹⁷⁰ File 52: Smyth, Stuart/University of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.104

¹⁷¹ File 5: Folta, Kevin M. (2014). *Email communications between Kevin Folta, Cliff Gauldin and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.10

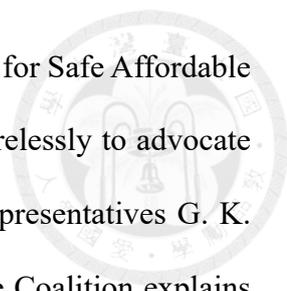
2: Political and organizational alliances

After reviewing mechanisms for sustaining the advantages relative to Monsanto's academic network, it seems necessary to mention how other networks rely on their influence to permit for Monsanto keep its dominant position. As such, two mechanisms will be emphasized: first, the resort to the network to leverage influence in political situations, and second the recourse to coalitions to nurture Monsanto's influence. A few emails from the dataset attest of the strategies established by Monsanto to leverage voices and influence in a political context. Lisa Drake from Monsanto informs Kevin Folta of an event organized by Monsanto, the Farm to Table Harvest, with targeting an audience of "presidents or directors of the many biomedical and device companies"¹⁷² of the region, for them to learn et be more comfortable with notions related to agribusinesses and biotechnology. But what is the most important information from this event is that they also invited the political figures of Boulder County for a "positive and uplifting talk"¹⁷³. Similarly, a two and a half day meeting was organized to display biotechnology under a great light to political figures, to which Kevin Folta was invited to participate and emphasize communication on science¹⁷⁴. It seems necessary to also mention the numerous public relations companies for which Monsanto is a huge client, to leverage influence on political situations. The labeling proposition in California, mentioned in the previous chapter, works as a great example. Additionally, Monsanto relies heavily on alliances and coalitions with other companies from the same domain of business, or with similar interests. In chapter four, the relationship between other giants of agribusiness and Monsanto has been demonstrated. Here, the focus is on coalitions that uphold a great

¹⁷² File 9: Savage, SteveFolta, Kevin M. (2013; 2014). *Email communications between Kevin Folta and various chemical industries*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.11

¹⁷³ Ibid. pp.11

¹⁷⁴ Ibid. pp.41

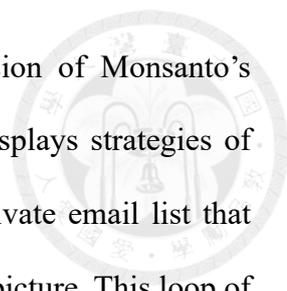


power of influence. As such, Monsanto is a member of The Coalition for Safe Affordable Food, which advocates for biotechnology. The Coalition worked “tirelessly to advocate for passage of the Safe and Accurate Food Labelling Act”¹⁷⁵ by Representatives G. K. Butterfield and Mike Pompeo as Claire Parker, spokesperson for the Coalition explains to Kevin Folta. Being part of the Coalition means for Monsanto to be able to sustain narratives in line with the corporation’s interests and being offensive, as their aim is “to counter unsubstantiated claims and communicate to policy makers and consumers the fact about the legislation and this vital technology”¹⁷⁶. In addition to that this Coalition, Monsanto is part of the Grocery Manufacturers of America (GMA), a huge food lobby group in the United States whose influence is colossal in the United States’ politics relative to the food industry. Monsanto also helps organizing workshops for associations that gather similar interests, as Brad Gabor from the corporation explains when mentioning the American Association of Cereal Chemists (AACC). For Monsanto, being part of these alliances enable the corporation to make sure to always have its own interests protected in the political sphere. It also permits Monsanto to keep an extensive network from all domains: if it has been shown before that Monsanto makes sure to keep an advantageous position in the academic sphere, always expanding its influence and benefiting for many reasons of such a network, it is even more so the case with the political and industrial networks that grant Monsanto an unthreatened dominance.

3: Keeping everyone in the loop: AgBioChatter

¹⁷⁵ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4

¹⁷⁶ Ibid. pp.4



To conclude with this chapter and the ideological dimension of Monsanto's prevalence, it seems interesting to look at a special case, which displays strategies of Monsanto to keep everyone in the loop. The AgBioChatter is a private email list that shows for a microanalysis what Monsanto's strategies are in the big picture. This loop of discussion gathered Monsanto executives, DuPont's former director of scientific affairs, as well as two other biotechnology industry trade association high ranking employees, and many academics that all were connected to the industry, for many Monsanto¹⁷⁷. In this group discussion, all domains except political are represented, attesting for the integration of all domains made by Monsanto. The AgBioChatter enabled the people from the loop to discuss many topics, exchange information and establish strategies. It could have been invitations to events, like for the Borlaug World Food Prize 2013¹⁷⁸, or to use the number advantage to shape public opinion. For example, Drew Kershen from the University of Oklahoma sent on the chatter a response to a post on the EcoCatholic blog claiming that actions such transgenic crops and modern biotechnology were "Moment of Grace"¹⁷⁹, to which Eric Sachs responded "please provide a link so those of us on social media can amplify it"¹⁸⁰. Finally, the chatter serves to discuss sensitive political situations, to harmonize a strategy. Eric Sachs explains that he understands concerns about some of the people on the chatter about the NRC Panel process, stating that "to make progress we need to engage skeptical lay audiences in a different manner"¹⁸¹ which is the reason why he decided to collaborate with the panel. The AgBioChatter corroborates all the strategies

¹⁷⁷ Malkan, S. (2022). *Merchants of Poison: How Monsanto Sold the World on a Toxic Pesticide*. Center for International Biosecurity and Biotechnology.

¹⁷⁸ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4

¹⁷⁹ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.50

¹⁸⁰ Ibid. pp.50

¹⁸¹ Ibid. pp.42-43

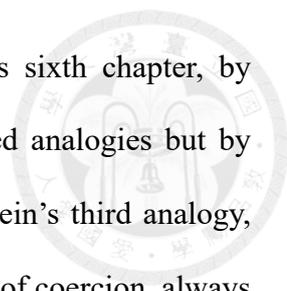
laid by Monsanto, in a private group of emails, an internal communication which permitted the corporation to sustain its hegemony.



The second chapter emphasized the strategies reveal in the dataset how Monsanto's internal practices reflect Wallerstein's ideological analogy. These are concrete and operationalized forms of hegemonic maintenance, that illustrate how Monsanto combines ideology, knowledge control and alliance to sustain dominance, applied to modern agribusiness. The corporation relies heavily on the interdependence of networks, through their expansion and reinforcement, and how they demonstrate a rather dynamic adaptation to challenges. As such, it sets the stage to examine how the corporation mitigates opposition, which refers also the Wallerstein's second analogy for hegemony. This will be the core of the next chapter, that will further expand on the ideological dimension and integrations of multiple spheres of influence.

CHAPTER 6: MANAGING RESISTANCE: CONTAINMENT AND NEUTRALIZATION STRATEGIES AT MONSANTO

To this point, the analysis focused on testing Wallerstein's theory of hegemony by focusing on the three analogies he makes when identifying patterns central to the three hegemonies that existed in the history of the modern world-system. The fourth chapter demonstrated the integration of multiple domains of influence by Monsanto, which could refer to both the first analogy, the economic one, and the second analogy, political and ideological. The latter is further demonstrated in chapter five, which tackles strategies to sustain the corporation's hegemony. Here, the political and ideological dimensions are rather clear, and emphasized throughout the internal communications of Monsanto and its network, in the sense of outsiders to the corporation that work for the company's interests in their respective domain. It is especially the case in the academic sphere, where many independent researchers serve Monsanto's narrative and participate through shaping a legitimate version of knowledge. This chapter is constructed on the basis of what has already been established: mechanisms for establishing dominance have been identified, and internal strategies to sustain and in a sense perpetuate the hegemony have been emphasized. At this stage, it is important to acknowledge challenges to the hegemony, and even more pertinent, to look at **what tactics does Monsanto employ to neutralize and contain anti-systemic challenges?** The wording of anti-systemic is meant in a sense that Monsanto forges a political and ideological structure, semblable to what could be deemed as a system. Thus, anti-systemic challenges are movements that



oppose Monsanto's hegemony and makes for its dominance. This sixth chapter, by answering this subquestion, will elaborate on the already developed analogies but by modifying the focus. It will also be the occasion to tackle Wallerstein's third analogy, which coercion. This analogy entails militarized weapons and means of coercion, always observed during a hegemonic period in the modern world-system as opposing forces attempt to overturn the power hierarchy. In the case of Monsanto, the corporation does not possess an army and does not resort to such means. As such, the chapter will be divided in two parts to answer the third question. First, the focus will be on tactics of monitoring and discrediting opposition. The focus of the second part will be the weaponizing of knowledge in the struggle for hegemony. In both parts, the dataset will serve as the basis to identify specific mechanisms, as the thesis lies on internal communications to bring out certain elements and patterns.

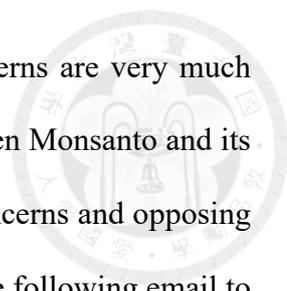
Section 1: Monitoring And Discrediting Opposition

To begin the chapter on the managing of resistance, one must identify ways for Monsanto to identify opposition, and early mechanisms of containment such as discrediting the opponents. To tackle this, the first section is structured to evoke primarily the surveillance mechanisms in the dataset and how they construct early awareness. Then, this section will review two principal strategies, which are essentially part of the academic sphere as the data provided interesting intel on that, through discrediting opponents and identification and targeting.

1: Surveillance and early awareness

Monsanto operates an intensive work of surveillance of what is said about the corporation, as well as anything that would involve topics relative to agribusiness, in a positive as well as negative perspective. It has been demonstrated in the previous chapter, as Monsanto uses its extensive network to make sure that it has, in a figurative sense, eyes everywhere. This is the reason why it attempts to ever expand its network, not only to exert influence, but to be aware of more threatening pieces of work concerning the company. As such, internal communications of Monsanto often concern offensive pieces of writing, which they circulate throughout the network to inform as many allies as possible. This was one of the objectives of the AgBioChatter, but also the reason why Aimee Hood from Monsanto sent to her colleagues Keith Reding about Jeffrey Smith's latest piece of writing, which he then sent to Kevin Folta¹⁸². In this sense, they keep track of their opponents' pieces. They also identify what could be opposing arguments through common critics gathered by their network of information, especially on the academic side, but also in public relations and medias. As such, Jon Entine, a figure in the media industry who protects Monsanto's interests through the Genetic Literacy Project, gathered the ten major GMO concerns and sent an email to collaborators from public relations and academic backgrounds, all often mentioned in the dataset: Jay Byrne, Val Giddings, Bruce Chassy and Kevin Folta. Some of these concerns are regarding labeling, the dangers of glyphosate and the necessity to restrain its use, independent versus industry safety studies as well as what he calls revolving door, in the sense of why there are so many former

¹⁸² File 10: Folta, Kevin MUniversity of FloridaBayerSpurgat, JenniferKris, Alan. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.9



Monsanto and Big Ag executives in regulatory roles¹⁸³. Such concerns are very much spread in medias and public opinion, and identifying these enable then Monsanto and its collaborators to prepare and shape their discourse to disseminate concerns and opposing views. Mindy Whittle, from the soybean industry affairs lead sent the following email to Eric Sachs: “CFI would like some bullets or an idea on what “science” the anti-GMO community is using in their rhetoric”¹⁸⁴, continuing with “a project you are getting up and running that will debunk the various “science” studies the antis use”¹⁸⁵. As there are two major opposing fronts in the agribusiness literature, the ones that rather focus on the positive perspectives and interests of biotechnology, and the ones opposing it by emphasizing the dangers and negative impacts of such products and practices. Something to consider is that sometimes, the two are dissociable: some could oppose the industries of agribusiness and see the opportunities for biotechnology. In the dataset, Cathleen Enright explains to Kevin Folta that she attended a conference with an “audience of very emotional anti-GMO foodies”¹⁸⁶. However, after spending multiple hours discussing with some individuals from this audience, she realized that they were not opposed to GMOs but were rather against “what they think Monsanto is, federal food policy, patents, etc”¹⁸⁷. As such, by attending conferences that are displaying opposing views, Monsanto and its collaborators can track arguments and more generally carry out monitoring and early-warning activities.

¹⁸³ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.9

¹⁸⁴ File 9: Savage, SteveFolta, Kevin M. (2013; 2014). *Email communications between Kevin Folta and various chemical industries*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.5

¹⁸⁵ Ibid. pp.5

¹⁸⁶ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.31

¹⁸⁷ Ibid. PP.31

2: Discrediting opponents

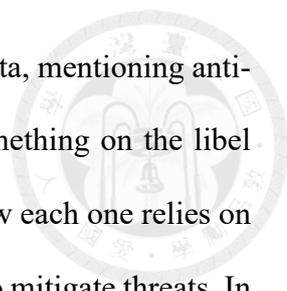
This part continues to address strategies on the managing of resistance, by tackling how Monsanto uses targeted discrediting as a mechanism of containment of opposition. It will be examined through first private discrediting, and secondly public discrediting. The previous chapter mentioned the dichotomy related to a lexical field between good and bad science, or unscientific and even anti-scientific. This will be further emphasized here, with a different lexical field that still aims at undermining opposing pieces of work. As such, Erich Sachs talks about “fake paper” and “ghost busters”¹⁸⁸ in the AgBioChatter, where participants share articles they deem as compromising for their products, but also where researchers demonstrate the contrary and respond to the papers in question to show how wrong their claims are. Eric Sachs mentions also “the misleading and unsupported claims”¹⁸⁹ in a specific article. What is central to this is also that the discrediting is a simple mechanism, in the sense that it is a natural reaction to opposing pieces, and the descriptions and assessments made of the articles are based on no arguments. For example, Kevin Folta corresponds with Jay Byrne, Jon Entine and Bruce Chassy on opposing pieces of writings, emphasizing that “we’re ultra sensitive to crazy nonsense around here”¹⁹⁰. The discrediting is also carried via private discussions on argumentative pieces written to disseminate opposing writings, like the “academic evisceration of her antic”¹⁹¹ about Vandana Shiva spread in communications by Camille Ryan. The targeted discrediting also occurs through the writing of pieces that defame threats, and overall

¹⁸⁸ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.39

¹⁸⁹ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.31

¹⁹⁰ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

¹⁹¹ File 1: Sachs, Eric SMonsantoHedgecockDuPont PioneerAgBioChatter. (2014). *Email communications of the AgBioChatter Yahoo Groups listserv*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.27



public discrediting. As such, Jon Entine asks for help from Kevin Folta, mentioning anti-science pieces, and inquiring the professor to “consider writing something on the libel threat against me”¹⁹² as he feels “very vulnerable”¹⁹³. This shows how each one relies on the network to discredit opponents and degrading pieces of writing, to mitigate threats. In a similar manner, Carly Barnes asks help from Kevin Folta, which he accepts as is “really committed to slamming the door on this insanity”¹⁹⁴. Another strategy for public discrediting is to discredit by naming individuals, in a sense targeting them and question their scientific relevance or integrity. About questions on a YouTube video of a scientist called Thierry Vrain talking about Roundup, Kevin Folta explains that he has never really paid attention to him, in the sense that he is irrelevant in the academic sphere and not a scientist worth of attention. He continues by stating that what he has read of him “is tired and uninspired repetition of the same-old-same-old [...], that he was a scientist that understood the technology fundamentally, but goes off the rails due to some political motivations”¹⁹⁵, and later that his content and arguments are “overall disappointing and boring”¹⁹⁶. To mention another case of targeted discrediting, he also uses the rhetoric on the lack of scientific content to the expense of political views about a conference on GMOs at the South Florida Science Center and Aquarium where “they have scheduled what will likely not be a scientific talk but an activist parasite posing as science [...], this is the most disgusting of all scams”¹⁹⁷. Such comments were posted on a forum,

¹⁹² File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.12

¹⁹³ Ibid. pp.12

¹⁹⁴ File 10: Folta, Kevin MUniversity of FloridaBayerSpurgat, JenniferKris, Alan. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.4

¹⁹⁵ Ibid. pp.10

¹⁹⁶ Ibid. pp.4

¹⁹⁷ File 18: Relph, DeborahGenetic Literacy Project. (2014). *Illumination and Genetic Literacy Project Daily Newsletter*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.22

discrediting publicly the presenter by emphasizing the ways in which political stances interfere with a scientifically informed discussion of biotechnology topics.



3: Identification and targeting

This final part highlights how Monsanto and his collaborators manage threats by identifying major opponents, to prioritize discrediting on such targets. There will be a few names brought up here, with the objective of reviewing some of the major opponents emerging from the dataset, as well as specific indications on them or strategies appointed by Monsanto and collaborators. Thierry Vrain, whose name appeared right before, is the object of two blog posts, which are estimated to be from Kevin Folta. He first points out “the manipulative language”¹⁹⁸ used by Thierry Vrain, whose work is not based on any knowledge nor education¹⁹⁹. Another name mentioned by Jon Entine is Andrew Kimbrell, surfing on the anti-science to do his work of advocacy on GMOs labeling²⁰⁰. He shares his concerns about emerging prominent faces on the anti-GMOs movement, especially regarding Jeffrey Smith whose books and videos are in studied in schools²⁰¹. Jeffrey Smith is the name that comes up the most in the dataset. As such, Monsanto’s integrated academics surveil any of his pieces and public statements. About Jeffrey Smith doing a talk, Val Giddings contacts multiple of other academics, suggesting “to sign one of us up for this or find a ringer to do it for us”²⁰², in the sense of publicly discrediting the scientist by disseminating his arguments in front of an audience. Similarly, the second name that comes up the most is Don Huber, advocating for the dangers of glyphosate. Kevin Folta

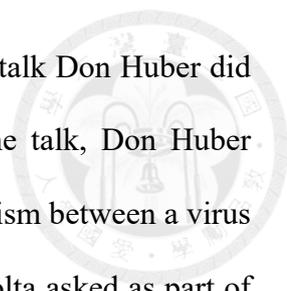
¹⁹⁸ Ibid. pp.2

¹⁹⁹ Ibid. pp.3

²⁰⁰ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.13

²⁰¹ Ibid. pp.13

²⁰² Ibid. pp.26



describes to the researcher Nathanael Johnson how he attended to a talk Don Huber did in Florida about the dangers of GMOs and glyphosate. During the talk, Don Huber claimed to have observe in a study about GMOs a new kind of organism between a virus and a fungus dangerous for the health of living organisms. Kevin Folta asked as part of the audience for the scientist to release the study on this organism and to permit other researchers to conduct studies on this new object of research. What Kevin Folta intend with that is to find arguments to counter the claims on the dangers of health issues²⁰³. He then created a petition to motivate Don Huber's distribution of the deadly pathogen, and suggesting to his peer to pass along the petition to gain more signatures. As such, the dataset showed how a few names often came up and referred to a specific targeting by Monsanto and his collaborators of powerful opponents.

Through a thorough reading of the dataset, some strategies emerge, which are all confined to the academic sphere, and enable Monsanto to manage resistance through the monitoring and discrediting of opposition, and especially targeted opponents identified as detractors and threats to the hegemonic ideology and narratives of Monsanto. The following section will continue focusing on such strategies, by looking at how the corporation weaponizes knowledge to neutralize counter-movements.

²⁰³ File 12: Reding, KeithMonsanto. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.48

Section 2: Weaponizing Knowledge in the Struggle for Hegemony



This second section emphasizes how the internal communications of Monsanto highlights the strategy of weaponizing knowledge. The previous chapter underscores mechanisms for controlling knowledge and expertise. This section continues on the same lines of ideas, but with a special focus on offensive strategies. At such, rather than patterns and mechanisms, these are more tailored strategic applications of such strategies, a case-by-case approach that does not necessarily imply a system. As such, this section will tackle the symbolic reinforcement of expertise, then emphasize on the coordination of offensive operations and finally highlight internal strategies and collective defense.

1: Symbolic reinforcement of expertise

What is meant by symbolic reinforcement of expertise is that Monsanto, and especially its academic collaborators rely on their academic position as a symbol for their expertise, and hence the superiority of their perspectives and arguments. As such, Cathleen Enright underscores how researchers from the University of Florida Curtis Hannah and Kevin Folta were “bringing authority and influence to the GMO debate”²⁰⁴. The symbolic reinforcement of expertise also implies making use of their position as experts and thus undermining others. Here, several emails exemplify this in the dataset. Kevin Folta uses its position as academic to offer a science speaker training course for free, to counter Jeffrey Smith’s course. His goal is to give talk with others “about rhetoric

²⁰⁴ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.34

and argument with a practicing and trained scientist with an extensive history in communications”²⁰⁵. Kevin Folta is able to organize such classes as the University of Florida highly supports his work and participate in placing him in a spotlight, emphasizing his academic expertise. Thus, trainings and conferences are organized, in the same way that discrediting papers are published, as an offensive against specific opponents. Furthermore, using their positions as experts means for academics to take their scientific position for granted and discrediting pieces in public to tear down opponents’ scientific ground and expertise. This is especially the case when Kevin Folta discussed with Tom Calarco, mentioning an article about GMOs myths and truths. He explains that “it takes a page of explanation to refute a sentence of bullshit, so it is hard to think about giving you a cover-to-cover rebuttal”²⁰⁶. Similarly, Kevin Folta adopts an infantilizing tone toward his interlocutor, in an effort to undermine him. His take is as follow: “if 51% of the people in Vermont want the government to spend millions of non-existent dollars to put up an anti-unicorn system, do you think it should be done?”²⁰⁷. He seeks to discredit his opponent by adopting the stance of having a superior expertise on the subject, hence denying the validity of his adversary’s question and opinion. Kevin Folta also uses the argument of being an independent scientist, which grants him a valid and unbiased position. He uses the dichotomy of “the fear peddlers like Huber with his secret labs and conspiracies vs. an independent scientist”²⁰⁸, which shows again the strategy of patronizing and reinforcing its expertise by putting forward a supposed legitimacy as an independent researcher. Monsanto’s strategies to neutralize opposition relies on academic

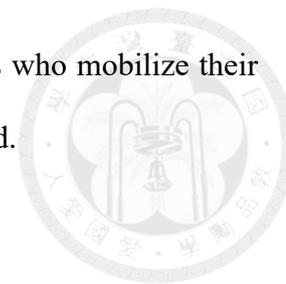
²⁰⁵ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.26

²⁰⁶ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.23

²⁰⁷ Ibid. pp.24

²⁰⁸ Ibid. pp.25

embedding, and this rhetoric is sustained by academic collaborators who mobilize their institutional legitimacy to claim an expertise that cannot be contested.



2: Internal strategies and mutual reinforcement

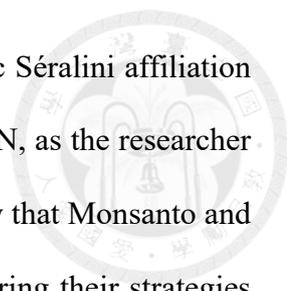
Weaponing knowledge also involves internal discussion, after which Monsanto and collaborators so that they have all the necessary information at their disposal to prepare their offensive arguments. It also involves keeping up with which articles or papers to undermine, which media opinion to oppose publicly. As such, Keith Reding from Monsanto discusses arguments with Kevin Folta, talking about tweets to undermine the arguments another scientist put forward in a viral video²⁰⁹. Similarly, Eric Sachs on the AgBioChatter updates collaborators about a response to an opponent's article, in order for the others of the private email group to not post the same publication²¹⁰. An employee of Monsanto, whose name was censored, sent to two other people with censored name and researcher Stuart Smyth about the AHTEG forum in response to the post of someone censored from Norway, asking for advice and confirmation before responding²¹¹. Moreover, about an article on The Orlando Sentinel, Kevin Folta informs Bill Mashek from Ketchum that he received eight mad emails and ten nice ones²¹², advising him to neither worry nor act on the reactions in the public opinion. Monsanto and collaborators also keep an eye on who to count as a trusted individual, and who not, as John Swarthout

²⁰⁹ File 12: Reding, KeithMonsanto. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.10

²¹⁰ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.12

²¹¹ File 59: Smyth, StuartUniversity of SaskatchewanMonsanto. (2016; 2017). *Email communications between Stuart Smyth and chemical industry organizations regarding conferences*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.137

²¹² File 12: Reding, KeithMonsanto. (2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.22



and Tracey Reynolds, both Monsanto employees, discuss Gilles-Éric Séralini affiliation with other scientists and the French science advisory group CRIIGEN, as the researcher caused a scandal for Monsanto's Roundup. This also goes on to show that Monsanto and collaborators keep an eye on the international stage. As well as sharing their strategies internally, they communicate on how to prepare offensives, and even more so, on defending each other. For example, Jon Entine used his position as a media figure to defend Kevin Folta, who was “called a shill for being of the pay of the Koch brothers”²¹³. For some context, the Koch brothers are the founders of Koch Industries, with some subsidiaries in biotechnologies and agribusiness. Kevin Folta thanks Jon Entine “for chiming and explaining”²¹⁴. Other examples with similar situations are found in the dataset, developed in other parts of the analysis. Additionally, Monsanto also uses internal communications to gather intel on opponents, like Camille Ryan informs the AgBioChatter of doing a “cursory search of Chatter to see if we have discussed the doom and gloom of this Black Swan author”²¹⁵, the author in question being Nassim Taleb. In a similar situation, Josh Monken asks his colleague from Monsanto William Heydens for intel for a timeline project around historical sentiment against Monsanto. William Heydens responded with some issues the corporation faces during “the early glyphosate days (mid-late 1980s)”²¹⁶, which will be developed in the next chapter. William Heydens was also the author of an email, dated on February 2nd, 2015, on the subject of EPA people going to the International Agency for Research on Cancer (IARC) and sent to Daniel Jenkins from Monsanto. William Heydens gives the name of the two participants from

²¹³ File 25: Folta, Kevin MKevin. (2014 August). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.11

²¹⁴ Ibid. pp.11

²¹⁵ File 19: Daly, Carolyn AKesterKetchumCoy, EmilyReding, KeithMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.36

²¹⁶ File 48: Heydens, WilliamMonsanto. (2015 March 17). [*Email from Heydens, William F to Monken, Josh Regarding CE Collaboration Project*]. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.2

the Environment Protection Agency (EPA) and the two observers of the EPA sent to the IARC, one being Jess Rowland, who doesn't need to be further introduced to Monsanto as "we all know Jess"²¹⁷ he writes in the email. The two Monsanto employees then discuss about the stakes for the company of such a meeting. As such, internal communications enable Monsanto and its network to shape knowledge in an offensive and strategic way, which relies on the extensive collaboration of industry, political and academic partners.

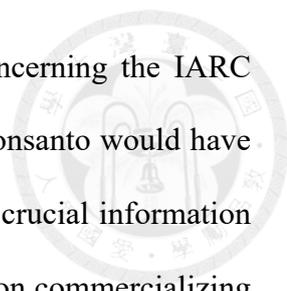
3: Coordination for greater scope operations

At last, strategies to neutralize opposition lie heavily on the coordination of the network. As such, Kevin Folta sends to Camille Ryan, Val Giddings, Bruce Chassy, Jay Byrne, Jon Entine, and Chris Phillips, regrouping academic, media and industry figures, an email to start an operation to counter biotechnology claims. He gathers them to let them know that he is "sick of playing defense"²¹⁸, and that he will "participate in a directed and intense group effort"²¹⁹. It is also essential in this last part to explain well what is meant by coordination of operations, to situate this in a broader context. Indeed, Monsanto's strategy for offensive operations at higher stakes involve multiple high-ranking individuals and initiatives with broader reach, yet also more sensitive, if not risky at times, implications for Monsanto and its partners. Three examples come up in the dataset that highlight well these operations. First, Kathryn Guyton, leading the IARC working group for the classification of glyphosate, sent an email to her collaborators from the working group, informing them that "two state universities in the US have received

²¹⁷ File 61: Ross, Matthew. (2017 May 03). *Deposition of Dr. Matthew Ross in Roundup Products Liability Litigation*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.109

²¹⁸ File 2: Folta, Kevin MKevin. (2014). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.15

²¹⁹ Ibid. pp.15



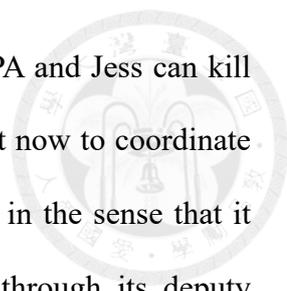
information requests, issued under US state open record laws, concerning the IARC evaluation of glyphosate”²²⁰. The supposition put forward is that Monsanto would have leveraged its network of allies to access such information, which is crucial information for the corporation as it would impact greatly its possibility to keep on commercializing its best-seller product, as well as derived products such as modified resisting seeds. Another instance is the bibliography of sources Monsanto submitted to review by the IARC working group when establishing the classification of glyphosate. Donna Farmer, from Monsanto, urgently submitted another paper, after one of the references was published and thus unexploitable for the IARC working group. Ivan Rusyn, chair at the IARC, comments on this paper to Kathryn Guyton, stating “it does not surprise me that when under pressure, the industry can muster a “relevant” publication that goes from submission to acceptance in as little as 7 weeks”²²¹. What is implied is that Monsanto is able to expedite publication processes to push out such material. Ivan Rusyn points out a facilitator in this situation, the scientific journal *Critical Reviews of Toxicology*, which he describes as “a known helper to “informative” publications from the industry stakeholders, for such expediency and relevance”²²². This situation highlights well how Monsanto coordinates its work for a large-scale operation. Finally, an email from the dataset brings light on an established connection between the deputy director of the Environmental Protection Agency of the United States, Jess Rowland, and Monsanto. Daniels Jenkins corresponds with ten of his colleagues from the corporation about having a call with Jess Rowland who told him “if I can kill this I should get a medal”²²³. Daniels

²²⁰ File 61: Ross, Matthew. (2017 May 03). *Deposition of Dr. Matthew Ross in Roundup Products Liability Litigation*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.379

²²¹ Ibid. pp.199

²²² Ibid. pp.199

²²³ File 58: United States Environmental Protection Agency Wendy, Blake Huffstutter, PJ Bill Heydens, William F Rowland, Jess. (2016 December 05). *Request for testimony of Jess Rowland in Roundup Products Liability Litigation; attached Glyphosate Report of the Cancer Assessment Review Committee (CARC)*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.99



Jenkins goes on, saying “however, don’t get your hopes, I doubt EPA and Jess can kill this; but it’s good to know they are going to actually make the effort now to coordinate due to our pressing”²²⁴. This quote is pretty much self-explanatory, in the sense that it establishes directly the connection between EPA and Monsanto, through its deputy director. After learning about Jess Rowland’s announcement about his retiring from EPA, Daniels Jenkins sends to the same colleagues at Monsanto that “Jess will be retiring from EPA in 5-6 months and could be useful as we move forward with ongoing glyphosate defense”²²⁵. After retiring from the EPA, Jess Rowland, when testifying in Monsanto trials, listed three chemical companies for which he has worked, two of them being among Monsanto’s closest associates and the third one remaining secret²²⁶. This suggests that Monsanto may have recruited him after retiring to serve as an informant previously embedded within regulatory agencies and institutions, and more apt to provide advice and mobilize his influence on behalf of Monsanto’s interests. As such, these three examples show how Monsanto leverage its influent network to use knowledge as a means of coercion and coordinate great scope operations.

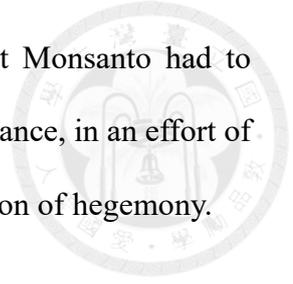
Thus, these observations conclude the sixth chapter, which aimed at looking into the dataset about containment and neutralization strategies that Monsanto could possibly mobilize to manage resistance and attacks to its hegemony. These strategies put in perspective what Wallerstein views as its third analogy, which is coercion. However, the reality of the situation for Monsanto is that some signs throughout the dataset signify some decisive crisis. The following chapter, as well as last chapter on data analysis,

²²⁴ Ibid. pp.99

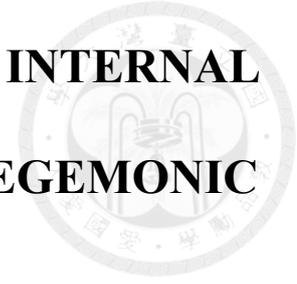
²²⁵ Ibid. pp.106

²²⁶ Miller, M., Wagstaff, A., & Greenwald, R. (2017, May 10). *Plaintiffs’ reply in further support of motion to compel responses from deponent Jesusdoss Rowland* [PDF]. The Miller Firm LLC.

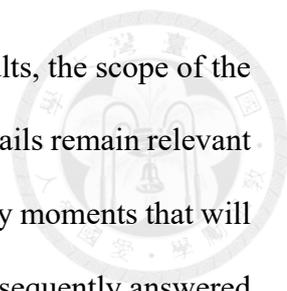
focuses on moments of crisis from the reading of the dataset that Monsanto had to overcome. It questions the signs of strain for the corporation's dominance, in an effort of observing a cyclical pattern as emphasized in Wallerstein's theorization of hegemony.



CHAPTER 7: SIGNS OF STRAIN: INTERNAL ACKNOWLEDGMENTS OF HEGEMONIC PRESSURE AT MONSANTO



The last chapter of this analysis as well as of this thesis tackles an essential element of Wallerstein's theory of hegemony. Indeed, as much as he identifies a cyclical pattern for his theory of world-systems, and thus foresees the collapse of the modern world-system as it is known today, the same goes for hegemonies. Multiple hegemonies have existed and disappeared during the history of the modern world-system. As such, this cyclical pattern should not be absent in the case of the hegemony studied here, Monsanto's hegemony. In a corporate setting, elements of decline are different from signs observed in the case of a power in the international system. Furthermore, Wallerstein identifies a different decline for the three instances of hegemony, all economic domains. The first advantage to appear for a hegemonic power is the agro-industrial edge, which is also the first to weaken. The commercial edge comes second. Then, the last economic advantage is found in the financial domain, and persists the most after the hegemon's fall, as well as the commercial edge. In Wallerstein's works, once a power does no longer possesses superiority in the agro-industrial domain, its decline is inevitable. Considering the change in perspective, the studied subject switching from a state to a corporation, the signs of decline will be different. Still, the analysis attempts to look at internal acknowledgments of hegemonic pressure in the dataset that would signify signs of decline. This analysis draws on internal communications in the form of emails, from Monsanto and its collaborators on a period span from 2012 to 2017. As a result, the dataset does not mention



any of recent situations. For the purpose to stick with the dataset results, the scope of the analysis will be restricted to this time period. The analysis and the emails remain relevant to show signs of strain, as the period has been framed according to key moments that will be discussed in this chapter. As such, the subquestion that will be subsequently answered is the following: **what internal acknowledgments indicate that Monsanto's hegemonic position is under strain?** To tackle this final inquiry, the chapter will be structured in three sections. The first will address reputation and public criticism, identifying major opposition voices or movements. The second section will look at legal pressure and regulatory threats and overall what reveal the internal communications on that matter. At last, a final and lighter section will discuss market challenges Monsanto had to face, and rather one in particular.

Section 1: Reputation And Public Criticism

The first section focuses on identifying signs in the dataset that would imply public criticism, and impact on the reputation of the corporation. The analysis attempts to evaluate and describe how much these signs represent indicators, whether early or not, of decline for Monsanto. To tackle this, this section will first address media and public backlash to show a broad picture of criticism, before specifying in a second part the scientific opposition.

1: Media and public backlash



Media is the platform through which public opinion conveys its criticism about Monsanto and its products. Monsanto being a giant corporation in the United States, discussions naturally evoke its impact. With the previous chapter, highlighting strategies for the corporation to neutralize opposition led to mention some of this criticism. A common theme is questioning the scientific integrity of the company, but even more so of the independent scientists spreading narratives in the same line of interests of the corporation. A situation which fueled email communication is the persistent several emails Tom Calarco sent to Kevin Folta. Its initial question posted on GMO Answers, as Carly Barnes from Ketchum explained to Kevin Folta, was about the independence of experts as he observed links between the University of Florida professor and foundations linked to the industry. He wants to know who is funding him and other independent experts, how he can “trust these “independent” experts unless being assured of their “independence” and that they aren’t paid by corporate America for their comments”²²⁷. This inquiry is representative of the public opinion’s distrust of the scientific community as connections with the industry are easily suspected. As Tom Calarco explains, he was able to establish a link between Kevin Folta through web searches on foundations and their fundings. As such, Stuart Smyth’s link to the industry is easily established as his chair at the University of Saskatchewan is funded by major agribusiness corporations. The public opinion questions the scientific integrity, and many web articles mention these, amplifying a possible public backlash. As well as not trusting independent scientists, the consumers do not trust Monsanto as a company that revolve on lies to keep its dominant

²²⁷ File 11: Kester, Kirby LBASFDrake, LisaMonsantoCoyKetchum. (2013; 2014). *Email communications between Kevin Folta and various chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.48

position. Carly Barnes explains that readers on GMO Answers tend to use Monsanto when they ask about the biotech industry and agribusiness corporations in general.²²⁸ She shares a question to Kevin Folta who then sent it to Eric Sachs, asking “why should we trust that Monsanto is not doing the same thing with GMOs: lying about their safety, covering up unfavorable research, and hiring scientists to tell only one side of the story?”²²⁹. This email shows the overall distrust the public opinion has on Monsanto, often mentioning ‘lies’ and ‘truth’, as such recourses are strategies for Monsanto to sustain an hegemonic discourse and neutralize opposition. Tom Calarco also points out that Kevin Folta is “on the wrong side of truth”²³⁰. This rhetoric is the one spread the most in media and reveals the public opinion on the corporation. This public backlash has been intensified with lawsuits, emphasizing the manipulation of the truth by Monsanto, which will be further discussed in the second section. To end this part, an event must be mentioned as it reveals the thin line between independent scientific and the industry, and the pressure on biotechnology companies and as several of them, including Monsanto, was the target of an offensive by the hacker community Anonymous. Ketchum informed some of its collaborators, and especially independent researchers to inform them of this attack, explaining that “private sector entities may be their only targets, but I don’t want any of you to be harmed by those who see you as industry spokespersons”²³¹. After establishing these pressures, it is now time to mention scientific opposition.

²²⁸ File 16: Barnes, Carly/Ketchum. (2013; 2014). *Email communications regarding GMO Answers*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.8

²²⁹ Ibid. pp.8

²³⁰ File 3: Folta, Kevin/MUniversity of Florida/Drake, Lisa/Monsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.23

²³¹ File 8: Entine, Jon/Vicini, John/Monsanto. (2014). *Email communication with Kevin Folta regarding GMO Answers and outreach*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.1

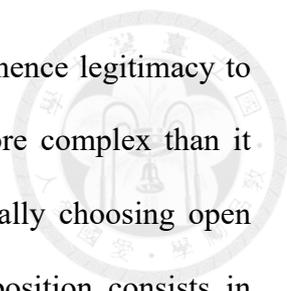
2: Scientific opposition

A sphere in which Monsanto and its collaborators suffer much opposition is the academic and scientific one. Indeed, as much as the analysis showed Monsanto's strategy of academy embedding, some opposition voices emerge. The previous chapter mentioned some of the targets identified in the academic sphere of scientists that need to be publicly refuted, hence implying to keep an eye on their publications and their attendance to seminars and conferences, and overall, their public statements. Scientific opposition is even more important considering the essential role academics and scientists they play for Monsanto's strategic preservation of interests. The names mentioned in the previous part, such as Jeffrey Smith or Don Huber regularly oppose scientists in connection with Monsanto. But what they do is also appearing as leaders in campaigns against GMO labels, with for example Jeffrey Smith siding with the pro-labelling camp during Vermont's labelling law, touring the state and displaying his film "Genetic Roulette"²³². On that same note, Jeffrey Smith joined the Organic Consumers Association and wrote columns to praise its work and recommend making donations to the lobbying arm of association, the Organic Consumers Fund²³³. This shows how independent scientists leveraging their expertise and academic position is not limited to the ones affiliating with Monsanto or the industry in general, but they side with other organizations or associations to use their voice. Additionally, what comes out most of the dataset about this scientific opposition is that they foster fear through their campaign, as they manipulate scientific language in order to make it sound dangerous²³⁴. What is pointed out in emails is how academic and

²³² File 38: Carter, ColinLAOTaylor, MacMatosantos, Ana J. (2015). *Email communications between UC Davis and BCF Public Affairs re: No on Prop 37*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.26

²³³ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.26-27

²³⁴ Ibid. pp.11



scientific opponents to Monsanto use their scientific expertise and hence legitimacy to obfuscate the discussion on biotechnology, rendering the issue more complex than it actually is. This is also what motivation the company to strategically choosing open communication. Furthermore, another dimension of scientific opposition consists in undermining the credibility of scientists linked with the industry, drawing attention to their affiliations and framing them as lacking independence as well as questioning their integrity. As a matter of example, Kevin Folta discusses with Jon Entine about an article written by another scientist, discrediting Kevin Folta's work by establishing deep ties between him and the industry, and calling him a "Monsanto Apologist"²³⁵. The latter portion of the email gives reason to believe that it is greatly threatening to Kevin Folta, emphasizing that he tried to prevent the publication of the article and deplores that "it's strange and disappointing that she felt so compelled to pursue this and present this in this way"²³⁶. As such, although academic scientists attempt to neutralize opposition, it happens that other scientists contest and denounce scientists affiliated with the industry, which threatens the legitimacy of the latter. It is especially threatening considering the fact that Monsanto, as it has been demonstrated in the previous chapters, actively relies on its academic network to shape ideology and knowledge expertise.

From the reading of the dataset, nothing indicates that scientific opposition is a growing problem. There is a constant from 2012 to 2017 of having to face challenges such as public opinion criticism and scientific opposition through published articles and open denunciation and assessments at public events. What is also relevant to mention is that it comes with waves, linked to political events such as the GMO labelling law. It is

²³⁵ File 44: Entine, Jon. (2015). *Email communications with Kevin Folta and Jon Entine*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.29

²³⁶ Ibid. pp.29

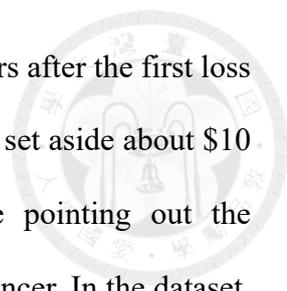
in that way that media and public backlash, as well as scientific opposition, are even more so threatening for Monsanto: they amplify challenging situations, which the corporation sometimes struggle to overcome. This will be the object of study of the second section of this chapter.

Section 2: Legal Pressure and Regulatory Threats

This second section focuses on legal pressure and regulatory threats, by demonstrating how they are considered as major challenges for the corporation and addressing as protentional signs of strains for the hegemonic position of Monsanto. It is even more so relevant as it is with that kind of situation that the dataset was made accessible. Indeed, U.S. Right to Know began posting the Monsanto Papers, discovery documents released during Roundup cancer trial in August 2018. At the same time, Monsanto lost its first Roundup case, *Johnson v. Monsanto Co.* The dataset is based on emails exchanges concerning Monsanto and its collaborators from 2012 to 2017. At such, they do not mention these decisive moments. Still, it is interesting to look at what the emails reveals of the legal and regulatory pressure on Monsanto, by first addressing the recognition of lawsuits, and then looking at regulatory threats.

1: Recognition of lawsuits

Lawsuits about Monsanto's products, and especially Roundup, have multiplied and greatly tarnished Monsanto's reputation. As such, Monsanto was recognized in the *Johnson v. Monsanto Co.* case to have failed to warn of the carcinogenic dangers of Roundup products. This happened three years after the IARC characterized in March



2015 glyphosate as probably carcinogenic to humans. About two years after the first loss of a Roundup case Monsanto, under the company Bayer, accepted to set aside about \$10 billion to settle about a hundred thousand claims from people pointing out the responsibility of the company and Roundup as the reason for their cancer. In the dataset, emails do not mention lawsuits targeting Monsanto, but rather lawsuits that Monsanto filed. Indeed, Proposition 37 has been covered in previous chapters, which Monsanto was able to act on, mobilizing its network of influencing and resorting to fund an immense campaign of opposition to the Californian ballot that required the labeling of genetically engineered food in 2012. Still, mentioned in the previous section, there was a GMO labeling law passing in Vermont in the beginning of 2014. In spite of a strong and intense opposition campaign, similar to the one in California, the law passed. Subsequently, Monsanto and the Grocery Manufacturers Association (GMA) filed a lawsuit in federal the State of Vermont to overturn the passed GMO labeling law²³⁷. This lawsuit did not overturn the law, making Vermont the first state in the United States to pass a law requiring labeling food, including ingredients produced with genetic engineering. Considering the heavy opposition campaign and the unsuccessful lawsuit, all indications point to the fact that the adoption of this law was a genuine challenge, and a sign of strain for Monsanto. The emails suggest another situation where Monsanto had to take measures, involving the representation of an attorney, but that did not involve a lawsuit. Aaron Blair from the National Institute of Environmental Health Sciences emails his colleague Dale Sandler that he received a subpoena from Monsanto, requesting some documents from the Agricultural Health Study (AHS), a study on agricultural workers and pesticide exposure. Dale Sandler replies by indicating that those same AHS documents had been

²³⁷ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.28

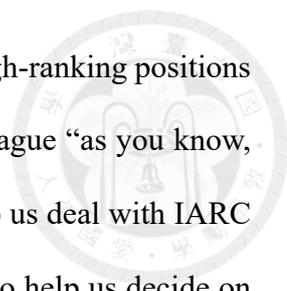
recently requested via the Freedom of Information Act (FOIA) through a third-party²³⁸. To add some context, there have been suspicions that the NIH knew about unpublished AHS data on glyphosate and cancer that could have influenced the 2015 IARC classification had it been available at that time. Aaron Blair mentions that “the subpoena seems ridiculously broad from IARC deliberations to our data”²³⁹, after suggesting seeking protection from NIH lawyers. It shows that Monsanto is taking significant measures after the IARC classification of glyphosate, testifying how powerful the corporation is to institutes and even governmental agencies. It also demonstrates that Monsanto was ready to take all measures to influence on the IARC classification, as the scope of the subpoena mentioned by Aaron Blair means that the corporation was not only after raw data, but also communications related to the IARC process itself.

2: Regulatory pressures

Drawing on the last part, the regulatory pressures part needs to first address the IARC classification. Indeed, in March 2015, the International Agency for Research on Cancer declared glyphosate probably carcinogenic to humans. Such a classification was a huge problem for Monsanto as it has been decided by a World Health Organization agency, which meant for the corporation to be brought further into the spotlight. Monsanto replied entirely on the EPA’s conclusions which reviewed later glyphosate as not likely to be carcinogenic to humans. The previous chapter discussed about the links between Monsanto and this classification by the EPA. What matters here is to show how much the classification of glyphosate by the IARC was a major challenge for the corporation, as

²³⁸ File 22: Alavanja, MichaelNIHNCI. (2014 February 28). *A Second Thought About the IJC Rejection of the Manuscript*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.3

²³⁹ Ibid. pp.3



the emails between William Heydens and Daniels Jenkins, both at high-ranking positions in Monsanto, demonstrate. Indeed, William Heydens wrote his colleague “as you know, we are considering the value/advisability of doing more work to help us deal with IARC fallout and we are trying to get feedback from various stakeholders to help us decide on pulling any triggers”²⁴⁰, which then led for them to discuss about contacting Jess Rowland from the Environmental Protection Agency. Another email discussion between Josh Monken and William Heydens shows how glyphosate, first developed by the corporation, ended up being their best-seller as well as a highly controversial topic, having to face many issues and regulatory pressures following studies led by the EPA or other institutes²⁴¹. Another regulatory pressure for Monsanto in the XXIst century has been GMO labeling. From 2012 to 2014, four states in the United States, California, Oregon, Washington and Colorado, launched ballot initiatives to label GMO foods, opposed by chemical and food companies led by Monsanto²⁴². Lisa Drake from Monsanto testified from the growing concern at Monsanto on the labeling issue, writings “I don’t know if you have been following the Colorado and Oregon labeling campaigns, but they are getting increasingly nasty and strident, attacking the safety of biotech seeds”²⁴³, continuing about “of particular shamelessness are the ads featuring Ray Seidler and the one with mothers keeping their babies safe”²⁴⁴. A bit later, Kevin Folta, in a conversation with Keith Floor and Camille Ryan from Monsanto and fellow scholars Marc Gunther, Val Giddings and Bruce Chassy, shares his concerns: “That is a bad precedent. As much as I don’t like the slippery slope, to have to reveal all steps in the food

²⁴⁰ File 57: GIPSAHinshaw, Gary. (2016 September 16). *[Email from Hinshaw re: Public Pressure to Start Testing Samples of US Food]*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.99

²⁴¹ File 48: Heydens, WilliamMonsanto. (2015 March 17). *[Email from Heydens, William F to Monken, Josh Regarding CE Collaboration Project]*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.2

²⁴² Environmental Working Group. (2014, September 3). *The Anti-Label Lobby*.

²⁴³ File 9: Savage, SteveFolta, Kevin M. (2013; 2014). *Email communications between Kevin Folta and various chemical industries*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.10

²⁴⁴ Ibid. pp.11

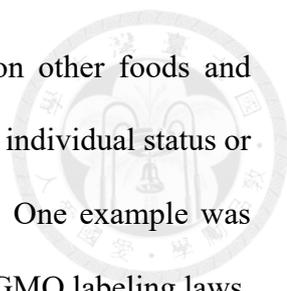
production/procurement process for no reason will not be good for anyone”²⁴⁵. This shows how much the labeling laws are a significant issue for Monsanto, and a challenge constantly brought up in the dataset. Still, in 2016, the U.S. Congress passed a bill, the Safe and Accurate Food Labeling Act mentioned in previous chapters, creating a national standard for GMO labeling, thus nullifying the Vermont GMO law. It also makes it illegal to enact labeling laws at a state level.

Thus, as well as it showed signs of strain, these evidence from the dataset are not significant enough to talk of a complete decline for Monsanto. However, considering the short time period during which these challenges happened, being only a few as these are only extracted from the dataset, which implies that there have been many more, it seems evident that Monsanto was targeted with more pressure from regulations, lawsuits, as well as public and academic criticism. These emails are evidence for signs of strain for the corporation. It is now necessary to introduce the last section, which establishes some indications of decline.

Section 3: Market Challenges

This final section concludes the analysis of the dataset, and tackles the internal acknowledgments that would indicate a decline for Monsanto. The last type of challenge analyzed in this thesis are the market and competitor challenges. Only a few emails mention signs of recognition of those challenges, but they have a lot to tell of Monsanto position in later years of the dataset. First, it is essential to mention market competitors,

²⁴⁵ File 13: Folta, Kevin MKevin. (2013; 2014). *Email communications between Kevin Folta and media persons, Nathanael Johnson, food writer and journalist in California and Marc Gunther, Fortune*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.27

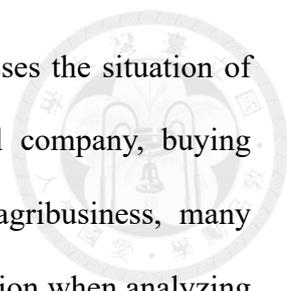


and the threats they pose for Monsanto. Previous chapters mention other foods and agribusiness companies as united in many situations, whether in their individual status or under associations such as the Grocery Manufacturers Association. One example was during Proposition 37 in California or other ballot initiatives to pass GMO labeling laws. Still, in this political situation, some food corporations sided for the GMO labeling law. Kevin Folta emails Cathleen Enright about “the new assault on science and reason with fear marketing is staggering [...], between Cheerios and Chipotle, etc, they are essentially validating the crazy concerns [...], we need companies to stand up to the pressure, not to bend”²⁴⁶. Indeed, companies such as Cheerios and Chipotle promote non-GMO foods and use this as a marketing tool, hence their support for the passing of GMO labeling laws. Other emails, not part of the dataset, have shown the researcher Pamela Ronald, mentioned in previous chapters, and Jon Entine collaborating to discredit these corporations, suggesting a boycott against the restaurant chain Chipotle²⁴⁷. Thus, from Monsanto’s emails communication, it appears that it also had to face challenges from competitors.

Additionally, Monsanto suffered from market challenges, and one in particular, that is only mentioned once in the dataset as it only occurred a year after the latest email analyzed. In an email communication, Stuart Smyth contacts Camille Ryan from Monsanto and someone with a censored from Bayer with subject “Bayer purchase of Monsanto” on September 15, 2016. The email goes as follow: “I am sure it is going to be some period of time before any reorganization plans are implemented, but I want to let both of you know that regardless of what happens, I’d like to have both of you remain on

²⁴⁶ File 3: Folta, Kevin MUniversity of FloridaDrake, LisaMonsanto. (2013; 2014). *Email communications between Kevin Folta and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.33

²⁴⁷ Entine, J., & Ronald, P. (2015, April 29). *GeneTrends AG story/high priority/unintended consequences of GMO-free and ban GMO movements* [PDF]. U.S. Right to Know.



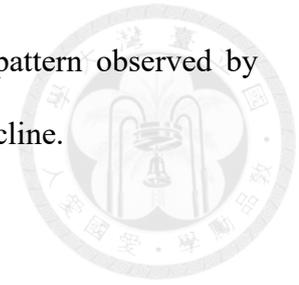
the advisory committee to my research chair”²⁴⁸. This email addresses the situation of Bayer, a German multinational pharmaceutical and agrochemical company, buying Monsanto. It was concluded in June 2018 for \$63 billion. In agribusiness, many corporations are giants of industry. Wallerstein talks about this situation when analyzing cycles of hegemony, explaining that “the longer hegemonic cycles involve a struggle between two major states to become the successor to the previous hegemonic power by becoming the primary locus of the accumulation of capital”²⁴⁹. Considering this and the dataset, it can frame the Bayer acquisition. Two views can emerge from this: it is either a maneuver to consolidate power and preempt competitors from becoming the next hegemon in agribusiness, or the consequence of losing its hegemony. Based only from the dataset and the analysis provided in this thesis, this cannot be answered.

This final chapter of analysis showed some signs that could mean a potential decline, or at least of strain for Monsanto’s hegemony. The previous chapters showed how the corporation cope with challenges, hence most of the criticism demonstrated in the first section do not give enough evidence of strain of its dominance. However, the second section elaborated legal and regulatory pressures, which, from their reoccurrence on a relatively limited time span of six years, indicate signs of strain for the corporation. The last section concludes the analysis by showing signs of strain, as well as signs of decline of the hegemony. Indeed, Monsanto does no longer exist as an entity after being acquired by Bayer in 2018. Thus, there are multiple indications in the dataset of challenges for Monsanto, but only the mention of Bayer’s acquisition once indicates a decline of

²⁴⁸ File 52: Smyth, Stuart University of Saskatchewan. (2016). *Email communications between Stuart Smyth and chemical industry organizations*. UCSF Industry Documents Library, USRTK Agrichemical Collection. pp.95

²⁴⁹ Wallerstein, I. (2000). *The essential Wallerstein*. The New Press. pp.437

Monsanto's hegemonic position. It then exemplifies the cyclical pattern observed by Wallerstein, as Monsanto underwent thriving periods as well as a decline.

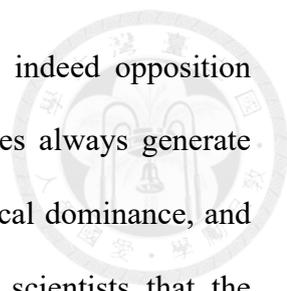


CONCLUSION

Section 1: Summary and Reflection on Key Findings

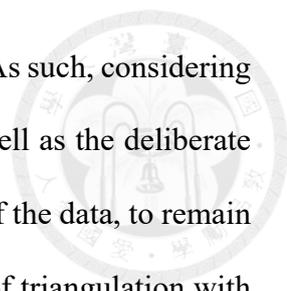


This first section aims at concluding the research in providing a summary of the key findings, as well as some reflection on them and what they implicate for this study. As such, some of the limitations will be addressed, to attempt to comprehend what they suggest. This thesis revolved around the following research question: In what ways does Monsanto's behavior in agribusiness reflect and assess Wallerstein's hegemony in his world-systems theory? The main result from the analysis of the dataset is the confirmation of the three analogies emphasized by Monsanto to look for patterns in the three historical hegemonies of the modern world-system. The three hegemonies were the following: an economic one, a short interval in which there is simultaneous advantage in the agro-industry, commerce, and finance domains, an ideological one, when the hegemon is able to shape ideology to its advantage and interfere with political processes, and a coercive one, a military power for the state. In the fourth chapter, looking at elements of the rise of hegemony, it appears that Monsanto consolidated dominance through a corporate integration of powers, embedding multiple spheres of dominance, and through the preeminence of Roundup and GMO seeds. It also relies on economic core strategies, such as reliance on patents and technological innovation validating the first analogy. On the second analogy, the dataset was extensive on the topic, providing evidence for many mechanisms that account for Monsanto's dominant ideology and shaping of policy. Lobbying, propaganda, regulatory capture and especially partnerships with scientists were particularly striking. These demonstrates the corporation's control of knowledge production and public discourse, emphasizing the ideological dominance of Monsanto. Chapter 6 looks at Monsanto's management and neutralization of resistance in the internal



communications of the corporation. It showed first that there are indeed opposition movements, which echoes Wallerstein's assessment that hegemonies always generate counter-movements. From the findings, it appears that it is ideological dominance, and especially the reliance on the academic sphere and independent scientists that the corporation is able to maintain hegemony in spite of opposition. Monsanto also seeks collaboration from public relation firms which, in contact with academics, serve in majority the role of shaping ideology. One of the key findings was also the object of Chapter 7, looking for signs of strain or even decline. The findings showed that some of the signs were the proliferation of lawsuits, a growing scientific opposition to glyphosate accompanied with a consumer distrust and reputational crisis. These strains mirror the signs of hegemonic decline in Wallerstein's cyclical pattern of hegemony, up to the acquisition of the corporation by Bayer in 2018, the peak symbol of the crisis.

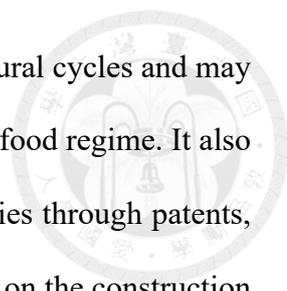
Wallerstein's framework relies on these three instances, namely economic, ideological, and military. The study demonstrates that Monsanto matches economic and ideological, but the military analogy is not verified. This divergence suggests that corporations cannot perfectly replicate state hegemony. As such, corporations can be analyzed as hegemonic actors, but the theory must adapt to the absence of military means. Indeed, as showed in the research, the coercive means of Monsanto lie in their economic and ideological dominance. The military dominance can rather be viewed under the scope of technological-commercial supremacy. The literature review addresses the coercive means as Vandana Shiva does, on intellectual property. This perspective is particularly relevant as it is very much accurate and corresponds to a recent reading of how this system operates. Still, the dataset did not provide much content on this, as the material focused on Roundup. New indicators for military dominance could hence be patent monopoly and cultural legitimacy.



It is also essential to address the empirical limits of the study. As such, considering the text-based nature of the dataset and the qualitative method, as well as the deliberate choice to ground the analysis exclusively in an interpretive reading of the data, to remain within the scope defined by the research question, there was a lack of triangulation with financial and market data. This could have provided further elements, especially on the first economic analogy, with metrics for corporate superiority in commercial, agro-industrial, and financial domains. The cyclical pattern of rise, maintenance, resistance and decline were verified, when the three analogies of Wallerstein were not equally mirrored in the data. These do not invalidate the findings but provide some questioning for extending Wallerstein's systemic theory to corporations.

Section 2: Empirical And Conceptual Implications

This second section attempts to resituate this research within the literature, to demonstrate what could be the empirical and conceptual implications from a broader perspective. In the field of International Relations, it breaks with state-centrism, in line with the broader field critical studies in the discipline, which has, for several decades, has sought to break away from the constraints imposed by mainstream studies. And it is particularly the case for the tendency to acknowledge and analyze only states within the international system, a perspective widely criticized for being narrow and overly restrictive. This research provides thus a framework for analyzing corporate power, from the perspective of agribusiness firms. It also demonstrates that corporate hegemonies, like states', rise, consolidate, and decline, but probably in shorter cycles.

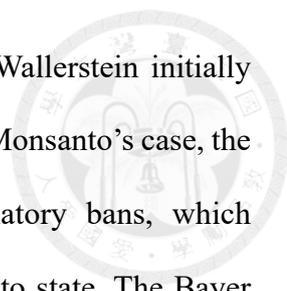


This thesis also resituates Monsanto within historical agricultural cycles and may constitute an addition to the analysis of McMichael's third corporate food regime. It also addresses how corporations reinforce global core-periphery hierarchies through patents, seed monopolies, and technological control, with this thesis focusing on the construction and the persistence of the core amidst systemic challenges. Additionally, by highlighting the systemic role of agriculture in the capitalist world-economy and demonstrating the decline of Monsanto, it raises the following question: does Bayer, or other agribusiness giants, inherit Monsanto's hegemonic model?

Finally, this thesis was introduced with a poem addressing the ecological crisis, and whether the society decides to act on it or not. This research attempted to link ecological crises to structural dynamics of capitalist hegemony. Monsanto's pursuit of hegemony illustrates how environmental degradation and destruction is produced by systemic narratives of global dominance and the relentless struggle for power. Corporations are systemic political actors, and Monsanto's case raises questions of democratic accountability when observing the corporation's integration of political power. This also questions on how to govern corporate power in the Anthropocene. The goal would be not only to limit harming consequences, but to also anticipate cyclical crises with consolidation of corporate power and its exhaustion. As such, future corporate hegemonies may face similar cycles of rise and decline.

Section 3: Concluding Remarks

In conclusion, this master's thesis provides the perspective of Monsanto as an emblematic case of corporate hegemony. Its existence as a hegemon, and demonstrated



with international communications, does follow the cyclical logic Wallerstein initially attributed to states with rise, maintenance, resistance and decline. In Monsanto's case, the decline is accelerated by lawsuits, consumer distrust and regulatory bans, which emphasize the relative fragility of corporate hegemonies compared to state. The Bayer acquisition is a paradoxical moment as it is the decline of the company as the hegemony, but the persistence of the system. It validates the assessment that hegemonies rarely end abruptly but rather restructure and continue under new forms.

This research shows that Wallerstein's framework is useful, as Monsanto does reflect and assess its theory of hegemony, but also that it requires some adjustment or a different empirical framework. Additionally, the perspectives on resistance and transformation are relevant, as it confirms Wallerstein's views that hegemonies always produce opposition, but especially reveal that resistance is not only reactive but also transformative. It raises the question of whether resistance can anticipate ecological and social crises rather than only respond after damage is done. Indeed, in Wallerstein's logic, movements of resistance come after domination has already caused harm or reached its peak, right before the decline phase. Similarly, resistance movements responded to Monsanto's hegemony, they did not prevent it from consolidating, with for example lawsuits filed after contamination and the systemic glyphosate dependence. This shows the limits of cyclical logic, with if resistance always comes too late, the cycle is guaranteed to repeat ecological and social harm. This fosters reflection beyond analysis, as future hegemonies may likely involve corporate-state hybrids, probably in the sense that Wallerstein prospected on the future of his modern world-system, as no longer the one we know.



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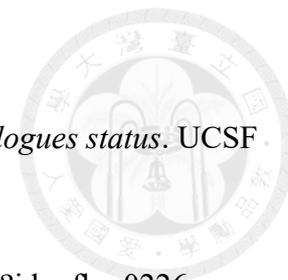
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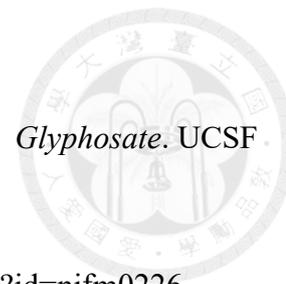
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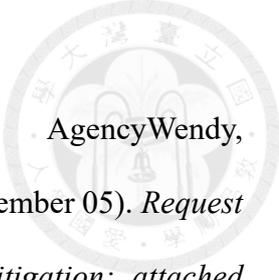
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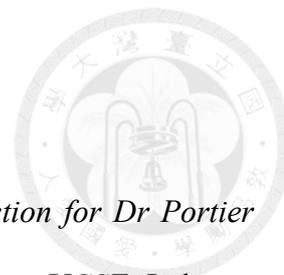


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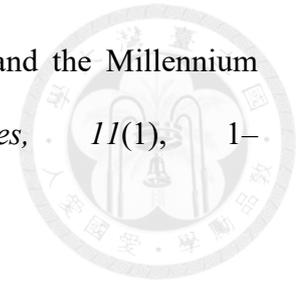
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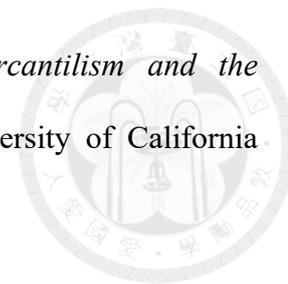
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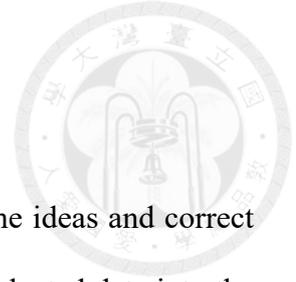
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Artificial Intelligence



I used AI models such as ChatGPT and Grammarly to structure some ideas and correct errors in syntax and spelling. It was also used to help assemble the selected data into the categories.

APPENDIX

Appendix 1



JOHNSON N. T., *Pollution Letter*, September 16, 1970

Monsanto

FROM (NAME & LOCATION) N. T. Johnson St. Louis

DATE February 16, 1970

SUBJECT POLLUTION LETTER

REFERENCE

TO
P. Craska - Wilmington
C. Clay - St. Louis
J. H. Davidson - Los Angeles
R. A. Damiani - Chicago
G. F. Fague - Detroit
R. A. Garcia - Akron
R. Garnsworthy - Melbourne
J. A. Heilala - Akron
R. Irwin - Houston
J. S. Pullman - New York
J. J. Roder - Chicago
R. Giles - Melbourne

cc: P. J. A. Marsh - Brussels
R. Enhardt - New York
T. W. Oneson - Montreal
J. N. Haggart - Brussels
V. Morse - St. Louis
J. Brydon - Montreal
R. Graham - New York
P. G. Benignus
J. G. Bryant
D. E. Roush
J. R. Fallon
D. A. Hall
D. R. Pogue
D. F. Smith
D. A. Olson

Attached is a list of questions and answers which may be asked of you by customers receiving our Aroclor-PCB letter. You can give verbal answers; no answers should be given in writing. If the customer asks a question you can't answer or if he wants an answer in writing, then send his questions to me and we will answer from here.

We want to avoid any situation where a customer wants to return fluid. The new reformulated products will be available within a month. We would prefer that the customer use up his current inventory and purchase Pydraul 625A, Pydraul ACA, Pydraul ACA Winter Grade and Pydraul 540A when available. He will then top off with the new fluid and eventually all Aroclor 1254 and Aroclor 1260 will be out of his system. We don't want to take fluid back. Sell him the replacement.

We must be very positive in our approach with each customer relative to our decision to eliminate the use of Aroclor 1254 and Aroclor 1260 in our Pydraul products. We (your customer and Monsanto) are not interested in using a product which may present a problem to our environment. We certainly have no reason to be defensive or apologetic about making this change. The decision to change makes good sense and our customers should commend us, not criticize our actions. No one has forced us to make this



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change. We have done it to keep our customers out of possible trouble. They should appreciate our effort, and stay with us as a customer on the reformulated Pydrauls. To make this change has cost us research monies and time. Fortunately, we possess the technical skills to make a change in our formulations without affecting the performance of products. Be positive, Take the offense. Don't let a customer or competitor intimidate you. I doubt if our competitors know whether their product could present a problem to our environment. You might ask your customer, if he has ever asked Houghton or Stauffer, Carbine, etc. about the effects of their products.

We should also recognize (point this out to your customer) we must clean-up. The Chemical Week article gives him an idea of laws in effect in his state. Read this yourself. Be familiar with the data on each state in which your customers are located. Use this in your discussions.

We have no replacement products for Aroclor 1254 and Aroclor 1260. We will continue to make these products; however, customers will have to use their own judgement on continued use.

We can't afford to lose one dollar of business. Our attitude in discussing this subject with our customer will be the deciding factor in our success or failure in retaining all our present business. Good luck.

(We have also attached a copy of the letter sent to transformer customers.)

N. T. Johnson

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