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From Power/Knowledge to Power/Ignorance: Foucault and  
Agnotology

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Do you not see, then, that mistakes in life and practice are likewise to be attributed to the ignorance which has conceit of knowledge? [...] if neither those who know, nor those who know that they do not know, make mistakes, there remain those only who do not know and think that they know.

- Plato (disputed), *First Alcibiades* (translation by Benjamin Jowett)

It is not enough that you understand in what ignorance man and beast live; you must also have and acquire the *will* to ignorance. You need to grasp that without this kind of ignorance life itself would be impossible, that it is a condition under which alone the living thing can preserve itself and prosper: a great, firm dome of ignorance must encompass you.

- Friedrich Nietzsche, *The Will to Power* (translation by Walter Kaufmann)



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# 1. Introduction

## 1.1 Why Foucault and Agnotology?

Philosophy of science – as well as epistemology in general – is usually concerned with questions about what we can know, how knowledge is produced and how it is transmitted. In recent years, there has been increased attention to agnotology, the study of ignorance. The central premise of agnotology is that ignorance is not always a natural state or a mere lack of knowledge. Instead, ignorance is frequently created by choices, both deliberate and unconscious. Just like knowledge, ignorance can be produced on purpose by certain institutions, but it can also be the result of far-reaching decisions made decades or centuries ago. Far from being always seen as negative, ignorance can also be viewed as a resource for the scientific process or as a virtuous choice by scientists and laypeople. Agnotologists have their own taxonomies of those different kinds of ignorance, and I will discuss the taxonomy proposed by Robert Proctor later in this introduction.

Michel Foucault has long been an important source for the social dimension of knowledge. In his middle period, he developed the concept of “power/knowledge” to show the deep connection between those two phenomena. However, Foucault has not been engaged with in the agnotological literature in a meaningful way. For instance, Proctor himself refers to a connection between knowledge and power, but he leaves it at the Baconian motto that (sometimes) knowledge is power.<sup>1</sup> Nancy Tuana, in her discussion of ignorance surrounding female anatomy and pleasure, references Foucault’s discussion of the constitution of sex as a problem of truth.<sup>2</sup> However, such references are few and far between. The lack of engagement with Foucault by agnotologists is arguably a consequence of Foucault himself not giving ignorance its due. As I will argue, this should be remedied; his works on power/knowledge can be taken further to encompass the social dimension of ignorance as well.

An often-repeated claim is that we live in “knowledge societies”. Indeed, Foucault himself is sometimes read as embracing the view that Western societies will conceive of

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<sup>1</sup> Robert N. Proctor, “Agnotology: A Missing Term to Describe the Cultural Production of Ignorance (and Its Study),” in *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2008), 22.

<sup>2</sup> Nancy Tuana, “Coming to Understand: Orgasm and the Epistemology of Ignorance,” in *Agnotology: The Making and Unmaking of Ignorance*, ed. Robert N. Proctor and Londa Schiebinger (Stanford: Stanford University Press, 2008), 111.

themselves as knowledge societies.<sup>3</sup> However, the term “ignorance societies” seems just as appropriate. We can see this most clearly in the case of what is called “actively constructed ignorance”: Starting from the denial that cigarettes cause cancer, there has been a community of hired experts pushing against scientific evidence concerning the harms of tobacco, acid rain, the ozone hole, and climate change. The strategies they pioneered were refined over several decades and have led to a great proliferation of ignorance. However, the social dimension of ignorance cannot be reduced to a few ignorance-mongers. Instead, the production of ignorance is often systemic and hard to grasp while at the same time working through the bodies of individuals. I will argue that Foucault provides the conceptual tools for addressing the diffuse and capillary nature of ignorance.

The aim of this thesis is to read Foucault under an agnotological framework and develop the concept of “power/ignorance” in analogy to his concept of power/knowledge. Building on his analysis of the production of knowledge, I will show how he missed the production of ignorance. Out of this reading of Foucault, I will develop the concept of power/ignorance and apply it to certain case studies of agnotology. This will hopefully not only improve on the Foucauldian analysis of (the lack of) knowledge, but also provide contemporary agnotology with useful concepts concerning the social dimension of ignorance.

To do this, I will mostly draw on Foucault’s middle works, particularly the texts in his collection *Power/Knowledge*. My most important secondary source on Foucault will be *Michel Foucault: Beyond Structuralism and Hermeneutics* by Hubert L. Dreyfus and Paul Rabinow. The main texts on the agnotological side are Robert N. Proctor’s and Londa Schiebinger’s work *Agnotology: The Making and Unmaking of Ignorance*, as well as *Science and the Production of Ignorance: When the Quest for Knowledge is Thwarted* by Janet Kourany and Martin Carrier. I will also draw on certain articles from the *Routledge International Handbook of Ignorance Studies* by Matthias Gross and Linsey McGoey.

The study of knowledge is one of the oldest fields of philosophy, while agnotology is barely two decades old. As agnotologists are quick to point out, we are surprisingly ignorant about ignorance, especially given that ignorance is even more common than knowledge. In other words, ignorance is an understudied phenomenon and in need of

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<sup>3</sup> Peter Wehling, “The Right Not to Know and the Dynamics of Biomedical Knowledge Production: Fighting a Losing Battle?,” in *The Routledge Handbook of Ignorance Studies* (London: Routledge, 2022), 234.

explanations. I hope that this thesis will offer some of those explanations, because we will need to understand how ignorance is made if we want to unmake it.

## 1.2 A Taxonomy of Ignorance

Before turning to the structure of this thesis, I want to introduce some of the essential terms and to clarify the limits of the topics I am able to address here. The term “agnotology” is a recent invention. Its name dates to the linguist Iain Boal, who came up with the term in 1992 after being prompted by Robert N. Proctor.<sup>4</sup> Etymologically, the word refers to the study of the lack of knowledge. There was also the term “agnoiology” used by the nineteenth-century Scottish philosopher James Ferrier to refer to the conditions of ignorance; however, this term has fallen out of use.<sup>5</sup>

While it is broadly located within epistemology, agnotology is an interdisciplinary field. There has been an increased interest in studying ignorance, particularly in sociology. As Matthias Girel points out, the “strong programme” of the sociology of science also ultimately requires an investigation into ignorance: Once we have sociologically explained the way successful theories are produced, we are faced with the idea that those social processes can also produce the absence of knowledge.<sup>6</sup> However, while the idea that ignorance needs to be explained is not completely original, it still took a long time for this field to be established. The term “ignorance studies” is frequently used in a more sociological context. Despite significant overlap, those two terms should not be confused. Ignorance studies also investigate issues such as risk assessment and the management of uncertainty, which are decidedly less important in the agnotological literature. The use of empirical methods in ignorance studies is also a methodological difference. Nevertheless, this empirical research is an important source for agnotological theories.

Defining knowledge is a difficult endeavor. Since this thesis concerns ignorance and not knowledge, spending too much time on this issue would be counterproductive. For methodological reasons, I will therefore follow Timothy Williamson in his “knowledge first” approach and treat knowledge as a given. Williamson argues that while we might say that knowledge entails justified true belief, analyzing it further would be a mistake which

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<sup>4</sup> Proctor, “Agnotology,” 27.

<sup>5</sup> Andrew Bennett, “Literary Ignorance,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 85–86.

<sup>6</sup> Mathias Girel, “The Pragmatics of Ignorance,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 65.

prevents us from more interesting projects.<sup>7</sup> If knowledge is a fundamental concept in epistemology, we might instead use it to explain other phenomena. Furthermore, I will broadly define ignorance as a lack of knowledge. However, for reasons which will soon become clear, talking about a lack of knowledge has somewhat misleading connotations, giving the impression that the person who is ignorant is likely at fault for this state. Additionally, it is difficult to overstate the importance of testimony in the cases I will discuss. There are conflicting views on what it means to have testimony, particularly about whether it counts as a basic source of justification.<sup>8</sup> I will also not be able to delve into such foundational debates.

Ignorance as a topic has been of particular interest to feminist epistemologists, philosophers working on epistemic decolonialization, and thinkers working on critical race theory. This is a consequence of the way in which ignorance has shaped the life of marginalized groups. Power relations between hegemonic groups and marginalized groups are to a large degree built on ignorance. Perhaps the best-studied case here is “white ignorance” as defined by Charles Mills. White ignorance is a “pervasively deforming outlook” present among people socially categorized as white, which enables racial domination by restricting enquiries into this domination.<sup>9</sup> The central part of this is a minimization or denial of the racist history of Western thought and the long-term systemic advantages of white populations.<sup>10</sup> On the side of feminist epistemology, the literature on “epistemic injustice”, as defined by Miranda Fricker, has been very impactful in understanding the different ways in which inadequate epistemic resources cause the inability to understand or express one’s social experience.<sup>11</sup> While those topics are some of the most pressing issues in agnotology, I will not be able to do them justice here.

As Proctor points out, we should not assume that ignorance is always a native state or a mere lack of knowledge. Besides ignorance as a native state, there is also ignorance as a lost realm and ignorance as a strategic ploy. As Proctor fully admits, this is not the only

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<sup>7</sup> Jonathan Jenkins Ichikawa and Matthias Steup, “The Analysis of Knowledge,” in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Summer 2018 (Stanford: Metaphysics Research Lab, Stanford University, 2018), <https://plato.stanford.edu/entries/knowledge-analysis/>.

<sup>8</sup> Cailin O’Connor, Sanford Goldberg, and Alvin Goldman, “Social Epistemology,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Summer 2024 (Stanford: The Metaphysics Research Lab, 2024), <<https://plato.stanford.edu/archives/sum2024/entries/epistemology-social/>>.

<sup>9</sup> Charles C. Mills, “Global White Ignorance,” in *Routledge International Handbook of Ignorance Studies*, ed. Linsey McGoe and Matthias Gross (London: Routledge, 2022), 36.

<sup>10</sup> Mills, “Global White Ignorance,” 39.

<sup>11</sup> Heidi Grasswick, “Feminist Social Epistemology,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Fall 2018 (Stanford: The Metaphysics Research Lab, 2018).

way to divide things up, and there are multiple alternative taxonomies.<sup>12</sup> Likewise, his original distinctions have been further partitioned by different authors. However, I will settle on his distinction for three reasons. First, it allows an easier discussion of power/ignorance and related Foucauldian lines of thought. Second, I do not claim to present an exhaustive taxonomy of ignorance here in the first place, but rather an account of the kinds of ignorance frequently talked about in the agnotological literature. Proctors' distinction is very much the *locus classicus*. Third, while there are edge cases which might conceivably fit into two categories at once, there seems to be no entire new kind of ignorance which Proctor missed.

The first kind of ignorance is the one we are the most familiar with: Ignorance as a native state, as something into which we are born into, and which recedes as we gain more and more knowledge. As Proctor points out, since ignorance as a native state can be overcome with time and effort, it is also frequently seen as a resource or a challenge for scientists.<sup>13</sup> It is helpful to distinguish between the native ignorance of laypeople about scientific matters, and open research questions prompted by the ignorance of scientists themselves – which can be categorized as “conscious ignorance”, as I will later explain. However, it would be prudent not to immediately adopt a simple “information deficit model” of science communication here. Ignorance which *prima facie* seems native might be a different kind of ignorance altogether, and merely having experts which provide knowledge to the public might not be sufficient.

This brings us to ignorance as a strategic ploy or active construct. The mere fact that organizations keep secrets is nothing new or surprising. Early (proto-)scientific endeavors like alchemy already often involved trade secrets, as did guilds; and the success of many products depends heavily on keeping parts of production process secret.<sup>14</sup> However, the last few decades saw an explosion of agnogenesis – the creation of ignorance – at the cost of ordinary citizens. Both large corporations and states have vested interests in constructing ignorance. The prime example of actively constructed ignorance on the part of private companies is the effort of the tobacco industry to keep the public from realizing the health hazards of smoking.<sup>15</sup> Additionally, military classification as well as the entire intelligence sector are key examples of state agnogenesis. However, it is also important to keep in mind that not all actively created ignorance is the result of dishonesty or malicious intent. Proctor

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<sup>12</sup> Proctor, “Agnotology,” 3.

<sup>13</sup> Proctor, “Agnotology,” 3–4.

<sup>14</sup> Proctor, “Agnotology,” 10.

<sup>15</sup> Proctor, “Agnotology,” 11–18.

presents the example of young earth creationists as a group of people who genuinely believe what they preach.<sup>16</sup> Likewise, many of those who spread ignorance about smoking or climate change are true believers.

It is necessary to draw distinctions to some other issues broadly relating to the topic of ignorance. I will not be able to address debates in contemporary political epistemology about the dynamics behind the spreading of misinformation on the internet and social media. Likewise, while issues like fake news are related to some of the instances of ignorance I will discuss, I will not be able to offer a detailed examination of this phenomenon. Most importantly, this thesis should not be understood as part of the discourse on the so-called “post-truth” era in politics. As will become clear later, there are good reasons not to frame contemporary ignorance as the rejection of truth.

Next, there is ignorance as a “lost realm”, also referred to as ignorance as “selective choice” or “passive construct”. Proctor points out that this is not simply a matter of delayed knowledge; lost research might never be recovered or might only be recovered after too much time has passed to continue the original research aims.<sup>17</sup> Furthermore, every decision to gain knowledge about something is also a decision not to gain knowledge about something else – there are opportunity costs to research. Deciding on the focus of a particular research program depends not only on personal interest, but also on economic or political motivations. Sometimes discoveries are just left by the wayside, like in the case of bacteriophage research: Instead of pursuing bacteriophagic viruses as a treatment for bacterial infections, research has centered on the development and application of antibiotics, even though bacteriophages have been discovered first.<sup>18</sup> With antibiotics losing their efficacy, researchers are now forced to turn their attention to alternatives like bacteriophages again.

At least some of the knowledge lost in cases of selectively chosen ignorance is not simply propositional knowledge or knowledge-that. Some of it is knowledge-how or, as it is also called, implicit or tacit knowledge. There is debate around whether it makes sense to speak of those as different kinds of knowledge, which is denied by the so-called intellectualist position.<sup>19</sup> Whether this distinction can be upheld does not matter to the rest

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<sup>16</sup> Peter Galison and Robert Proctor, “Agnotology in Action: A Dialogue,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 38–29.

<sup>17</sup> Proctor, “Agnotology,” 6–7.

<sup>18</sup> Janet Kourany and Martin Carrier, “Introducing the Issues,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 13.

<sup>19</sup> Carlotta Parvese, “Knowledge How,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Fall 2022 (Stanford: Metaphysics Research Lab, Stanford University, 2022), <https://plato.stanford.edu/entries/knowledge-how/>.

of this analysis, so I will speak about those two as distinct kinds of knowledge. Certain skills and practices are not in use anymore as a result of past decisions, including knowledge of obsolete technologies. After all, how many people still know how to train carrier pigeons or drive a horse carriage? By contrast, the disappearance of languages and cultural practices is frequently lamented.

However, not all ignorance is necessarily bad, as agnotologists are quick to point out. Ignorance can in certain instances be seen not as a resource to be conquered, but as something which we should not conquer at all. This constitutes another kind of ignorance, one that is commonly referred to in the literature as “virtuous ignorance”. While the most obvious cases of this are research with potentially catastrophic consequences, such as biological weapons research, there are also cases in which keeping people ignorant is necessary for the preservation of the object of knowledge itself. For instance, some archeological journals do not disclose the exact location of excavation sites in to prevent looting, and some botanical journals do not mention the location of new cactus finds for fear of over-exploitation.<sup>20</sup>

Finally, I want to draw attention to the fact that agnotology as a field has strong normative components. The very category of virtuous ignorance entails normative commitments, and agnotologists attempt to understand ignorance partially with the goal to unmake it. By contrast, there is often a lack of normative considerations in Foucault’s work. Foucault does not deliver moral arguments for specific regimes of truth or propose certain power relations as objectively desirable. This point of tension notwithstanding, my aim is to show that one can address the missing attention to ignorance in Foucault’s analysis while also using his concepts to contribute to the normatively laden investigations of agnotologists.

As the subtitle of Proctor’s and Schiebinger’s *Agnotology* states, the field of agnotology is not simply aimed at understanding the “making” of ignorance but also the possible ways of “unmaking” ignorance. However, they are much more focused on the first part than the second one. I do think that a Foucauldian perspective also has some valuable insights into what unmaking will look like. However, I will not be able to present strategies for unmaking all the kinds of ignorance I present in this thesis. Instead, I will sketch what resistance can look like in the context of power/ignorance, and briefly discuss potential avenues for future research into the “unmaking” side of agnotology.

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<sup>20</sup> Proctor, “Agnotology,” 23.

### 1.3 The Structure of this Thesis

In the next section, I will discuss selected passages by Foucault. There, I will focus on his middle period for the majority of the chapter, particularly drawing on the *Power/Knowledge* collection of texts. Additionally, I will also briefly sketch concepts from his early period, most importantly “*episteme*” and “discourse”. I am going to elaborate on his general understanding of power as well as his analysis of bio-power. Based on Foucault’s understanding of the connection between power and knowledge, I want to show how power and ignorance are connected. By doing so, I want to demonstrate that Foucault lacks a sophisticated analysis of ignorance and the dynamics between power and ignorance. This necessitates the concept of “power/ignorance”.

Following this, I want to discuss the concept of power/ignorance in light of several paradigm cases in the agnotological literature, structured around Proctor’s taxonomy of ignorance. By doing so, I want to deepen the Foucauldian analysis and shed some new light on the role of ignorance in society. I will begin with actively constructed ignorance, distinguishing between ignorance constructed by private companies and ignorance constructed by governments. For the former, I am going to discuss the agnogenesis of the tobacco lobby and the ignorance created about climate change. For the latter, I am going to look at the classification system created by the United States military.

In section four, I will take a deeper look at selectively chosen ignorance. Here, I will investigate the connection between *episteme* and different kinds of selectively chosen ignorance. I will also discuss a case of what can be called community-based ignorance, the loss of knowledge concerning a West Indian abortifacient. I will argue that this and similar cases can be understood as ignorance produced by a certain apparatus. In the fifth section, I will turn to cases which have been labeled as virtuous ignorance in the agnotological literature. I will argue that those cases can mostly be understood as instances of resistance to bio-power. Finally, I will attempt to summarize the ways in which this exercise in synthesizing Foucault and agnotology has proven fruitful. I am also going to give a brief suggestion as to what further work on the issues presented might look like, particularly with regards to unmaking ignorance.

## 2. Foucauldian Concepts for Agnotology

Foucault's approach has been described as the opposite of the approach taken by Immanuel Kant: Whereas Kant tries to show the necessary conditions for knowledge in the apparently contingent, Foucault attempts to show the contingent in the apparently necessary, thus investigating how (supposedly) universal reason is instead the result of contingent historical developments.<sup>21</sup> Foucault himself did not want his work to be treated as a unified oeuvre, preferring to speak of an "author-function" under which the readers and commentators unify the works of an author.<sup>22</sup> Hence, speaking of a "Foucauldian viewpoint" is controversial given his own comments about author-functions and the anti-theoretical sentiments he also sometimes exhibits. However, I will assume here that his analysis can be identified, applied, and deepened, and I will generally speak of a "Foucauldian framework" whenever this is applicable.

The works of Michel Foucault are commonly divided into his early, his middle, and his late period. The nature of power has been one of Foucault's main interests, particularly in the middle period of his work. Whereas his early period marked by his "archeological" approach, his middle period is instead based around his use of genealogy.<sup>23</sup> However, Dreyfus and Rabinow argue that while there is a shift of focus in the methods he employs, we should not speak of a pre-archeological period, a post-archeological period or a post-genealogical period in Foucault.<sup>24</sup> They argue that while there was a shift from archeology to genealogy, this shift does not imply that he gave up on his earlier works. In other words, his works build on each other, and they represent an organic development. Colin Gordon sketches the way Foucault eventually moved from the "rules of discursive formation" to the connection between them and specific forms of social power, arguing that the former laid the groundworks to the latter.<sup>25</sup>

However, as his concept of an author-function shows, thinking of Foucault as a unified, systematic thinker throughout all three periods of his intellectual life constitutes the

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<sup>21</sup> Gary Gutting and Johanna Oksala, "Michel Foucault," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Fall 2022 (Stanford: Metaphysics Research Lab, Stanford University, 2022), <https://plato.stanford.edu/archives/fall2022/entries/foucault/>.

<sup>22</sup> Sara Mills, *Michel Foucault* (London: Routledge, 2003), 22.

<sup>23</sup> Gutting and Oksala, "Michel Foucault."

<sup>24</sup> Hubert L. Dreyfus and Paul Rabinow, *Michel Foucault: Beyond Structuralism and Hermeneutics* (Chicago, IL: University of Chicago Press, 1983), 104, <https://press.uchicago.edu/ucp/books/book/chicago/M/bo3638224.html>.

<sup>25</sup> Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977* (Harvester Press, 1980), 244.

opposite mistake. Nevertheless, there is a strong consistency in his middle period, which is what I will be focusing on in the following passages, occasionally referencing ideas and concepts from his early and late period. I will begin by looking at his analysis of power, followed by his discussion of power/knowledge. I will then discuss the way power works on the body. Additionally, I will briefly discuss discourse and episteme. Finally, I will be addressing Foucault's blind spot regarding ignorance and develop the concept of power/ignorance.

## 2.1 Power/Knowledge

### 2.1.1 Power

Before we can understand power/knowledge, we need to understand what Foucault thought about power on its own. As Dreyfus and Rabinow point out, Foucault's account of power should not be seen as context-free or ahistorical, which is why he uses the term "analytic of power" rather than talking about a theory of power.<sup>26</sup> The most important elements of power which Foucault's analysis brings to the foreground are: Power is a shifting web of relations rather than a stable property; it is dispersed instead of being a top-down phenomenon; a productive force instead of a purely repressive one; and a process which works in very small ways on physical bodies rather than merely at the level of politics and society. All those characteristics will become clear over the rest of this section.

Folk conceptions of power tend to involve the idea that power is something held by a person or institution at the top of society, whether they are a king or an elected official. The majority of people are thus thought to lack power. By contrast, Foucault does not conceive of power as something exercised by the few on the many. Foucault accepts that power dynamics, particularly in institutions like armies or factories, might take the shape of a pyramid.<sup>27</sup> However, this does not mean that such power relations have a single source at the top. Instead, Foucault views power as always relational; and while these relations can be hierarchical and more or less organized, they are not emanating from a single point.<sup>28</sup>

The fact that power is not a top-down phenomenon does not mean that authorities cannot engage in oppressive behavior. It is still very much the case in Foucault's analysis of power that oppression and subjugation are important aspects of it: Foucault argues that there

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<sup>26</sup> Dreyfus and Rabinow, *Michel Foucault*, 184.

<sup>27</sup> Foucault, *Power/Knowledge*, 159.

<sup>28</sup> Foucault, *Power/Knowledge*, 198–99.

are manifold forms of domination and subjugation.<sup>29</sup> Furthermore, while he likens power to a network, he does not mean that power is somehow distributed equally or democratically.<sup>30</sup> Instead, power is circulating through social relations, and those power relations are constantly shifting. There is no stable balance between subjects, such as presented in traditional framings of top-down power held by kings or factory owners. Rather, we need to understand even pyramid-shaped distributions of power as potentially unstable and always dynamic.

This is also evident in the highly original way Foucault thinks about resistance to power. For instance, with the repression of some behaviors, new behaviors will develop, particularly as a form of resistance.<sup>31</sup> This is in some cases obvious, particularly when one thinks of repressive aspects of power: If citizens are not allowed to read certain books, reading them is an act of resistance. More interesting cases of resistance involve the rejection of productive aspects of power; acting against disciplinary power and sometimes even – as I will later argue – refusing knowledge. The possibility of resistance is always already part of the exercise of power, and where no resistance is possible, we should not speak of a power relation at all.<sup>32</sup> This has the somewhat counterintuitive implication that in a hypothetical scenario where someone is being completely controlled, power is not exercised.

This brings me to the next core aspect of Foucault's conception of power: Far from being a purely repressive force, power is instead frequently productive. Foucault argues that if power were purely repressive, nobody would be brought up to obey it; instead, people accept power because "it produces things, it induces pleasure, forms knowledge, produces discourse".<sup>33</sup> Those productive aspects and in particular the production of knowledge is perhaps the most important discovery of Foucault's analysis. This productive aspect also extends to individuals themselves; to their desires, their knowledge of themselves, and their identity.

Foucault argues that individuals are both undergoing and exercising power, making them the "vehicles of power" which are also themselves constituted by power.<sup>34</sup> In other words, individuals are not simply the points on which power works; rather, they are themselves the effects by power. As Sara Mills puts it, we should not think of power as

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<sup>29</sup> Foucault, *Power/Knowledge*, 96.

<sup>30</sup> Foucault, *Power/Knowledge*, 99.

<sup>31</sup> Mills, *Michel Foucault*, 33–34.

<sup>32</sup> Mills, *Michel Foucault*, 40.

<sup>33</sup> Foucault, *Power/Knowledge*, 119.

<sup>34</sup> Foucault, *Power/Knowledge*, 98.

something static that one possesses, but rather as something that is done or performed.<sup>35</sup> Power is performed particularly through and between the individuals it produces. Foucault also refers to this productive process as “individualization”. People are marked as individuals through a variety of rituals, and the way they are individualized depends on the general regime of power. He offers the example of individualization in the Feudal era: Written accounts of great deeds, genealogies and names, rituals of allegiance and ceremonies which mark power relations all serve to individualize nobles.<sup>36</sup>

By focusing simply on the top of legal hierarchy, we cannot grasp the nature of power. This is particularly clear in the context of Foucault’s discussion of the “system of right”. This system includes laws as well as the institutions and “apparatuses” (a term I will return to later) tasked with applying those laws.<sup>37</sup> In this context, Foucault provides his interest in punishments as an example: Instead of focusing on the king who decides the appropriate punishment, he focuses on the local points where it is exercised. Rather than looking at a singular will which rises out of a multiplicity of wills – like Thomas Hobbes in his *Leviathan* – he wants to study the subjects themselves.<sup>38</sup> Foucault cautions against asking questions about the motives and aims of those who exercise power. He wants to draw attention to the external practices of power, rather than to the internal point of view of agents.<sup>39</sup> At first glance, this part of his analysis might seem problematic for the later parts of my thesis, since I will discuss the motives of the producers of ignorance. However, I think that we can consider analyzing those motives as helpful for understanding their strategies, so long as we do not consider it strictly as a part of a power/ignorance analysis per se.

A few remarks about possible misinterpretations are in order. It is important not to attribute to Foucault some kind of belief in the omnipotence of power; even though it is possible to speak of the near omnipresence of power relations in society.<sup>40</sup> Furthermore, Foucault frequently employs military metaphors and talks about programs and strategies. However, this does not imply a central planner of power. Additionally, while Foucault wants to focus on other parts of the state rather than the person at the very top, this should not be construed as if the state is somehow independent from other societal structures. On the

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<sup>35</sup> Mills, *Michel Foucault*, 35.

<sup>36</sup> Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, Second Edition (New York: Vintage Books, 1995), 191–92.

<sup>37</sup> Foucault, *Power/Knowledge*, 95.

<sup>38</sup> Foucault, *Power/Knowledge*, 98.

<sup>39</sup> Foucault, *Power/Knowledge*, 97.

<sup>40</sup> Foucault, *Power/Knowledge*, 246–47.

contrary, the state is drawing on many pre-existing power relations like family or kinship, and Foucault describes the web of power states put over those existing relations as a kind of “meta-power”.<sup>41</sup>

I want to return to the concept of an “apparatus”, which I have already briefly alluded to, and which Foucault uses throughout his discussions on power/knowledge. There are different perspectives in the secondary literature on Foucault about the translation of the term “*dispositif*”, the original French term. Some translators use “dispositive”, while Dreyfus and Rabinow insist on not translating it at all. However, I will generally opt to use the English translation “apparatus” here. Dreyfus and Rabinow offer another translation as “grid of intelligibility”, a term referring to the fact that historians can analyze certain practices as cohering with each other and serving the same goal.<sup>42</sup> However, the term also refers to the practices themselves. Foucault defines an apparatus as follows:

What I'm trying to pick out with this term is, firstly, a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions - in short, the said as much as the unsaid. [...] The apparatus itself is the system of relations that can be established between these elements. Secondly, what I am trying to identify in this apparatus is precisely the nature of the connection that can exist between these heterogeneous elements. [...] Thirdly, I understand by the term 'apparatus' a sort of-shall we say formation which has as its major function at a given historical moment that of responding to an urgent need. The apparatus thus has a dominant strategic function.<sup>43</sup>

One such strategic need was the subjection and control of the mentally ill, which were seen as burdensome and needed to be assimilated.<sup>44</sup> Foucault himself saw knowledge as an intrinsic part of an apparatus – whether as discourses, scientific statements, or philosophical propositions. For instance, Foucault argues that while it makes sense to talk about ideologies accompanying the mechanisms of power, we should instead be focused on the apparatuses of knowledge.<sup>45</sup> An apparatus can accompany an institution, if the apparatus serves an urgent need and works to establish relations between a heterogeneous ensemble. Foucault mentions both the army and the factory as apparatuses.<sup>46</sup>

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<sup>41</sup> Foucault, *Power/Knowledge*, 122.

<sup>42</sup> Dreyfus and Rabinow, *Michel Foucault*, 120–21.

<sup>43</sup> Foucault, *Power/Knowledge*, 194–95.

<sup>44</sup> Foucault, *Power/Knowledge*, 195.

<sup>45</sup> Foucault, *Power/Knowledge*, 102.

<sup>46</sup> Foucault, *Power/Knowledge*, 159.

### 2.1.2 Knowledge

With those aspects of power in mind, how are power and knowledge intertwined in Foucault's work? Power and knowledge are not simply connected in the sense that knowledge is an instrument of power, as expressed in the famous motto of Francis Bacon that "knowledge is power".<sup>47</sup> At the same time, Foucault does not claim that they are the same, or that knowledge can be reduced to power.<sup>48</sup> Instead, those two phenomena are inseparable, which is why Foucault begins to use the concept of "power/knowledge". The following quote expresses his reasoning in greater detail:

We should not be content to say that power has a need for such-and-such a discovery, such-and-such a form of knowledge, but we should add that the exercise of power itself creates and causes to emerge new objects of knowledge and accumulates new bodies of information. [...] The exercise of power perpetually creates knowledge and, conversely, knowledge constantly induces effects of power. [...] Modern humanism is therefore mistaken in drawing this line between knowledge and power. [...] It is not possible for power to be exercised without knowledge, it is impossible for knowledge not to engender power. 'Liberate scientific research from the demands of monopoly capitalism': maybe it's a good slogan, but it will never be more than a slogan.<sup>49</sup>

As the quote above shows, Foucault does not argue for a simple connection between knowledge and power. It is not enough to say that a king needs to have knowledge to stay in power, or that a government official needs to know how to administer the laws correctly. To say so would be to remain at the Baconian understanding of knowledge as merely instrumental. While institutions which produce knowledge also entail power relations, a reduction of this connection to things like university hierarchies is deemed as naïve by Foucault.<sup>50</sup> Power/knowledge becomes clearer once we again consider the productive aspects of power:

I would also distinguish myself from para-Marxists like Marcuse who give the notion of repression an exaggerated role- because power would be a fragile thing if its only function were to repress, if it worked only through the mode of censorship, exclusion, blockage and repression [...] Far from preventing knowledge, power produces it. [...] The fact that power is so deeply rooted and the difficulty of eluding its embrace are effects of all these connections. That is why the notion of repression which mechanisms of power are generally reduced to strikes me as very inadequate and possibly dangerous.<sup>51</sup>

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<sup>47</sup> Gutting and Oksala, "Michel Foucault."

<sup>48</sup> Dreyfus and Rabinow, *Michel Foucault*, 203.

<sup>49</sup> Foucault, *Power/Knowledge*, 51–52.

<sup>50</sup> Foucault, *Power/Knowledge*, 52.

<sup>51</sup> Foucault, *Power/Knowledge*, 59.

Again, Foucault is distinguishing himself from prevailing narratives about power in academia, most importantly the perspective on power shared by Marxists and members of the Frankfurt School. As the quote above shows, Foucault considers power as necessary for the production of knowledge. Instead of simply thinking of censorship when we consider the relation between power and knowledge, we should consider, for instance, the aim of education to produce certain kinds of citizens. As Foucault points out, it is dangerous to consider power as a purely negative phenomenon. If we only consider it a repressive force, we will enact ineffective strategies to resist or change power relations.

Foucault also explicitly mentions the connection between economic power and knowledge.<sup>52</sup> He might have in mind economic incentives for the production of certain kinds of knowledge. The obvious way this happens is through governmental or private sources of funding for universities. A less obvious way lies in the fact that certain jobs are in demand, which in turn drives students to decide on a particular course of study. However, every economic incentive to study something is also a disincentive to study something else. Economic power might be the primary cause of knowledge-how or implicit knowledge becoming extinct, as seen in the disappearance of horse carriage drivers or punch card programmers. To use Foucault's formulation, monopoly capitalism thus does not simply put forward demands of scientific research, but also denies other avenues of research.

Foucault is distancing himself from a certain picture of the relation between power and knowledge where it is possible to speak truth to power. Science communication itself is an area of power/knowledge which Foucault did not spend much time on. However, he has written extensively about the role of intellectuals. In a Foucauldian framework, the folk understanding of an intellectual with the ability to speak truth to power is problematic. As Rabinow and Dreyfus argue, unlike a doctor who is able to treat a patient from an external role, there is no such position open to an intellectual or philosopher.<sup>53</sup> However, it might help to briefly consider what Foucault in his later years had to say about "*parrhesia*", a concept which loosely translates into "frankness in speaking the truth".<sup>54</sup>

Foucault traces the meaning of the word "*parrhesia*" through Ancient Greece and offers some general criteria of the kind of speech it refers to: First, there is a certain frankness and directness involved. While *parrhesia* might involve rhetorical techniques, the *parrhesiastes* wins others over not thanks to rhetorical flourishes but because of a complete

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<sup>52</sup> Foucault, *Power/Knowledge*, 51.

<sup>53</sup> Dreyfus and Rabinow, *Michel Foucault*, 202.

<sup>54</sup> Michel Foucault, *Fearless Speech*, trans. Joseph Pearson (Los Angeles: Semiotext(e), 2001), 7.

and exact account.<sup>55</sup> Secondly, *parrhesia* is about telling the truth. However, Foucault hastens to point out that Ancient Greek thinkers had a different conception of truth, evidence, and certainty than modern philosophers.<sup>56</sup> Next, there is also a sense of danger or risk involved. In Ancient Greece, this was sometimes the danger of losing one's life when speaking to a tyrant, but it might also involve a smaller risk such as hurting a friend or risking social standing when opposing majority opinions; a position in which one performs a critique of the interlocutor.<sup>57</sup> Foucault adds that there is a sense of duty involved on part of the *parrhesiastes* to correct a perceived wrongdoing.<sup>58</sup> He concludes by referencing a question which applies both in the case of Ancient Greek philosophy and in contemporary philosophy, namely the question of the importance of telling the truth both for the individual and for the society.<sup>59</sup>

Foucault argues that whereas philosophers have traditionally understood their aim as the restriction of power through moral and political truths, truth is produced through power and power exercised through the production of truth.<sup>60</sup> He argues that the main task of intellectuals will be to enable a new politics of truth, instead of the impossible task to remove power from truth.<sup>61</sup> Because power/knowledge is not a phenomenon which can be cleanly separated in its composite parts, it is necessary to affect change at the level of the distributions of power/knowledge instead. In the later sections, it will become clear that many spreaders of ignorance are acting as if they were performing *parrhesia*. They present themselves as bastions of truth in the face of institutional pressure.

### 2.1.3 Power and the Body

As some of the previous passages of Foucault have already alluded to, there is a deep connection between power and the body. Large parts of his historical work are focused on the discovery of the body as a point of influence for power. We can also see this in the way knowledge about populations became necessary for ruling states. Whereas in the Feudal Age, power worked through signs of loyalty offered to feudal lords and levies – like taxes or soldiers in times of war – provided to those lords, in the modern era, the productive service

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<sup>55</sup> Foucault, *Fearless Speech*, 12.

<sup>56</sup> Foucault, *Fearless Speech*, 14–15.

<sup>57</sup> Foucault, *Fearless Speech*, 16–17.

<sup>58</sup> Foucault, *Fearless Speech*, 19.

<sup>59</sup> Foucault, *Fearless Speech*, 170.

<sup>60</sup> Foucault, *Power/Knowledge*, 93–94.

<sup>61</sup> Foucault, *Power/Knowledge*, 133.

of citizens became more relevant.<sup>62</sup> Foucault speaks in this context of power being incorporated in a literal sense, that is, acting through their bodies in their everyday behavior. Foucault traces knowledge of bodies to the way disciplinary power was exercised in military and education.<sup>63</sup> His central discovery is what he terms the “micro-physics of power”, which are meticulous rituals which work on the body itself.<sup>64</sup> In other words, he talks about the micro-physics of power to address the way power works in very small, often repetitive ways on the body.

The term “ritual” is not simply metaphorical, but in some cases literal: Foucault describes the meticulous ways in which work in factories was to take place as having a “religious air” about them.<sup>65</sup> In the context of the military, those rituals are parts of military drill; in the context of education, there are specific rules for taking how the pupils were to act during the striking of the clock.<sup>66</sup> Those are different expressions of disciplinary power. It is important to keep in mind that in the historical contexts described by Foucault, many of those rituals – like sitting down at the ring of a bell or working an exact number of hours – were genuinely new. Timekeeping in factories, schools and other institutions was only possible through mechanical clocks; rigorous, written instructions required widely available printing presses. In other words, those were new social technologies enabled by physical technologies.

To return to an earlier point, Foucault argues that individuals are created as the result of the effects of power, particularly through the power which takes place through their bodies. I have already mentioned an example of individualization in the Feudal era. Individualization in a disciplinary regime looks different: Subjects are created through rituals which shape them into the kind of individual required by the institutions in question, such as well-behaved pupils capable of sitting still for an hour or soldiers capable of exact movements in formations. In the eighteenth century, there was the discovery of what Foucault terms “docile bodies”: Bodies which were “subjected, used, transformed and improved”, akin to machines.<sup>67</sup> Foucault goes so far as to argue that labor, besides its obvious

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<sup>62</sup> Foucault, *Power/Knowledge*, 125.

<sup>63</sup> Foucault, *Power/Knowledge*, 59.

<sup>64</sup> Dreyfus and Rabinow, *Michel Foucault*, 114.

<sup>65</sup> Foucault, *Discipline and Punish: The Birth of the Prison*, 149.

<sup>66</sup> Foucault, *Discipline and Punish: The Birth of the Prison*, 150.

<sup>67</sup> Foucault, *Discipline and Punish: The Birth of the Prison*, 136.

productive function, also always has a disciplinary function.<sup>68</sup> In other words, people are turned into docile workers through the process of working.

In the eighteenth and nineteenth century, institutions like the prison or the mental ward were created in order to rehabilitate criminals and cure the mentally ill. However, prisons fail at their purpose of rehabilitation as evidenced by recidivism rates; which is why Foucault locates the true purpose of prison not at the level of eliminating criminality, but at distinguishing and distributing it.<sup>69</sup> It helps to consider Foucault's discussion of the Panopticon as an example. Dreyfus and Rabinow see the Panopticon as a point where bodies, space, power, and knowledge are connected.<sup>70</sup> The Panopticon was a concept for a prison devised by the philosopher Jeremy Bentham, and while he was not the first to come up with the architectural design, he recognized the enormous potential for applications in other contexts, such as in education, the military, and factories.<sup>71</sup>

A perimeter building in the form of a ring. At the centre of this, a tower, pierced by large windows opening on to the inner face of the ring. The outer building is divided into cells [...] These cells have two windows, one opening on to the inside, facing the windows of the central tower, the other, outer one allowing daylight to pass through the whole cell. All that is then needed is to put an overseer in the tower and place in each of the cells a lunatic, a patient, a convict, a worker or a schoolboy. The back lighting enables one to pick out from the central tower the little captive silhouettes in the ring of cells. In short, the principle of the dungeon is reversed; daylight and the overseer's gaze capture the inmate more effectively than darkness, which afforded after all a sort of protection.<sup>72</sup>

It is important not to read the Panopticon not simply as a model for surveillance. While the Panopticon is a very efficient way to surveil large numbers of people with minimal overseers, the real genius of it as a piece of social technology lies in the fact that people will begin to monitor their behavior themselves. The convicts in the Panopticon do not know if they are watched, and, as a result, begin to act as if they are constantly watched. As Sara Mills puts it, the prisoner has internalized the behavior expected of them by their oppressor.<sup>73</sup>

A significant form of power which will be important in the sections is what Foucault terms "bio-power". Bio-power is concerned with the health and welfare of populations, aiming at increasing their productivity and strength.<sup>74</sup> It is also the form of power

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<sup>68</sup> Foucault, *Power/Knowledge*, 161.

<sup>69</sup> Foucault, *Discipline and Punish: The Birth of the Prison*, 272.

<sup>70</sup> Dreyfus and Rabinow, *Michel Foucault*, 192.

<sup>71</sup> Foucault, *Power/Knowledge*, 148.

<sup>72</sup> Foucault, *Power/Knowledge*, 147.

<sup>73</sup> Mills, *Michel Foucault*, 46.

<sup>74</sup> Dreyfus and Rabinow, *Michel Foucault*, 8.

characteristic of our contemporary period, as opposed to older forms of power. Foucault locates the origins of the politics of health and the importance of healthy populations in the eighteenth century. However, he also draws attention to the fact that bio-political efforts were not pursued entirely by states. He mentions both the Quakers (referring presumably to their efforts in the temperance movement against alcohol) as well as academic associations documenting knowledge of disease outbreaks.<sup>75</sup> The reason for keeping the population healthy lies in the self-interest of states: Poverty increased the risk of illness and thus compromised the workforce and the capacity of states to wage war.<sup>76</sup> This led to the idea of a duty of citizens to stay healthy, and power apparatuses were created to ensure that their bodies stayed healthy.<sup>77</sup>

One of the revolutionary ideas at play in Foucault's work is that the conventional view of the connection between power and technology leaves something important out. Technology is often framed as implying mastery over nature, and the standard examples of this include the rise of physics and chemistry as society-shaping. However, his work explicitly calls attention to biological and sociological technologies, and thus to mastery over people.<sup>78</sup> Indeed, the Panopticon is an example of just such a piece of social technology. As mentioned before, power creates the conditions of resistance against it. As Mills argues, thinking about power in a Foucauldian way also means thinking of it as open to resistance and therefore as less stable.<sup>79</sup> However, I want to point out that Foucault sees merely taking over the (metaphorical) tower of the panopticon not as a useful act of resistance against the system, but rather as a continuation of it: In an interview, he asked the rhetorical question of whether it would be better if the prisoners took over and ran the tower.<sup>80</sup>

#### 2.1.4 Episteme and Discourse

Engaging with the contemporary agnotological literature using a Foucauldian lens shows some tensions between those two frameworks. In general, Proctor and most of his contemporaries operate with an understanding of knowledge where what we know is continuously expanding. Of course, there are breaks in this expansion of knowledge: Sometimes ignorance is created through accidental or conscious destruction of knowledge,

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<sup>75</sup> Foucault, *Power/Knowledge*, 167.

<sup>76</sup> Foucault, *Power/Knowledge*, 169.

<sup>77</sup> Foucault, *Power/Knowledge*, 170.

<sup>78</sup> Foucault, *Power/Knowledge*, 238.

<sup>79</sup> Mills, *Michel Foucault*, 52.

<sup>80</sup> Foucault, *Power/Knowledge*, 164–65.

such as ancient texts. Other times, ignorance is created to drown out knowledge, such as with the agnogenesis behind the harms of smoking. Nevertheless, in this framework, knowledge is rather stable. While truth that has been found might be hidden or destroyed, it has still been found in the first place. In other words, knowledge is accumulative to the degree that certain actors, like the state, powerful lobbies, or scientific institutions themselves, want it to be. Thus, agnotologists usually do not discuss radical shifts in our body of knowledge.

By contrast, Foucault emphasizes such radical shifts. For him, the production of knowledge necessitates rules which are historically contingent. We can see this most clearly in his concept of *episteme*. Broadly speaking, this concept refers both to the body of knowledge and the ways of knowing inherent in certain periods.<sup>81</sup> According to Foucault, the *episteme* makes the separation between scientific and non-scientific statements possible.<sup>82</sup> This means that changes in *episteme* also change the possibilities of what can be known. We might say that while knowledge can expand within certain limits, those limits are different and change over time. The *episteme* itself is constantly moving and shifting.<sup>83</sup> Hence, the *episteme* is not just relevant to the production of knowledge, but also the ways this knowledge is kept in circulation. Foucault defines it as follows:

This episteme may be suspected of being something like a world-view, a slice of history common to all branches of knowledge, which imposes on each one the same norms and postulates, a general stage of reason, a certain structure of thought that the men of a particular period cannot escape [...] By episteme, we mean, in fact, the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems [...] The episteme [...] is the totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities.<sup>84</sup>

It is necessary to briefly explain what Foucault has in mind when he speaks of discourses. By discourse, Foucault refers at times to the rules and structures which produce statements, and at other times the individualizable group of statements themselves.<sup>85</sup> A main interest of his is the way discourses are regulated. Certain utterances are excluded from the discourse. There are three external inclusions: Some topics are taboo, which means that it is difficult to speak on those; some people are classified as mad and consequently ignored by

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<sup>81</sup> Mills, *Michel Foucault*, 28.

<sup>82</sup> Foucault, *Power/Knowledge*, 197.

<sup>83</sup> Michel Foucault, *The Archeology of Knowledge and the Discourse on Language*, trans. A. M. Sheridan Smith (New York: Pantheon Books, 1972), 192.

<sup>84</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 191.

<sup>85</sup> Mills, *Michel Foucault*, 53.

the sane; and some statements are kept in circulation because they are treated as true by institutions such as universities.<sup>86</sup> Another term related to this is what Foucault calls “discursive formations”.

Discursive formations are “defined neither in terms of a particular object, nor a style, nor a play of permanent concepts, nor by the persistence of a thematic”, but rather defined as a system of statements.<sup>87</sup> Crucially, those statements are not linked in a grammatical or psychological way, but rather linked as statements *qua* statements.<sup>88</sup> Statements belong to a discursive formation, and it is possible to analyze the statement according to its discursive formation, and vice versa.<sup>89</sup> Foucault continues to argue that a discourse is based on a limited number of statements, making it a product of history and not something that one day arose and sticks around indefinitely.<sup>90</sup> Finally, the *episteme* makes it possible to grasp the limitations on discourse.<sup>91</sup>

It might be helpful to distinguish the *episteme* from a similar but different concept, Kuhn’s paradigms. The *episteme* differs from a paradigm both in the scope it encompasses and in the way it structures epistemological figures. The *episteme* makes sciences possible, rather than merely enabling the work within a particular work of science. Dreyfus and Rabinow also argue that being bound by a widely accepted paradigm is a rather unique feature of natural sciences; the “human sciences” studied by Foucault exhibit competing pseudo-paradigms.<sup>92</sup> Foucault himself argues that archeology attempts to describe the domain of knowledge rather than the structure of science.<sup>93</sup> On a more general note, it is also important to keep in mind that Foucault is basing his descriptions of shifts in *episteme* on certain developments in Western thought starting from the renaissance. The scope of his work is thus rather restricted when it comes to the intellectual history of other parts of the world.

In his work *The Archeology of Knowledge*, Foucault reengages with his earlier works, most importantly the analysis provided in *The Order of Things*, in order to deepen his analysis. For instance, he argues that his *History of Madness* should be read as attempting to elucidate the discursive formations which governed the way madness was talked about until

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<sup>86</sup> Mills, *Michel Foucault*, 57–58.

<sup>87</sup> Foucault, *Power/Knowledge*, 63.

<sup>88</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 115.

<sup>89</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 116.

<sup>90</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 117.

<sup>91</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 192.

<sup>92</sup> Dreyfus and Rabinow, *Michel Foucault*, 76.

<sup>93</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 195.

the nineteenth century.<sup>94</sup> He refers to this way of analysis as “archeological”. A central point in Foucault’s intellectual development is the realization that those discursive formations produce the object about which they speak.<sup>95</sup> For example, one of the main conclusions of *The Order of Things* is that man as observer and subject can only emerge in a later *episteme*.<sup>96</sup> To return to an earlier point about the continuities and discontinuities, we can say that at first Foucault attempts the analysis of discourse, whereas he later turns to a genealogical investigation of the historical conditions of discursive formations.

One might claim that knowledge itself in Foucault is treated as a black box: There is no clear process under which knowledge gathering in general works, no theory like Popperian falsificationism about the scientific procedure. However, this is a consequence of the analysis Foucault attempts. Under different *epistemes*, there are differences in what can be known in the first place. For example, looking at sexuality in a specific episteme might involve looking at it as a group of objects which can be talked about or not talked about, as a group of concepts or a group of choices.<sup>97</sup> One might also attempt to analyze very different phenomena in a similar way, such as a painting and the political behavior of a society or a class.<sup>98</sup>

It is a common theme in Foucault’s work that discourses which aim at preventing something instead have the effect of creating it. His works on the creation of delinquent or mentally ill people are good examples of this. Foucault also argues that sexuality is a product of power rather than something which is repressed by power.<sup>99</sup> In other words, the discourses surrounding sexuality do not have the desired effect, and the problematization of sexuality leads to a proliferation rather than a reduction of it.

However, there are also internal exclusions, which serve to distinguish those who are authorized to speak from those who are not. First, there is commentary, something which is of fundamental importance to many scientific practices. A text is elevated by being commented on, and so is the person commenting, because they are able to show their mastery of the text.<sup>100</sup> Next, as already mentioned, there is the author-function. The author-function is an exclusion in which works, oftentimes highly different, are seen as unified through the

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<sup>94</sup> Gutting and Oksala, “Michel Foucault.”

<sup>95</sup> Dreyfus and Rabinow, *Michel Foucault*, 61.

<sup>96</sup> Dreyfus and Rabinow, *Michel Foucault*, 29.

<sup>97</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 193.

<sup>98</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 194.

<sup>99</sup> Foucault, *Power/Knowledge*, 120.

<sup>100</sup> Mills, *Michel Foucault*, 59.

same author. The third internal exclusion is the distinction between different academic disciplines.<sup>101</sup> Finally, there is the “rarefaction of the subject”, that is, the way in which some people are permitted to speak.<sup>102</sup>

As Dreyfus and Rabinow argue, Foucault’s concept of *episteme* was rather short-lived.<sup>103</sup> They also talk about what they consider to be the methodological failure of archeology: The idea that archeology was a stable, autonomous enquiry into discourses cannot be sustained, since it is itself a discursive system; additionally, the development of representation as described by Foucault shows a stronger continuity than he believed.<sup>104</sup> While Foucault still draws on archeology in his later works, those works are characterized by his switch to a genealogical method, as mentioned before. In the middle period of his works, Foucault himself reevaluated *episteme*: He began using the term as a specific kind of discursive apparatus which allows to distinguish scientific statements from non-scientific ones.<sup>105</sup> In other words, apparatuses can be discursive or non-discursive. Since his discussion of *episteme* as the set of procedures to produce and circulate knowledge does not entail his later focus on, for instance, the way knowledge, power and bodies are connected, it falls into the former category. We can thus see that in his later work he put less emphasis on the straightforwardly epistemological questions concerning the way knowledge is produced in academia.

This is also why I will not spend more time on *episteme* and its discursive formations here. While those connections to agnotology are not emphasized by Foucault because of his focus on knowledge, we could argue that he would not be particularly surprised by them. There is thus no strong need to take Foucauldian analysis further like in the sections on power. However, as I will argue later, there are some agnotologists who would benefit from including those Foucauldian concepts in their classification of ignorance. This is why I will later briefly expand on the connection between *episteme* and certain kinds of selectively chosen ignorance in section 4.1.

## 2.2 Power/Ignorance

However, the passages and concepts listed so far are also evidence of a blind spot in Foucault. What he says about knowledge in many contexts also applies to ignorance. In other

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<sup>101</sup> Mills, *Michel Foucault*, 60.

<sup>102</sup> Mills, *Michel Foucault*, 61.

<sup>103</sup> Dreyfus and Rabinow, *Michel Foucault*, 18.

<sup>104</sup> Dreyfus and Rabinow, *Michel Foucault*, 99–100.

<sup>105</sup> Foucault, *Power/Knowledge*, 197.

words, power produces knowledge and ignorance alike. As Foucault reminds us, truth is not something outside of power, but rather produced “virtue of multiple forms of constraint”.<sup>106</sup> Truth – and by extension knowledge – is contingent on societal, political, and economic factors. There are mechanisms for this production, which include ways of distinguishing true from false statements. It is helpful to look at the way Foucault describes the production and transmission of truth and compare it to the production and transmission of ignorance. He singles out five traits of what he calls the “political economy of truth”.<sup>107</sup> If we consider the five traits which according to Foucault characterize the political economy of truth in our society, we can take this Foucauldian idea further and apply it in the context of agnotology:

In societies like ours, the 'political economy' of truth is characterised by five important traits. 'Truth' is centred on the form of scientific discourse and the institutions which produce it; it is subject to constant economic and political incitement (the demand for truth, as much for economic production as for political power); it is the object, under diverse forms, of immense diffusion and consumption (circulating through apparatuses of education and information whose extent is relatively broad in the social body, notwithstanding certain strict limitations); it is produced and transmitted under the control, dominant if not exclusive, of a few great political and economic apparatuses (university, army, writing, media); lastly, it is the issue of a whole political debate and social confrontation ('ideological' struggles).<sup>108</sup>

First, both the pursuit of truth and the pursuit of ignorance depend on institutions. The ignorance which is constructed by private companies does not aim at repressing the truth, but rather at creating doubt over which scientists to trust. One of the clearest examples of this has been the decades long effort at denying that smoking cigarettes causes cancer. The tobacco lobby has spent millions of dollars to produce pseudo-scientific institutions and paid experts to create doubt about the health effects of tobacco. It has rewarded sowing dissent about the scientific consensus and the hired scientists in charge have rewarded the lack of policy against the consumption of tobacco. Instead of keeping scientific research hidden, those companies created institutions, so-called experts, and pseudo-scientific publications.

The truth is still out there – it is, however, vastly harder to find for laypeople. The tobacco lobby was not simply repressing truth, but rather producing ignorance. This ignorance is in turn transmitted over vast networks. This ensured for many years that the market for cigarettes would not dry up – by creating a specific kind of ignorant consumer. It is important to be precise with the language involved here: The tobacco lobby did not simply

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<sup>106</sup> Foucault, *Power/Knowledge*, 131.

<sup>107</sup> Foucault, *Power/Knowledge*, 132.

<sup>108</sup> Foucault, *Power/Knowledge*, 131–32.

keep people ignorant; it made them ignorant. We could consider this a special form of docile body in the Foucauldian sense: A body turned docile through addiction. I will address those topics in section 3.

Secondly, there are constant economic and political incentives in our political economy of truth. This results in ignorance about the research avenues for which there is no demand. This is trivially true in the sense that there is simply not enough research funding for all scientific endeavors. However, it is also important to note that there can be multiple reasons why there is no demand: Perhaps those areas might not be deemed worthy of research and thus lack funding; scientists who dabble in those areas might even suffer ridicule or exclusion. Alternatively, research topics might not be considered urgent enough and left by the wayside. Finally, there are topics around which both science and the broader public has seemingly settled. In those instances, further research might seem pointless. In other words, one of the constraints mentioned above is that the production of truth also requires closing off certain avenues of research. The production of truth in scientific discourses also requires a certain kind of ignorance, especially selectively chosen ignorance. The phenomenon described by Foucault as a “politics of truth” functions as a general politics of what is a plausible or legitimate research avenue. It is this general politics which also produces a vast area of ignorance in our landscape of scientific truths.

In the Foucauldian picture, knowledge is produced by scientific institutions and truths are centered around scientific discourse. There are knowledge traditions which do not find a home in those institutions and are thus excluded from scientific discourse. The great political and economic apparatuses mentioned by Foucault have chosen to ignore them. They are thus also excluded by what he calls immense diffusion and consumption. This is yet another exclusion mechanism, this time keeping them out of the debate and social confrontation mentioned above. Selectively chosen ignorance, more than other kinds of ignorance, is a phenomenon in which we are not even aware of the possibility of other ways of knowing.

Third, ignorance is diffused and circulating. Just like Foucault criticized the description of power as a top-down phenomenon, we should consider ignorance to exhibit a diffused and network-like quality. Only a narrow form of actively constructed ignorance is created through government censorship and top-down repression. The most striking example of this when it comes to scientific research is the sheer amount of classified material related

to military purposes – Peter Galison estimates it at more than 10 billion pages.<sup>109</sup> Nevertheless, this ignorance is aimed at the production of military superiority; it is one of the main sources of US military strength. Yet it is a prime example of how knowledge is kept out of circulation, with ignorance taking its place.

Fourth, relating to the points made earlier, the production and spread of ignorance depends on a few apparatuses. To put it in other words, the exercise of power also creates ignorance. This might happen in drastic and obvious ways, such as the destruction of native knowledge practices during colonialism, or it might happen in subtler forms, such as schools teaching creationism as an alternative to the theory of evolution. Likewise, there are not simply bodies of knowledge but also bodies of ignorance, avenues of research that are deemed too dangerous or topics that have fallen out of favor. Societies are constantly accumulating research that is classified and cannot be known by the unauthorized public. Furthermore, ministries of education and school boards are frequently leaving information out of school curricula because it is either deemed too complex or not relevant for educational purposes.

Finally, there is the aspect of social confrontation. We can see this confrontation taking place between corporations and the state. There are ideological struggles taking place over ignorance just like over knowledge. Indeed, ignorance can be a matter of life and death. All of those traits show that Foucault really should have considered another concept in parallel to power/knowledge, namely “power/ignorance”. Power is dispersed through society, but so is ignorance. Power is productive, not just in the sense that it produces things but also subjects; something which is true of ignorance as well.

All those assumptions of Foucault’s analysis are fruitful for agnotological investigations. For instance, it would not be helpful to understand ignorance as something which only spreads from the top down, without any multiplicity of wills involved. Ignorance also takes place between individuals, both in its more passive and in its more active forms. It also has certain points where it is exercised – whether those are deliberate decisions not to study something or unconscious choices not to transfer knowledge. Even state censorship has individual points of exercise: People might pre-emptively self-censor more than the state requires, or they might find new ways of transmitting information which bypass censorship. Hence, it makes sense to study not simply the main spreaders of ignorance, but also the subjects of ignorance themselves. After all, it is not simply large institutions which spread

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<sup>109</sup> See also: Galison, Peter. “Removing Knowledge.” *Critical Inquiry* 31 (2004): 229-243.

ignorance; the ignorance put into circulation by public figures is spread by word of mouth from those who follow them to those who do not. Likewise, ignorance can be handed down over generations.

Dreyfus and Rabinow point to the fact that knowledge is an essential condition for the growth of our technological societies.<sup>110</sup> However, the same thing can be said for ignorance. The ability to focus growth on certain areas and not others implies the use of ignorance as a tool. For instance, researching means of abortion instead of furthering knowledge about how to increase fertility would hinder population growth, which was and still is frequently a desirable goal for the economic growth of a country – an issue I will return to in section 4. There, I will also talk about the connections between ignorance and *episteme*.

Foucault himself has little to say about ignorance in his explanations of the *episteme*. We can already see an aspect which his later work emphasizes even more: The productive capacity of the phenomena he describes. Since *episteme* is that which makes knowledge possible, it can be inferred that it is also that which makes ignorance possible. It does so not in a direct way, but rather in not allowing certain discursive practices or epistemological figures to be established. There are statements which do not belong to a specific group of statements. This is ignorance at the level of the *episteme*: Since there are not infinite statements involved here, by necessity, there is ignorance about the ones left out.

It is important to remember that Foucault himself was not putting forward normative arguments about how knowledge should be connected to power. At best, he had an interest in the genealogy of normative arguments about power. The mere fact that knowledge and power are intertwined is thus neither a critique of knowledge nor a vindication of power; the same goes for the idea of power/ignorance. Ignorance is not itself a normative term. Admittedly, this means that Foucault's approach is somewhat in tension with philosophers dealing with agnotology, since they are frequently talking about different ignorances being either virtuous or harmful. However, there are still useful insights, particularly when it comes to the way Foucault conceives of resistance to power.

To return to the discussion of the Panopticon: It is important to keep in mind that the Panopticon also serves as a tool of ignorance. The prisoners are not aware if they are watched, and the way that power is exercised is not transparent to them. Ignorance is an intrinsic part of Jeremy Bentham's architectural design. Likewise, many of the social

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<sup>110</sup> Dreyfus and Rabinow, *Michel Foucault*, 203.

technologies developed in the context of disciplinary power can generate ignorance. Some micro-physics of power/knowledge are also micro-physics of power/ignorance, such as the way consumers are nudged into choosing a product. Docile bodies even need to be kept ignorant for certain rituals of power to work on them: Factory workers are unlikely to revolt if they are refused an education, soldiers are less likely to desert if they are kept ignorant about low odds of survival. By contrast, there are also some cases where resistance to power requires ignorance. I will return to this issue in section 5.

Even in the context of Foucault's discussion of apparatuses, there is yet again evidence of his blind spot surrounding ignorance. His example of an apparatus serving the strategic need of controlling and assimilating mentally ill people requires the categorization and scientific study of mental illness, which is of course part in the production of knowledge. However, apparatuses also serve to create ignorance. They might do so on purpose, such as security apparatuses working towards keeping information hidden from the general population. They might also do so on accident, such as apparatuses of knowledge abandoning ways of knowing which do not serve the strategic aim of the apparatus.

One might argue that Foucault has already considered ignorance in his writings on knowledge. However, this is only true in the most basic sense: The concept of an *episteme* shows that ignorance and knowledge are two sides of a coin. Even there, Foucault does not pay sufficient attention to the role of ignorance. Foucault's discussion of the relationship between power and knowledge likewise exhibits the same blind spot; a particularly glaring omission since the productive aspects and the dispersed nature of ignorance fit right into a Foucauldian analysis. In a way, what I aim to present here is what Foucault might have come up with himself, had he lived to see the contemporary works of agnotologists. Power/ignorance will be the key part of this endeavor. In the next sections, I will be looking at the different kinds of ignorance under the Foucauldian framework I have established here, beginning with ignorance as a strategic ploy.

### 3. Strategic Ploys: Actively Constructed Ignorance

Actively constructed ignorance is ignorance purposefully created to serve strategic aims. To elucidate the concept of power/ignorance, I will discuss three agnotological case studies in turn. In the first part of this section, I will look at the agnogenesis surrounding tobacco, which was in many ways the blueprint for how to construct ignorance. I will argue that this constitutes a case of anti-biopower. In the second part, I will discuss the agnogenesis behind climate change denialism. I will argue that an analysis of power/ignorance can reveal how consumers are shaped by rituals of power. Those two cases will also help us see how the production and transmission of ignorance can be refined, and the role institutions play in this process. Finally, I will address government classification as a more conventional case of agnogenesis. I will argue that even in such a conventional case, a Foucauldian perspective on state apparatuses has lots to offer.

#### 3.1 Anti-Biopower: The Case of Tobacco

##### 3.1.1 A Blueprint for Agnogenesis

The case of the tobacco lobby manufacturing ignorance is perhaps the single best-studied example in agnotology. One of the main reasons for this is the sheer amount of suffering and death caused by the tobacco lobby: More than 8 million people die annually from smoking, including an estimated 1.3 million of second-hand smokers. Proctor goes so far as to call it a “Golden Holocaust” in his eponymous work.<sup>111</sup> What is also worth noting here is the length of time that has been spent producing ignorance about tobacco. The fact that cigarettes cause lung cancer has been shown in the 1930s by German scientists, and the evidence was demonstrably clear to the tobacco industry in the 1950s.<sup>112</sup>

This pattern can be seen again and again, with scientific findings being thrown into doubt decades after the fact through industry lobbying – whether that is for acid rain, the ozone hole, or climate change. As it turns out, a lot of the same researchers were involved in those different campaigns, and the strategies they used were broadly applicable to all of them. Producing ignorance is a skill which can be refined, making the spread of ignorance more efficient or opaque. It is therefore adequate to speak of the case of tobacco as a

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<sup>111</sup> Robert N. Proctor, *Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition*, 2012.

<sup>112</sup> Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues From Tobacco Smoke to Global Warming* (Bloomsbury Press, 2010), 14–15.

blueprint for the production of ignorance. There is thus a lot to gain by studying the development of the agnogenetic tools used by the tobacco lobby.

Since it is possible to create ignorance at every step of the way, there are often multiple phases of agnogenesis. Jon Christensen delineates four different phases in the strategy of the tobacco lobby: First, there was a phase of fighting over evidence directly, followed by the period with the largest emphasis of ignorance production, leading to a phase where the industries' attention focused more on undermining science itself during the fight over secondhand smoke.<sup>113</sup> The final phase and the status quo are the result of the settlements in US courts. Since then, the tobacco industry has successfully rebranded itself as responsible manufacturers for a product whose risks are old news.<sup>114</sup> In the contemporary phase of tobacco agnogenesis, the history of the tobacco industry is sanitized, and their role as factories for ignorance minimized. Instead, smokers are framed as having no one to blame but themselves.

The tobacco lobby relied in their production of ignorance upon a specific public understanding of how science works. In order to sell a product as harmless, companies presented themselves as open and willing to receive scientific evidence against their product. At the same time, they communicated specific standards of science, which were unreasonably high. In this framing, science is treated as a tool for our decision-making only where its results are certain. Since the sort of evidence produced by reputable scientific institutions could not satisfy the standards of tobacco companies, there was never a reason to act against the companies' interests. Raising the standards of evidence and shifting the goalposts was always a possibility to prevent any new study of establishing scientific consensus, at least in the public eye.

For instance, experimentation on mice was deemed insufficient by the tobacco lobby, because it supposedly could not yield comparable evidence for humans. At best – so the argument went – it is possible to show that cigarette smoke produces “mice tumors”, which means that more evidence is needed, and the “controversy” surrounding the health effects of tobacco has not yet been resolved.<sup>115</sup> Fabricating such a controversy rather than engaging in outright denial has the added benefit of being easy to defend in the courts. This strategy aims

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<sup>113</sup> Jon Christensen, “Smoking Out Objectivity: Journalistic Gears in the Agnogenesis Machine,” in *Agnotology: The Making and Unmaking of Ignorance*, ed. Robert N. Proctor and Londa Schiebinger (Stanford: Stanford University Press, 2008), 268.

<sup>114</sup> Christensen, “Smoking Out Objectivity,” 269.

<sup>115</sup> Proctor, “Agnotology,” 12.

at holding off any decisive answer to the controversy indefinitely. Martin Carrier pointedly calls those efforts out as “the deliberate violation of established standards of judgment in science”.<sup>116</sup>

Ironically, the production of ignorance necessitated the production of further ignorance: Every time a study on tobacco took place, the conclusion had to be that further evidence was needed. The threshold of evidence was never reached, which necessitated yet further research. In a quixotic twist, research about the effects of tobacco kept producing ignorance. This self-perpetuating cycle is also why the phase during which the lobby simply disputed evidence was rather short-lived. The self-perpetuating ignorance cycle proved more sustainable because it allowed shifting the burden of proof to those who argued that smoking was harmful.

“Doubt is our product” is a damning quote frequently mentioned in this context. It is taken from an internal memo, commonly considered to be part of an employee handbook produced in 1967. However, it is worth quoting the passage in full:

“Doubt is our product since it is the best means of competing with the "body of fact" that exists in the mind of the general public. It is also the means of establishing a controversy. [...] If we are successful in establishing a controversy at the public level, then there is an opportunity to put across the real facts about smoking and health. Doubt is also the limit of our "product." Unfortunately, we cannot take a position directly opposing the anti-cigarette forces and say that cigarettes are a contributor to good health. No information that we have supports such a claim.”<sup>117</sup>

The strategies I have presented thus far show that there can be such a thing as knowledge about creating ignorance. As a matter of fact, there are even manuals for doing so effectively. Perhaps one of the first examples of such is a handbook distributed within the tobacco lobby, commonly referred to as *Bad Science: A Resource Book*, which argues that government agencies have betrayed the trust of the public and that science has been manipulated by political activists.<sup>118</sup> It stands to reason that there are most likely even more internal documents which aim at giving a select few the knowledge on how to create ignorance.

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<sup>116</sup> Martin Carrier, “Agnotological Challenges: How to Capture the Production of Ignorance in Science,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 59.

<sup>117</sup> Stanton A. Glantz et al., *The Cigarette Papers* (Berkeley: University of California Press, 1996), 171, <https://publishing.cdlib.org/ucpressebooks/view?docId=ft8489p25j;chunk.id=d0e6242;doc.view=print>.

<sup>118</sup> Oreskes and Conway, *Merchants of Doubt*, 144.

The most obvious and perhaps least interesting aspect of power/ignorance is the fact that ignorance about the health effects of tobacco led to the growth of the wealth and influence of the industry. However, there are further dimensions to consider here: Ignorance also ensured that there was a supply of new consumers, who are then also potential spreaders of ignorance. After all, if smoking is common, it might seem less dangerous. If everybody around a person smokes, there is *prima facie* testimonial evidence that it cannot be such a dangerous thing. The transmission of ignorance takes place not simply at the level of advertisements, but at the level of individuals.

By contrast, if non-smokers know that even passively smoking is a health risk, then they are more likely to demand that others stop smoking in their vicinity or to demand smoking bans in public places. Hence, the tobacco lobby manufactured additional controversy surrounding the dangers of secondhand smoke.<sup>119</sup> Scientists working for the tobacco industry already knew of the harm caused by secondhand smoke before independent scientists did.<sup>120</sup> The fact that the tobacco lobby was able to instigate multiple controversies is a testament to the effectiveness of their strategies. With the rising debate around bystanders being harmed by smoking, the industry turned its efforts to arguing against smoking bans and for “accommodating” smokers.<sup>121</sup>

### 3.1.2 Creating Complicity

A central part of agnotogenic strategy is the funding of seemingly scientific institutions which already know which sorts of findings to produce, and which sorts of questions to ignore. The money spent by those institutions on what Proctor calls “decoy research” is enormous, with 450 million dollars spent by the Council for Tobacco Research alone.<sup>122</sup> Moreover, 26 Nobel laureates have taken money from the Council for Tobacco Research, and the research conducted on its terms led to more than 7000 papers being authored in peer-reviewed journals.<sup>123</sup> However, the intent of the institution was clear: The Council for Tobacco Research was labeled a “front” and a “successful defensive operation” in internal documents.<sup>124</sup>

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<sup>119</sup> Oreskes and Conway, *Merchants of Doubt*, 136.

<sup>120</sup> Oreskes and Conway, *Merchants of Doubt*, 137.

<sup>121</sup> Oreskes and Conway, *Merchants of Doubt*, 140.

<sup>122</sup> Galison and Proctor, “Agnotology in Action,” 30.

<sup>123</sup> Galison and Proctor, “Agnotology in Action,” 32.

<sup>124</sup> Galison and Proctor, “Agnotology in Action,” 31.

The newsletter of the Council for Tobacco Research was sent to, amongst others, hundreds of thousands of physicians.<sup>125</sup> This way, the tobacco lobby sought to influence the testimony of those experts who people are often most inclined to listen to. An additional step in the process of convincing people that reputable experts had no qualms with tobacco lies in referencing those experts on the product itself. For instance, in the beginning of the 1950s, the tobacco industry put emphasis on cigarette filters as being “just what the doctor ordered”.<sup>126</sup> Another instrument of the tobacco lobby was the popular scientific journal *Science Fortnightly* published by the Lorillard Tobacco company in the mid-1960s, which – in a cruel twist of historical irony – advertised a new generation of cigarette filters made of asbestos.<sup>127</sup>

What about public intellectuals and other figures engaged with communicating with the public? On a first glance, journalists seem to be the kind of public figure uniquely equipped for unmaking ignorance. Nevertheless, journalists ultimately tend to be complicit in its production. As Jon Christensen argues, it would be a mistake to think that the successes of the agnogenesis campaigns are the result of journalists showing insufficient fairness, balance or objectivity – instead, hired experts would always win in a fair fight precisely because journalists usually adhere to those values.<sup>128</sup> Ironically, those values were introduced to distinguish the profession of journalism from the then-developing area of public relations in the early twentieth century, as well as to prevent the partisanship present in American journalism during the early nineteenth century.<sup>129</sup>

Of course, it was precisely those public relations companies which took advantage of journalism: An executive of Hill and Knowlton – a public relations firm working for the tobacco industry – stated that their work for the industry was an iceberg, with most of it unseen to the public.<sup>130</sup> The idea that journalism required a balance between two sides caused investigations into the potential risks of smoking to be followed up by a contrary presentation by tobacco industry lobbyists. By giving a voice to those spreading ignorance – even with the goal of honest debate – journalists amplify this voice. Philip Morris even developed a “Media Fairness Program”, which enabled the company to react quickly to reports and to

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<sup>125</sup> Proctor, “Agnotology,” 14–15.

<sup>126</sup> Proctor, “Agnotology,” 11.

<sup>127</sup> Proctor, “Agnotology,” 15.

<sup>128</sup> Christensen, “Smoking Out Objectivity,” 279–80.

<sup>129</sup> Christensen, “Smoking Out Objectivity,” 270–71.

<sup>130</sup> Christensen, “Smoking Out Objectivity,” 274.

present their own side in the fast news cycle of the 1990s.<sup>131</sup> The same false balance can be seen in plenty other examples, particularly climate science.

It was not until the 1990s that the tobacco industry began losing in courts, and tobacco was only regulated as an addictive drug in the United States in 2009.<sup>132</sup> We might assume at this point that after those massive lawsuits, the tobacco lobby has lost in their efforts to create ignorance. Instead, the agnogenetic apparatus in play proved to be even more resilient. Christensen goes so far as to claim that the tobacco lobby has won the war even after losing every battle; the industry is now trying to stay out of the limelight and prefers to point out that the carcinogenic properties of tobacco are not newsworthy anymore.<sup>133</sup> As mentioned earlier, this went hand-in-hand with a shifting of blame on smokers. For Tobacco companies, the big settlements in court worked literally as a blank cheque for a perpetual state of relative independence. Christensen identifies this as the final strategy of agnogenesis: Cigarettes are now something we have become habituated to, and the fact that the countless people suffer from the harms of smoking are something which we are desensitized to.<sup>134</sup>

This strategy can also be observed in many other cases where corporations have been successful in creating a product we encounter on a daily basis. This includes drugs like alcohol, but also other kinds of products. For instance, traffic accidents are something which we have become accustomed to, after yielding massive amounts of space to transportation by car. Taking a different example, in the United States, shootings become a fact of daily life, and the gun lobby avoids accountability by emphasizing personal responsibility. There is a tendency to ignore the harms of products because they are sufficiently engrained in daily life, and we are habituated to them. In other words, as a matter of course, we do not act as if we are even aware of those harms – which might also qualify this as a kind of selectively chosen ignorance.

### 3.1.3 Weaponizing Research

Returning to the tools used to create ignorance, we can see yet another interesting move by tobacco lobbyists: They pleaded for data transparency about research, albeit in a way that served their interests. Philip Morris successfully pushed for two data transparency

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<sup>131</sup> Christensen, “Smoking Out Objectivity,” 267.

<sup>132</sup> Oreskes and Conway, *Merchants of Doubt*, 33.

<sup>133</sup> Christensen, “Smoking Out Objectivity,” 278–79.

<sup>134</sup> Christensen, “Smoking Out Objectivity,” 278.

laws, which ensured that the data of all governmentally funded, non-classified research could be publicly inspected.<sup>135</sup> This allowed the research institutes funded by the tobacco lobby a head start in trying to attack the data used to show the harms of smoking. It also led to an asymmetry since their own research was not subject to those transparency laws.

It is perhaps not immediately clear why the industry did not simply tamper with the evidence directly. For instance, they could have decided to bribe scientists in exchange for manipulating the results of studies. However, there are many reasons why this did not happen. First, even if the tobacco industry had found scientists who were willing to do that, such results would not have been able to be replicated by independent research institutions. More importantly, doing so would have been less efficient than sowing doubt. Likewise, as I have already mentioned, the industry quickly moved beyond the phase where results were directly attacked. Finally, bribery and direct manipulation are not necessary, as we can see in the so-called “funding effect” This shows yet again the deep connection between power and ignorance:

The funding effect, itself extensively studied in the biomedical literature, refers to the fact that company-funded studies tend to show successes for their own drugs.<sup>136</sup> A brief list of the techniques used include: Conducting a trial of the drug against a treatment which is already known to be inferior; focusing on results which are more impressive, such as a reduction in relative rather than absolute risk; conducting trials against the drugs of competitors at a dosage which is either too low or too high – which can result in rival drugs underperforming or having too many health risks.<sup>137</sup> In other words, companies do not need to directly influence the result of studies to get the results they want.

Again, the strategy of industry lobbyists has been to present unrealistically high standards of scientific evidence. Once sufficiently large parts of the public share such an understanding of science as dealing in proofs rather than probabilities and correlations, it is easy to suppress the warnings of actual scientists as rash and unjustified. The term used here by lobbyists is “junk science”, as contrasted by what they see as “sound science”.<sup>138</sup> Moreover, it is easy to dismiss studies and meta-studies on the mere suggestion that their authors are peddling junk science.

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<sup>135</sup> Galison and Proctor, “Agnotology in Action,” 50.

<sup>136</sup> David Michaels, “Manufactured Uncertainty: Contested Science and the Protection of the Public’s Health and Environment,” in *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2008), 98.

<sup>137</sup> Michaels, “Manufactured Uncertainty,” 99.

<sup>138</sup> Oreskes and Conway, *Merchants of Doubt*, 143.

Another particularly insidious strategy pioneered by the tobacco industry is the creation of institutions which are made to appear as grassroots movements. For instance, the British Tobacco Organisation defended the rights of smokers on the basis that taking their right to smoke away would be just the first step in totalitarian politics.<sup>139</sup> Making industry-funded institutions seem like grassroots organizations allows for a double-pronged approach: Those who were not convinced by the hired experts might be more likely to follow groups of non-scientist activists, and vice versa.

Interestingly, the natural sciences and medicine were not the only fields where hired experts were used. Shaping beliefs about history was also useful to the tobacco industry. For example, Philip Morris' "Project Cosmic" was an effort to create a network of scientists and historians, paying large sums to write on the history of tobacco use.<sup>140</sup> The aim behind producing myths about the past was to improve the standing of tobacco in the present. If tobacco is seen a product with a long, respectable history, people might be more inclined to believe that the industry is acting in good faith.

The list of industries which have drawn on those strategies is much larger than I could do them justice here. When it comes to cancer risks, the food industry has learned a lot from the act of creating institutions for agnogenesis. Besides the risk of cancer, it is also worth mentioning other health risks caused by the food industry, supported by the agnogenesis of trade associations like the Polystyrene Packaging Council, the Fertilizer Institute, the Chemical Manufacturers Association, the National Dairy Council, and the American Meat Institute.<sup>141</sup>

When it comes to products with adverse health effects, creating ignorance also serves as a stalling tactic which buys the company enough time to react to a possible ban. This strategy was successfully replicated in industries involving potentially harmful chemicals or products. Studies showing the health risks of substances such as beryllium, lead, mercury, nickel as well as countless pharmaceuticals were fought by companies through intermediaries specializing on defending against scientific studies, often consisting of hired experts such as epidemiologists or toxicologists.<sup>142</sup> Often, this stalling tactic is just enough to prepare for a reformulated product. For instance, by the time the drug Phenylpropanolamine – which increases the risk for hemorrhagic stroke – was forced off the

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<sup>139</sup> Oreskes and Conway, *Merchants of Doubt*, 162–64.

<sup>140</sup> Proctor, "Agnotology," 16.

<sup>141</sup> Kourany and Carrier, "Introducing the Issues," 7.

<sup>142</sup> Michaels, "Manufactured Uncertainty," 92–93.

market, the pharmaceutical company was already prepared to ship the reformulated product.<sup>143</sup>

Oreskes and Conway attribute the success of sowing doubt to two factors: Mistaken folk beliefs about causality and a lack of understanding concerning what healthy skepticism means for science. Regarding the first factor, not everybody who smokes dies because of smoking, but the likelihood is highly increased – to the point where about half of smokers are killed because of smoking.<sup>144</sup> Regarding the second factor, a certain amount of skepticism is necessary for scientific endeavors, but there is such a thing as unhealthy skepticism too. As Galison and Proctor point out, arguing against the controversy is easily seen as opposing further research, which makes opponents of such lobbies seem close-minded and anti-scientific.<sup>145</sup> By contrast, the lobbyists are framed as merely asking questions in a Socratic manner; there is no shortage of further questions raised by research into the properties of tobacco, which then requires further research still. As Torsten Wilholt argues, the Socratic approach can also be misused to replace knowledge.<sup>146</sup> Referring to industry doubt-mongers as skeptics would be misleading. Pyrrhonian skeptics were liberated from their strong beliefs as a result of equally strong arguments, while hired experts still hold strong beliefs – their ignorance is strategic.<sup>147</sup>

We can also consider those hired experts to be engaged in a form of pseudo-*parrhesia*. They act as if they are speaking truth to power, whether that is the state or some nebulous lobby of environmentalists. They also frequently emphasize the risk they face, such as institutional pressure on their career. This mode of speaking is parasitic on actual *parrhesia*, and contrary to its real counterpart, pseudo-*parrhesiastes* almost never face consequences for their speech, as evidenced by the number of hired doubt-mongers working on different agnogenetic projects for different industries.

The way research has been weaponized is startling. We need to be aware of the contingency of many of the scientific institutions we are accustomed to. Stuart Firestein argues that science is not “too big to fail”, rather, it is fragile and needs to be handled with

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<sup>143</sup> Michaels, “Manufactured Uncertainty,” 97.

<sup>144</sup> Oreskes and Conway, *Merchants of Doubt*, 34.

<sup>145</sup> Galison and Proctor, “Agnotology in Action,” 32–33.

<sup>146</sup> Thorsten Wilholt, “On Knowing What One Does Not Know: Ignorance and the Aims of Research,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 203.

<sup>147</sup> Girel, “The Pragmatics of Ignorance,” 67.

care.<sup>148</sup> Firestein is very pessimistic about efforts to promote science through efforts like popularization, because it involves a teaching of science as a collection of facts rather than questions. Instead, he argues for a larger focus on the role ignorance plays in scientific discovery, and a greater understanding of science as open to revision.<sup>149</sup> We do not need to share this pessimism, but we do need to be aware of the contingency of science, something which Foucault has focused on extensively. The social institution of science has been around for a few hundred years, most of them not in the same highly professionalized and formalized way that we know it nowadays.

#### 3.1.4 Anti-Biopower

Why would the tobacco lobby spend so much money to keep a product in use which ultimately kills those who consume it? Under a more conventional understanding of power where power is understood as simple oppression, this is difficult to explain. However, to put it in the words of Dreyfus and Rabinow, “domination is not the essence of power”.<sup>150</sup> Using a Foucauldian perspective, we can analyze the relationship between consumers and producers in terms of the micro-physics of power. We cannot reduce the mechanisms and development of power/ignorance to simple large-scale industry propaganda. Instead, we need to look at the constant spread of power/ignorance through exposure to other smokers, and to people who believed that there was indeed a scientific controversy.

On a basic level, we can understand the physicians to whom the industry-financed newsletters were sent to as using a position of authority to transmit ignorance rather than knowledge. However, this testimony of doctors to their patients is not a conventional process of bio-power being exercised. What we can instead observe at play is a phenomenon we can term “anti-biopower”: A form of power that is directed at the bodies of consumers by apparatuses of companies rather than states. Contrary to traditional biopower, the aim here is not to create healthy bodies for capable soldiers. Neither is the aim the production of healthy workers to increase the economic production of states. Instead, the aim is to create bodies which are dependent on the product being sold.

We can also see the working of power on the body taking place here: First and most obviously, substances like nicotine and other chemicals in tobacco products cause addiction.

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<sup>148</sup> Stuart Firestein, “Sharing the Resources of Ignorance,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 114.

<sup>149</sup> Firestein, “Sharing the Resources of Ignorance,” 115–16.

<sup>150</sup> Dreyfus and Rabinow, *Michel Foucault*, 186.

The highly addictive properties of nicotine were also a victim of industry agnogenesis. Second, escaping the smoking habits of others is exceedingly difficult in societies where smoking is commonly accepted. In other words, the body is not simply influenced by purely chemical processes, but also conditioned through social dynamics. When the tobacco industry tried to influence physicians themselves, they targeted the most likely avenues for helping people to quit. Third, we can draw on the lessons developed in Foucault's discussion of disciplinary apparatuses. The space in which people spend their time conditions them: Where smoking is permitted in buildings, the body is further conditioned to continue smoking and exposing others to secondhand smoke.

As I have already argued, the web of power/ignorance grows at the level of individuals. The actual points where power/ignorance is exerted lie not so much at the level of institutions with a heavy media presence. Instead, ignorance is spread and produced by individuals. Agnotologists need to take this into account to fully grasp the dynamics behind people starting to smoke: Laypeople are made ignorant by many different avenues and serve as further transmitters of ignorance. The availability of cigarettes and the way society further enables addiction is an important piece of the agnotological puzzle.

With the spread of ignorance about the consequences of smoking, the tobacco industry ensured their profits; with their profits they continued the spread of ignorance. This enabled a self-sustaining loop of agnogenesis, which is again best understood in terms of power/ignorance: Consumers of tobacco products are not simply found, they are created. Smokers are a social category which is an effect of the power of the tobacco lobby. As a necessity, the tobacco lobby had to hide the harmfulness of their products to hook people on them. In other words, the production of consumers is possible through the creation of ignorance. With the addictive potential of cigarettes and the social dynamics of smoking, there is what we might call a special form of a docile body. Rather than the docile bodies described by Foucault which are the product of knowledge, here we are dealing with bodies made docile by addiction and ignorance.

In the traditional, repressive understanding of power, governments are the prime example of where power resides. Foucault pointed out how we must go beyond the state to understand power relations, and that the government itself is just a small part of the state.<sup>151</sup> Nevertheless, Foucault's chosen examples are still usually government actors, such as clerks or bureaucrats. The fact that a few marketing and public relations experts in a private

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<sup>151</sup> Mills, *Michel Foucault*, 49.

company can exercise such a massive influence is something Foucault did not really anticipate. I would argue that this is the result of his historical focuses.

When we consider biopower, the classical examples are all state-based: Producing a healthy body politic, state-sponsored eugenics programs or restrictions on reproduction. However, the last few decades really show the influence that private actors have and the amount of anti-biopower that they wield. This is clear in the case of smoking, but we should also keep related cases in mind: The detrimental health effects of chemicals such as pesticides, as well as certain products in the food industry. Sometimes, as in the case of tobacco, the bodies of consumers are purposefully damaged through the addiction to nicotine and other components of cigarettes. Other times, companies are at least negligently putting the health of their consumers at risk.

Foucault references a well-known quote of the Prussian military theorist Clausewitz and turns it on its head: Instead of considering war as politics by other means, Foucault considers politics the continuation of war by other means.<sup>152</sup> We can see states and companies in such a struggle for the bodies of their subjects and consumers. This is a direction of inquiry only open to us once we realize how apt Foucault's work on power/knowledge is: By taking his analysis and deepening it, we can see how both states and companies recognize the body as a point of intervention. Of course, states in Western societies as mostly not in need of large quantities of capable soldiers, as they were in the eighteenth century. Instead, they are forced to deal with a different problem: An aging population and large healthcare budgets. Companies which promote harmful products directly interfere with this, exacerbating existing problems and increasing the pressure on healthcare systems.

We can see this conflict in the way politicians propose bans on smoking, and how industries in turn try to engage in regulatory capture or bribery to prevent legal efforts against them. However, methods can be more subtle, as evidenced by the use of methods like nudging. Briefly summarized, nudging refers to changes in the presentation of choices in order to change how people will decide; one of the classic examples of this is putting apples at eye level in cafeterias, therefore ensuring that customers decide for the healthy option more often.<sup>153</sup> A more contemporary example are pictures of the bodily harms of smoking

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<sup>152</sup> Foucault, *Power/Knowledge*, 123.

<sup>153</sup> Dworkin Gerald, "Paternalism," ed. Edward N. Zalta and Uri Nodelman, Fall 2020 (Stanford: Metaphysics Research Lab, Stanford University, 2020), <https://plato.stanford.edu/archives/fall2020/entries/paternalism/>.

on cigarette packages which are mandated in some countries. While nudging is employed to increase healthy choices of consumers, it is also a tool which can be used by industries against the health of their customers. For instance, drawing explicit attention to cigarette filters arguably constitutes a nudge towards smoking. The idea here was to make customers feel more conscious of their health by choosing cigarettes with filters, even though filters barely have positive health effects – and in the case of asbestos filters, sometimes even negative effects.

Ignorance, once created, has a habit of sticking around. To this day, polls show that there is still doubt about the harmfulness of cigarettes, and even those who know about the carcinogenic properties of tobacco might not know about the twenty-five diseases caused by smoking, like emphysema, blindness, and heart disease.<sup>154</sup> In a way, the strong focus on lung cancer has led to ignorance about all the other negative consequences of smoking. As we have seen with the funding effect, favorable results do not require committing fraud or direct manipulation. The widespread ignorance of the other diseases caused by smoking is yet another victory of the tobacco lobby and a testament to their skills at manipulating public discourse.

All the strategies mentioned thus far are also constantly being refined in other instances of company-produced ignorance. We can observe this in the case of climate change denialism, the topic of the next section. This is another case where a power/ignorance framework can improve our understanding of the issues involved. While the importance of institutions in the initial spreading of ignorance remains highly relevant, power/ignorance will also be illustrative of the relation between capitalism and the unwillingness to act against climate change.

### 3.2 Docile Consumers: Climate Change Denialism

#### 3.2.1 Refining the Tools of Agnogenesis

The scientific consensus on the reality of climate change has been established since the early 1990s, with the Intergovernmental Panel on Climate Change (IPCC) stating that most of the warming of the last decades can be attributed to human activities, supported both by models and theories, as well as the corresponding physical measurements.<sup>155</sup> However,

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<sup>154</sup> Oreskes and Conway, *Merchants of Doubt*, 33.

<sup>155</sup> Naomi Oreskes and Erik M. Conway, “Challenging Knowledge: How Climate Science Became a Victim of the Cold War,” in *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2008), 55–57.

the consensus formed by the IPCC in the 1990s was already based on a review of studies undertaken in the 1970s, and the hypothesis of anthropogenic climate change has been around since the 1930s.<sup>156</sup>

It is important to keep in mind that climate change was not the first ecological catastrophe over which agnogenesis took place. By the mid-1970s, there was ample evidence of acid rain causing ecological damage in plants and wildlife. The causes of acid rain were soon discovered: As a consequence of burning fossil fuels, sulfur and nitrogen are released into the atmosphere.<sup>157</sup> Additionally, certain measures for smog prevention – such as tall smokestacks – lead to the pollution being dispersed over large distances.<sup>158</sup> Under the Reagan administration a policy of doubt was pursued: The officially appointed Acid Rain Peer Review Panel issued a strong warning about acid rain and reached a clear conclusion about its causes, but their final report was manipulated with the help of Fred Singer, a physicist who was put on the panel via recommendation of the White House.<sup>159</sup> Even after the consensus on the cause of acid rain had been established, there were claims by the head of the United States Environmental Protection Agency about the uncertainty of its causes or the unfavorable cost-benefit calculation in order to fix it.<sup>160</sup> This led to a delay in regulation which caused preventable ecological damage.

This pattern repeats again and again: In the 1970s, it became clear that the ozone hole was depleting. The cause of this was chlorofluorocarbons, which were found in spray-cans, refrigerators and air-conditioners.<sup>161</sup> The industry fought this discovery every step of the way.<sup>162</sup> The physicist Fred Singer was again involved in this effort, and he later turned to agnogenesis over secondhand smoke.<sup>163</sup> However, because chlorofluorocarbons were not used in a lot of different applications, it was comparatively easy to ban the chemicals involved. The fight against the agnogenesis about ozone hole depletion was easy to win, because the causes were localized. By contrast, the greenhouse gases causing climate change are involved in basically all forms of production and many services.

Turning to the topic of climate change denialism, we find many that many of the scientists involved were also first engaged in prior efforts to produce ignorance about

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<sup>156</sup> Oreskes and Conway, “Challenging Knowledge,” 58.

<sup>157</sup> Oreskes and Conway, *Merchants of Doubt*, 72.

<sup>158</sup> Oreskes and Conway, *Merchants of Doubt*, 67–69.

<sup>159</sup> Oreskes and Conway, *Merchants of Doubt*, 96–99.

<sup>160</sup> Oreskes and Conway, *Merchants of Doubt*, 101.

<sup>161</sup> Oreskes and Conway, *Merchants of Doubt*, 112.

<sup>162</sup> Oreskes and Conway, *Merchants of Doubt*, 115.

<sup>163</sup> Oreskes and Conway, *Merchants of Doubt*, 135.

ecological risks. Meanwhile, their strategies of agnogenesis have continually improved. The first institution to engage in climate change denialism on a grand scale was the George C. Marshall Institute in the 1990s. This institute argued that there is no reason to reduce greenhouse gas emissions, because the evidence for anthropogenic climate change is inadequate; a position which individuals linked to the institute have defended countless times in the media.<sup>164</sup>

The George C. Marshall Institute was founded by Robert Jastrow, a former NASA astrophysicist who was previously involved with Ronald Reagan's Strategic Defense Initiative, which was an attempt to develop a laser-based missile shield against intercontinental ballistic missiles.<sup>165</sup> The first chairman of the board of the institute was the former president of the National Academy of Sciences Frederick Seitz, who had also served as a chief advisor to the R. J. Reynolds tobacco company.<sup>166</sup> He too lent his support to the Strategic Defense Initiative, even though most other scientists saw it as scientifically impossible at best and at worst as a risk for nuclear war between the United States and the Soviet Union.<sup>167</sup>

The George C. Marshall Institute was eventually closed and succeeded by a think tank called CO<sub>2</sub> Coalition. The institute has been a pioneer in agnogenesis, but it was not alone in its efforts. Since the 1980s, there have been several conservative think tanks like the Cato Institute or the Heritage Foundation, which were also at the forefront of pushing ignorance about other environmental issues.<sup>168</sup> Oreskes and Conway aptly describe such institutions as "scientific Potemkin villages".<sup>169</sup> The sheer number of organizations and the amount of involved is hard to grasp. Oreskes and Conway list dozens of such organizations in the context of tobacco alone; but many of those were also involved in the denial of global warming or the ozone hole.<sup>170</sup>

Furthermore, Oreskes and Conway also draw attention to the fact that the public role of experts is indeed a new development, relative to the history of science. The institutional vetting processes, such as peer review, can be completely sidestepped by directly addressing the public.<sup>171</sup> As pointed out before, journalists are often complicit in the production of

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<sup>164</sup> Oreskes and Conway, "Challenging Knowledge," 60–61.

<sup>165</sup> Oreskes and Conway, "Challenging Knowledge," 61–62.

<sup>166</sup> Oreskes and Conway, "Challenging Knowledge," 66–67.

<sup>167</sup> Oreskes and Conway, *Merchants of Doubt*, 36–37.

<sup>168</sup> Oreskes and Conway, *Merchants of Doubt*, 125.

<sup>169</sup> Oreskes and Conway, *Merchants of Doubt*, 245.

<sup>170</sup> Oreskes and Conway, *Merchants of Doubt*, 235.

<sup>171</sup> Oreskes and Conway, *Merchants of Doubt*, 269–70.

ignorance. Either out of a mistaken commitment to fairness or out of the hope that controversy improves ratings, news media are keen to present opposing sides as having equal weight by giving both sides the same amount of screentime.<sup>172</sup> This means that no matter how broad the consensus among scientists is, it is almost never perceived as such in the court of public opinion.

Of course, in our age of social media, the traditional journalistic pathways to communicating about science and potentially transmitting ignorance are even less important. Instead, there are countless ways in which the dissemination of knowledge can go astray, and in which the spread of ignorance is easier than ever before. Consequently, issues such as echo chambers, algorithms and filter bubbles are frequently discussed in political epistemology. Philip Kitcher attributes the easy spread of ignorance on the internet to the false belief that the internet is a “Millian arena” where everybody’s voice is heard equally.<sup>173</sup> This mistaken belief also makes social media platforms easy prey for state-sponsored disinformation like troll farms. However, any detailed discussion on the ways in which ignorance spreads over social media is beyond the scope of this thesis.

Agnotological ploys sometimes culminate in outright attacks on science itself. For instance, in the debate surrounding the aforementioned Strategic Defense Initiative, the risks of global nuclear war were severely downplayed. A major argument against the supporters of the Strategic Defense Initiative was the possibility of a nuclear winter. Frederick Seitz argued that the models underlying nuclear winter predictions were unreliable and that the actual effects of global nuclear war on the climate would be negligible.<sup>174</sup> In other words, he argued for an understanding of the nuclear arms race where a potential nuclear war was winnable for the United States without significant problems to the future of human civilization. We can consider this perhaps the boldest move in agnogenesis: Creating ignorance at the risk of global nuclear war. While the likelihood of catastrophic environmental change as a result of nuclear strikes is in fact controversial, Seitz went so far as to attack the entire scientific establishment as being politically motivated by regret over the Manhattan Project; arguing that citizens should not view the scientific profession as credible.<sup>175</sup>

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<sup>172</sup> Galison and Proctor, “Agnotology in Action,” 37.

<sup>173</sup> Philip Kitcher, “Can We Sustain Democracy and the Planet Too?,” in *Science and the Production of Ignorance*, ed. Janet A. Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 111–12.

<sup>174</sup> Oreskes and Conway, *Merchants of Doubt*, 61.

<sup>175</sup> Oreskes and Conway, *Merchants of Doubt*, 61–62.

The obvious reply to those criticisms is to point to the fact that they come from scientists themselves. However, we should not underestimate the rhetorical strength of a once renowned scientist publicly denouncing his colleagues. After all, laypeople often have no inside view into science, so the words of an authority they are already familiar with might weigh more than reports of a consensus amongst anonymous climate scientists. Worse, there is no direct causal path between knowing the science and making the correct decisions. Oreskes and Conway warn that the efforts of agnogenesis over the reality of climate change are extremely successful in causing inaction; after all, it is perfectly possible to accept the reality of climate change and do nothing about it.<sup>176</sup> Indeed, this is where the strategy of the newer generation of agnogenesis has shifted. As with tobacco, there are always multiple fallback positions: First, skepticism that climate change is happening in the first place; next, skepticism that it is caused by anthropogenic factors; finally, arguing that it is too late to do something or that climate change might even be beneficial.

Oreskes and Conway argue that the common denominator in all those hired scientists is their cold war mindset. Measures to protect the environment – and by extension, the health and safety of humans living in it – are treated as an attack on capitalism by a group of communists.<sup>177</sup> By extension, environmental science is seen as a secret ploy against capitalism.<sup>178</sup> Oreskes and Conway diagnose this as a case of market fundamentalism. The possibility of market failure was something that those lobbyists could not acknowledge, so if environmental scientists proposed regulations in order to prevent the damage caused by free markets, it was time to turn against science.<sup>179</sup> This is because negative externalities in the form of ecological destruction are simply not conceivable to those defending an ideal conception of free market capitalism.<sup>180</sup> Of course, market failures in general and negative externalities in particular are well-studied phenomena in economics, and it is not surprising that the lobbyists in question are by extension also creating ignorance about economics and other social sciences. Climate change is just the most drastic example of this.

### 3.2.2 Creating Docile Consumers

However, from a Foucauldian perspective, investigating the possible motives of a handful of influential physicists is not a satisfactory analysis. Simply learning about their

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<sup>176</sup> Oreskes and Conway, “Challenging Knowledge,” 79.

<sup>177</sup> Oreskes and Conway, “Challenging Knowledge,” 77.

<sup>178</sup> Oreskes and Conway, *Merchants of Doubt*, 134.

<sup>179</sup> Oreskes and Conway, *Merchants of Doubt*, 65.

<sup>180</sup> Oreskes and Conway, *Merchants of Doubt*, 237–38.

biases for an idealized free market capitalism is too personal of an answer to account for inaction in the face of climate change. One of the key themes in Foucault's work is the idea that while organizations might profess to have certain intentions, they are constrained in what they can do; complex systems might be the product of conflicting and contradictory smaller parts.<sup>181</sup> We should also be careful with treating historical events in terms of simple cause-event-stories and focus on contingencies which reveal power relations.<sup>182</sup> While it is easy to draw a path from a select few individuals to the agnogenesis of today, this does not imply that without those individuals we would not face actively constructed ignorance. In fairness to Oreskes and Conway, they do not explicitly claim so; but it is nevertheless a conclusion one might reach from the narrative structure of the history of doubt presented in their work.

It is important to distinguish the method of agnotologists like Proctor with the analysis of power that Foucault provides. While Proctor, Oreskes and other agnotologists spend a lot of effort trying to establish the intent of lobbyists and industry executives, Foucault does not claim that every detail of the rituals of powers was planned by individuals with a clear grasp on the workings of power. The diffuse nature of power also entails the fact that its effects can be difficult to predict. While meticulous rituals of power have been continually improved over long periods, this does not imply that ignorance-mongers are in control of them. The same goes for power/ignorance: It would be exceedingly implausible to claim that industry executives had a firm grasp on every single way in which their actions led to the spread of ignorance. Certain consequences of their agnogenesis might have been completely unintended: For instance, if one already trusts the tobacco lobby concerning their supposed genuine attempts at learning the truth about smoking and cancer, then one is probably predisposed to believe that the food industry also tries to investigate possible links to cancer in good faith. If one sees that the ozone hole is no longer treated as an environmental threat, it is easy to claim that it was never a threat in the first place, and that climate change will also turn out to be of little consequence. It becomes easy to view scientists who warned us about the ozone hole and acid rain as alarmists, and to argue that climate change is just the latest form of alarmism.

It is important to understand that establishing scientific-seeming institutions was not simply about credibility. It also allowed industries to anchor itself to the authority of science.

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<sup>181</sup> Mills, *Michel Foucault*, 50.

<sup>182</sup> Mills, *Michel Foucault*, 51.

The real insidiousness of campaigning with perceived scientific authority is the fact that even if the public starts to disbelieve those authorities, the epistemic fallout is likely to impact ordinary scientists as well. After all, given how easy it was to create an artificial controversy, how can a layperson trust that other scientists are not bought? Thus, disbelieving industry-bought scientists can easily lead to disenchantment with science itself.

Furthermore, it is necessary to keep in mind how opportunistic the creators of ignorance are. As Proctor points out, the theoretical commitments professed to by scientists on a lobbies' payroll constantly shifts to what is convenient, from Popperian views to constructivist positions.<sup>183</sup> There is nothing to be gained from strong methodological commitments. In a way, those are efforts to imitate the speech situation of *parrhesia*: Industry-sponsored figureheads were able to act as if they were speaking truth to power on behalf of the public, risking their own social standing to prevent governmental overreach on the basis of environmentalism. Acknowledging this requires a change in our thinking about the communication of science to the public. Christensen argues that being aware of the risk of compromised journalism might prevent a complicity with industry lobbies.<sup>184</sup>

As Foucault argues, systems of power can arise without a central planner. In some cases, there might even be a coherent, rational strategy, but without any clear culprit responsible for its conception.<sup>185</sup> Foucault compares power to a machine in which everyone is caught, and which is owned by no one.<sup>186</sup> This calls back his study of the panopticon, in which the prison guards are themselves controlled. Far from being the ones who own the system, they are also part of it, caught in a specific relation to the prisoners. I will argue that this is the case here: It would be too quick to blame only the fossil fuel lobby. Instead, the benefits of ignoring climate change can be attributed to a specific form of “neoliberal governmentality”. Foucault has three things in mind when talking about governmentality:

First, [...] the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument. Second, [...] the tendency, [...] towards the pre-eminence over all other types of power – sovereignty, discipline, and so on – of the type of power that we can call “government” and which has led to the development of a series of specific governmental apparatuses [...]. Finally, [...]

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<sup>183</sup> Proctor, “Agnotology,” 17.

<sup>184</sup> Christensen, “Smoking Out Objectivity,” 267.

<sup>185</sup> Foucault, *Power/Knowledge*, 203.

<sup>186</sup> Foucault, *Power/Knowledge*, 156.

the process [...] by which the state of justice of the Middle Ages became the administrative state in the fifteenth and sixteenth centuries [...].<sup>187</sup>

Governmentality is a portmanteau of the words “government” and “rationality” and refers to the way governing employs certain technologies of rationality.<sup>188</sup> This was a topic Foucault studied extensively in his late period. By “neoliberal governmentality”, he refers to more specifically to the way governing is structured through neoliberal capitalism: Governing is tasked with the continuation of the capitalist system on the side of the state; simultaneously it also produces subjects which are motivated by self-interest, and which want to compete in free markets.<sup>189</sup> In other words, this is a rather new way of exercising power which has population as its target; power/knowledge which is bound to a specific view on economics.

Because the production of knowledge was so often seen as something under the purview of state institutions, private companies were usually not considered as having a stake in public knowledge or ignorance. As a result, they have had a head start when it comes to producing ignorance. The growing capabilities of private companies to exercise massive productive efforts in this regard is hardly comparable to the comparatively blunt instrument of government propaganda in the twentieth century. As we saw earlier in the case of tobacco, the ignorance produced by companies frequently turns against state institutions. For instance, one of the prime targets of lobbyists like Frederick Seitz was the Environmental Protection Agency, which he accused of peddling junk science.<sup>190</sup> The rhetoric of climate change denialism also frequently targets government officials themselves. We see a similar conflict as before: States do not want to suffer the consequences of climate change, yet they depend on the growth of industries which in turn depend on consumption. States and companies are in a struggle for their citizens/consumers. However, they also share interests concerning the production and consumption of goods which cause further emissions.

Of course, agnotology regarding climate change also involves governments and states. Darren Thiel and Nigel South describe this in terms of criminal ignorance, a set of behaviors frequently studied by criminologists, which allow for legal or moral

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<sup>187</sup> Michel Foucault, *Security, Territory, Population: Lectures at the College de France 1977-78*, ed. Michel Sellenart, trans. Graham Burchell (London: Palgrave Macmillan, 2007), 144.

<sup>188</sup> Gutting and Oksala, “Michel Foucault.”

<sup>189</sup> Gutting and Oksala, “Michel Foucault.”

<sup>190</sup> Oreskes and Conway, *Merchants of Doubt*, 143.

transgressions.<sup>191</sup> Thiel and South see a desire to do business as usual and a declaration of the ambition to combat climate change without having to change any of the causes as enabling environmental destruction and human suffering.<sup>192</sup> Moreover, they liken this to the bystander effect known from criminology, where every government hesitates out of the hope that others act and impose costs on themselves.<sup>193</sup> States are thus involved in spreading ignorance even if they accept the reality of climate change on a theoretical basis.

Since the time of Foucault, the university as a place for the production and dissemination of power/knowledge is now increasingly faced with what we might call counter-institutions, such as think tanks and similar organizations. Of course, as Foucault himself has pointed out, it would be a mistake to assume that hierarchical structures in universities are the extent of power relations linked to knowledge-production. Likewise, the mere fact that those counter-institutions are funded by industry executives does is only the most obvious power relation at play in power/ignorance. It is still worth pointing out the power/ignorance feedback loop in this case: Since most goods and services cause greenhouse gas emissions, this means that ignorance about climate change is correlated with higher consumption, and higher consumption in turn fuels ignorance about the consequences of greenhouse gas emissions.

Drawing on Foucault, we might offer a more pessimistic reading on the intentionality of climate change agnogenesis. As Foucault pointedly remarks, “capitalism’s *raison d’être* is not to starve the workers but it cannot develop without starving them”.<sup>194</sup> Of course, capitalism was not created to cause harm to workers, but the development of capitalism was intrinsically tied to all kinds of harms to workers. One might rephrase this for our context: While free markets do not intend to lead to self-destructive negative externalities, those negative externalities were necessary for the development of the global capitalist system. This system thrives off the ignorance about its market failures, because the massive amounts of growth since the industrial revolution were only possible by using fossil fuel.

To return to anti-biopower, there are also health issues created or exacerbated by climate change, such as bodily strain through rising temperatures, increased risk for

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<sup>191</sup> Darren Thiel and Nigel South, “Criminal Ignorance, Environmental Harms and Processes of Denial,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoe (London: Routledge, 2022), 334.

<sup>192</sup> Thiel and South, “Criminal Ignorance, Environmental Harms and Processes of Denial,” 341.

<sup>193</sup> Thiel and South, “Criminal Ignorance, Environmental Harms and Processes of Denial,” 340.

<sup>194</sup> Michel Foucault, “Power and Sex: Discussion with Bernard-Henri Levy,” in *Michel Foucault: Politics, Philosophy, Culture: Interviews and Other Writings, 1977–1984*, ed. L. Kritzman (London: Routledge, 1988), 133.

catastrophic weather events, worsening seasonal allergies, and increased risk of transmission of certain diseases. Climate change is working on our bodies – this time in a less direct way than in the case of tobacco, but far less avoidable than secondhand smoke. We can also see the microphysics of power/ignorance at play when it comes to consumption. Consumption is necessary for the capitalist system to function, and there needs to be a certain kind of ignorance at play to facilitate it.

Foucault describes disciplinary power as a precondition to the development of industrial capitalism and the bourgeois society which accompanied it.<sup>195</sup> This analysis can be extended: One of the conditions for the continuation of the current society is precisely the form of ignorance constructed about climate change. To return to neoliberal governmentality, there are countless strategies aimed at the continuation of capitalism. Neoliberal governmentality also requires the production of a certain kind of subject, with certain desires and ways to navigate a capitalist. It requires installing self-interestedness into its subjects. Arguably, this works in tandem with the productive aspects of power exercised by the fossil fuel industry.

First, the aim was to produce docile consumers, who consume based on preferences shaped by the industry, while being ignorant about negative externalities. Under neoliberal governmentality, economic rationality makes certain demands on consumers, such as perpetually increasing their own productivity and hence their own consumption. Of course, economic rationality requires consumption of fossil fuels, and their widespread efficiency came at apparently no cost. In other words, ignorance was an integral part of keeping this status quo for the industry. As Oreskes and Conway put it, we have benefited from a lunch which turned out not to be free, and now we are being handed the bill.<sup>196</sup>

After stalling and creating ignorance for decades, the fossil fuel industry changed their strategy and admitted publicly that anthropogenic climate change was real. Of course, existing counter-institutions spreading ignorance are still being funded by the industry, but this shift in strategy allowed for a new measure: The carbon footprint. While the idea of ecological footprints has been around before, the concept of a carbon footprint was popularized by an advertising firm working for British Petrol in 2004.<sup>197</sup> The carbon

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<sup>195</sup> Foucault, *Power/Knowledge*, 105.

<sup>196</sup> Oreskes and Conway, *Merchants of Doubt*, 266.

<sup>197</sup> Naomi Oreskes and Geoffrey Supran, “The Forgotten Oil Ads That Told Us Climate Change Was Nothing,” *The Guardian*, accessed July 6, 2024, <https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing>.

footprint, which in theory allows for applying knowledge, is just another tool of industry agnogenesis.

The introduction of the carbon footprint represents a change in the subjects which are produced. Doubting climate change and spreading ignorance directly is not an option anymore for most companies. Instead, they shifted the responsibility of reducing greenhouse gas emissions onto the consumer. Through this, companies were able to direct the attention of consumers at their own impact on the environment, at the cost of being unaware of the massive carbon emissions by the companies themselves. In other words, a tool which supposedly increases the knowledge of consumers turns out to be a misdirection to increase ignorance about the role of the fossil fuel industry itself. The carbon footprint becomes a tool through which the exertion of power can be internalized by the individuals. Again, the body itself is treated as the point of influence by the microphysics of power. Starting with the diet, continuing to the way citizens travel, to the question of whether to have children, subjects are still pushed to consume, but with all the personal dilemmas which companies can avoid.

As I have already pointed out, the relation between different parts of systems of power can be contradictory. States need to prevent harm from the consequences of climate change, but they have incentives to let industries continue emitting greenhouse gasses, and to let other states act first. Industries can benefit from symbolic gestures which do not actually help (a useful parallel here are cigarette filters, which are ultimately useless). However, states can also engage in downplaying the urgency of taking action. At the center is the production of docile consumers, who are at once faced with the anti-biopower of climate change directly harming their bodies while shouldering the responsibility instead of the fossil fuel industry. All of this is a deviation in the science-heavy narrative presented by Oreskes and Conway. Nevertheless, it is easy to see how a Foucauldian analysis improves on the story told by contemporary agnotologists. With this discussion of the power relations between states and companies, I will now turn to a case of ignorance-production which is done by states: The classification of research.

### 3.3 Ignorance as Strength: Classified Science

While private companies have been a major source of ignorance since the twentieth century, governments are a second kind of source for actively produced ignorance, and they have been producing ignorance for far longer. This itself should not be surprising; secrecy apparatuses have been a staple for ruling since the dawn of time, and the importance of

intelligence services has grown with the development of modern nation states. However, with the traces success of the Manhattan Project, there arose a system of classification, which was deepened as a result of the war on terror.<sup>198</sup> The exact process of classification depends on the kind of knowledge which is produced. Some knowledge, such as any science involving nuclear weapons, is classified instantly.<sup>199</sup>

The sheer amount of information which is kept from the public is hard to grasp. Peter Galison estimates that eight billion pages have been classified between 1978 and 2004 alone, which is more than the library of congress holds. He adds that four million people in the US hold security clearance, in comparison to half a million of college professors.<sup>200</sup> There are thus good reasons to believe that the space of freely accessible knowledge is now smaller than the space of secrets. Galison even uses the term “anti-epistemology” for the field investigating the “art of nontransmission”, which is about how knowledge can be covered and obscured.<sup>201</sup>

The vast amount of classified material makes it impossible for anyone to keep track of whether it is even justified to classify it. We can see this line of argument in some of the calls for declassification. Of course, journalists, scientists and activists have argued for declassification, whether out of a desire for building on classified research or motivated by a commitment to democratic values. However, advisors to the US Department of Defense – including, ironically, Frederick Seitz – argued that too much secrecy can be a problem, particularly because overclassification makes classified material seem less worthy to keep secret.<sup>202</sup> In other words, secrecy is a balancing act – the growth of hidden fields of science might make the people keeping the secrets become careless.

Classification is not the only way of creating ignorance: In the case of the Manhattan Project, not only did scientists claim that they worked on Los Alamos on projects unrelated to the nuclear bomb, but words like “plutonium” were avoided, and “health physics” was used as a stand-in for radiation.<sup>203</sup> There are also scientific discoveries which have been held under wraps in order not to endanger military aims. For instance, magnetic stripes on the seafloor – an important piece of evidence for the existence of continental drift – were

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<sup>198</sup> Galison and Proctor, “Agnotology in Action,” 42.

<sup>199</sup> Peter Galison, “Removing Knowledge: The Logic of Modern Censorship,” in *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2008), 40.

<sup>200</sup> Galison, “Removing Knowledge: The Logic of Modern Censorship,” 38–39.

<sup>201</sup> Galison, “Removing Knowledge: The Logic of Modern Censorship,” 45.

<sup>202</sup> Galison, “Removing Knowledge: The Logic of Modern Censorship,” 45–46.

<sup>203</sup> Galison and Proctor, “Agnotology in Action,” 45.

discovered in WWII but kept secret until the 1950s in order to locate German and Russian submarines.<sup>204</sup> Galison speculates that because of its relevance to cryptography, there might even be classified mathematical theorems in the field of number theory.<sup>205</sup>

Galison also argues that there is what he calls a parasecret system in play, which allows hiding and controlling information about infrastructure – a development spurred on by the war on terror and the Patriot Act.<sup>206</sup> He adds in this context that with every new escalation, such as the war on terror, the growth of secrecy apparatuses increases. Those developments are then justified with the increased level of threat to the US. As Galison points out, many of the apparatuses which were formerly administered by the state are now in the hands of private actors.<sup>207</sup> This includes not only the classic examples of mercenaries, the media or private prisons, but also most of the means of collecting, maintaining and controlling data; resulting in vast amounts of the secrecy apparatus being in the hands of corporations which are less transparent than the government agencies they replaced.<sup>208</sup> This again shows the dispersed nature of ignorance.

This is perhaps the kind of power/ignorance connection which Foucault might have thought about as well – particularly in connection with his analysis of governmentality, that is, the practices through which subjects are governed. However, government agnogenesis is also a prime example of power/ignorance: The production and sustainment of military power depends on the creation of ignorance. In other words, the system of classification is not as simple as protecting a few trade secrets or a few domains of knowledge related to the military. The benefits of state-generated ignorance lie in the enormous amounts of military strength gained through classified research. This applies not only to weapons, but also to developments in logistics, engineering, and industrial capabilities – one of the reasons why the system of classification is so large.

The system of parasecrecy is further evidence of the widening network of well-maintained power/ignorance. Similar to the webs of power/knowledge, we can understand the persons and institutions in charge of preventing knowledge as local points where power/ignorance is actually exercised. In a sense, there is a growth of secrecy for its own sake. The over-classification mentioned previously is a problem indicative of this. There are

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<sup>204</sup> Proctor, “Agnotology,” 19.

<sup>205</sup> Galison and Proctor, “Agnotology in Action,” 47.

<sup>206</sup> Galison and Proctor, “Agnotology in Action,” 46.

<sup>207</sup> Galison and Proctor, “Agnotology in Action,” 48.

<sup>208</sup> Galison and Proctor, “Agnotology in Action,” 51.

also enormous costs to keeping secrets. The cost of secrecy for the US government is estimated to be 15 billion Dollars in 2014.<sup>209</sup> An end to ignorance would also mean an end to power – in the case of US hegemony, quite literally. Declassifying scientific research might even imply an existential risk to US national security, because not only would every other nation then possess the knowledge underlying the US military apparatus, but they could also easily use it to kickstart their own, extensive programs of classified research. Again, power necessitates ignorance, and ignorance requires the use of power.

Brian Rappert and Brian Balmer draw attention to the fact that for intelligence services and national security, ignorance is an asset as well as a threat.<sup>210</sup> Besides producing ignorance, authoritatively claiming to be ignorant or feigning ignorance is also of great importance.<sup>211</sup> This applies not only on a grand diplomatic stage. It also matters when it comes to acts of killing. In a development which arguably started with the compartmentalization during the Manhattan Project, bureaucratization of killing and use of neutral terms like “collateral damage” lead to greater ignorance about killing in war.<sup>212</sup>

Foucault spoke of the impossibility of the utopian dream of knowledge freed from power.<sup>213</sup> Likewise, any hopes of power not being integrated with ignorance are also utopian. Science was, historically speaking, never completely open. In the early modern period only a select group of men were even allowed to be part of the scientific community. While the selection of scientists is now theoretically open regardless of class or gender, it is not as open as some progressive reformers might have hoped. Worse, the fact that entire fields of science are classified is ironically a return to secret knowledge, as practiced by the alchemists.

Moreover, even the figure of the scientist or the engineer themselves is likely not untouched by the development of ever-increasing constructed ignorance. The Manhattan project might have been a watershed moment for the connection between science and the self-understanding of scientists as having a certain responsibility – though certainly not in the way that doubt-mongers like Frederick Seitz accused them of feeling shame for a “sin”. Instead, there has been an increased awareness that scientific research has potentially catastrophic tendencies. However, the increased specialization and professionalization of

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<sup>209</sup> Galison, “Removing Knowledge: The Logic of Modern Censorship,” 30.

<sup>210</sup> Brian Balmer and Brian Rappert, “Ignorance Is Strength? Intelligence, Security and National Secrets,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 345.

<sup>211</sup> Balmer and Rappert, “Ignorance Is Strength?,” 351.

<sup>212</sup> Balmer and Rappert, “Ignorance Is Strength?,” 348–49.

<sup>213</sup> Foucault, *Power/Knowledge*, 51.

science coupled with the way it is kept secret means that the consequences of that research are also more opaque.

It would be a mistake to assume that an adequate analysis can stop with the system of classification and the top classifiers of the US government. We should instead treat power/ignorance as one of the most important tools of analysis for government agnogenesis. A genealogy of state-produced ignorance would be an appropriate counterpart to a genealogy of punishment. Since the early modern period, it is not just the different forms of punishment and disciplinary apparatuses which have deepened in their sophistication, but also the apparatuses of secrecy.

There are multiple avenues for applying a more minute analysis of ignorance: By looking at the way research programs are impacted, by studying the way ignorance prevents researchers from studying certain topics while pushing others forward, and the many ways in which parasecrecy leaves blank spaces for citizens. Of course, doing so means having access to the classified material, which requires that it is declassified beforehand. Unfortunately, for the foreseeable future, our best sources for doing so will likely be the big secret research programs of WWII; the Manhattan project and the development of radar.

Military funding also plays a role in creating ignorance by shifting research priorities. Proctor recounts the case of how solar technology research suffered because of the shift from funding the necessary semiconductor studies to making silicon chips more durable in the face of nuclear strikes.<sup>214</sup> The productive aspects of state-generated ignorance thus include the domains of research which are deemed worth funding. This funding is again lacking in other domains, which means that certain sciences – and fields of mathematics relevant to cryptography – are developed to a larger degree than others. In the agnotological literature, this is sometimes referred to as an “empty space of research” or “undone science”.<sup>215</sup> Counterfactually speaking, one discovery might have led to another. Hence, a lack of such a discovery is then responsible for a cascading progression of ignorance. We can consider shifts in funding as an effect of the security apparatuses of nations with nuclear weapons programs. To put it in hyperbolic terms, ignorance produced the dominance of scientific fields like nuclear physics. However, this historical development might well be considered closer to selectively chosen ignorance, the topic of the next chapter.

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<sup>214</sup> Proctor, “Agnotology,” 10.

<sup>215</sup> Girel, “The Pragmatics of Ignorance,” 69.

#### 4. Lost Realms: Selectively Chosen Ignorance

With the strong focus on actively constructed ignorance, it might seem like agnotology is primarily focused on willfully produced ignorance. Karl Popper has cautioned against falling prey to a “conspiracy theory of ignorance”; something which he particularly accused Marxists of.<sup>216</sup> Of course, not all kinds of ignorance are caused by malicious actors. Agnotologists argue that vast amounts of ignorance are selectively chosen, often for various, incoherent reasons which may be unclear even in hindsight. This selectively chosen ignorance can be thought of in two ways: First, there are avenues for knowing which are closed off, either temporarily or permanently. We can find plenty of such examples in scientific research. Second, there may be an absence of knowledge that has once existed. The severity of this varies; there might be no sources left or if there are, no one is aware of them anymore. Even documents are useful only insofar as there are people who access them and who know of their existence. The same goes for knowledge-how which no one teaches anymore.

In the following section, I will briefly discuss the distinction between different kinds of ignorances and relate them to the concepts of discourse and *episteme* alongside the concept of power/ignorance. My goal here is not to offer a comprehensive discussion of a specific case, but merely to offer different points of entry into selectively chosen ignorance in agnotology using Foucauldian terminology. I will then discuss a case which will enrich the power/ignorance analysis presented thus far: The ignorance created about abortifacients surrounding the transmission of knowledge during colonialism. I will argue that this and similar cases should be considered the consequence of a specific apparatus, which was not aimed at the production of knowledge but at forgetting knowledge. In other words, selectively chosen ignorance is also an effect of power.

##### 4.1 Deep Ignorance and Episteme

Kourany and Carrier distinguish between four types of selectively chosen ignorance: “focus-generated”, “framework-centered”, “methodology-created”, and “community-based ignorance”.<sup>217</sup> Those four distinctions drawn by Kourany and Carrier are not exhaustive, and as we will see, some of those categories are broader than others. Yet they all touch on

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<sup>216</sup> Girel, “The Pragmatics of Ignorance,” 65.

<sup>217</sup> Kourany and Carrier, “Introducing the Issues.”

concepts used by Foucault. I will not be able to address those four types in greater detail, but I will point to connections to a Foucauldian analysis.

Focus-generated ignorance refers to ignorance from inquiries which are too narrow in scope. For instance, the AIDS crisis was treated simply as a biomedical issue, which led to social and economic factors being ignored in managing the spreading of AIDS.<sup>218</sup> However, researchers are not the only ones who can create ignorance through their focus; government agencies and laws can do this as well. In the US, while the Food and Drug Administration requires food to be tested and the Environmental Protection Agency reviews the impact of pesticides before those substances enter the market, most other chemicals can enter the market without having to provide data about their toxicity.<sup>219</sup> This focus on food and agriculture allows toxic chemicals to slip through and potentially see widespread use for decades.

In Foucault's conception, researchers become passive sites of the production of knowledge, rather than active participants who are unaffected by their circumstances and backgrounds. This can be clearly observed in linguistic research, where regional dialects are the focus from the perspective of researchers using their standard language, rather than the other way around.<sup>220</sup> We can understand focus-generated ignorance along the lines of shifts in discursive practices: Discourses on disease frequently do not include acknowledging the social dimension. In the case of AIDS, this was exacerbated by the stigmatization of the groups at risk – another result of ignorance. In the case of toxic chemicals, there are also specific ways of speaking about them, mostly in the context of the foods we consume and by extension the pesticides used on those foods. Of course, in those cases, there are also countless examples of actively constructed ignorance, as pointed out in the previous sections.

The second category proposed by Kourany and Carrier is community-based ignorance. In research, this might involve shifts in the communities producing knowledge – causing other communities to lose their ways of knowing – or it might involve homogenous groups of researchers who choose not to investigate a range of connected topics. The former can be seen with the professionalization of certain fields driving out nonprofessionals, such as the loss of anthropological accounts of merchants, travelers, missionaries, and other

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<sup>218</sup> Kourany and Carrier, "Introducing the Issues," 12.

<sup>219</sup> Carl F. Cranor, "How the Law Promotes Ignorance: The Case of Industrial Chemicals and Their Risks," in *Science and the Production of Ignorance*, ed. Janet A. Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 167–68.

<sup>220</sup> Mills, *Michel Foucault*, 70.

amateurs when anthropology became a professional discipline.<sup>221</sup> We can observe the latter in cases where groups are, for instance, male-dominated: Male primatologists tend to focus on the behavior of male primates to the detriment of studying female primates.<sup>222</sup>

This means that community-based ignorance can be considered as the result of discursive exclusions. Since discursive formations require exclusions, they create ignorance in the form of excluded statements. The clearest example might be selectively chosen ignorance as a result of taboos. However, in the case of non-professionals being driven out, those exclusions take place at the internal level: In some cases of community-based ignorance, there might be no commentary on certain authors; or the commentary is focused on certain topics more than others as a consequence of a homogenous group of commentators. In other cases, subjects are simply not permitted to speak in a discourse. According to Foucault, entering a discourse might require the satisfaction of certain conditions; subjects not fulfilling them can only speak their truth “in the void”.<sup>223</sup> If amateurs do not count as members of the academic discipline of anthropology, they are thus not able to produce anthropological knowledge. Additionally, there might also be statements which fall between two disciplinary boundaries and as a result get ignored by both.

In a Foucauldian understanding of research, the investigated topics are a direct consequence of the power relations of social groups. For instance, there is more research on homosexuality than on heterosexuality, there is more effort to understand the working class than the middle class, and anthropological studies are frequently focused on marginal groups, rather than on what we might consider to be the typical reader of those studies.<sup>224</sup> In other words, precisely because certain statuses are perceived as normal, it is deemed not interesting to investigate them. This fits squarely with this kind of ignorance: A community of researchers might have a similar background. Homogenous groups of researchers share homogenous ideas of what is normal and what constitutes an interesting phenomenon worthy of study.

Framework-centered ignorance relates to the different approaches which researchers have when looking at the same phenomenon. For instance, cancer researchers might approach cancer as a group, as in tissue organization field theory, or as a single cell, as in

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<sup>221</sup> Janet A. Kourany, “Science: For Better or Worse, a Source of Ignorance as Well as Knowledge,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 178.

<sup>222</sup> Kourany and Carrier, “Introducing the Issues,” 16.

<sup>223</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 224–25.

<sup>224</sup> Mills, *Michel Foucault*, 69.

somatic mutations theory. Researchers approaching cancer under the somatic mutations theory have outright missed structures which were clearly distinguishable under the tissue organization field theory.<sup>225</sup> Meanwhile, methodology-created ignorance refers to situations where researchers choose one methodology over the other and as a result produce ignorance. One such conflict is the different datasets gathered by evidence-based medicine versus personalized medicine. Researchers doing personalized medicine will assume that drugs work differently on different patients, which means that they will settle for smaller sample sizes than required by evidence-based medicine.<sup>226</sup>

The connections to Foucault with those two kinds of ignorance are perhaps less strong. However, at least the very radical forms of methodology-created and framework-centered ignorance can be seen as the result of ignorance at the level of the *episteme*. When researchers are sometimes straightforwardly unable to see phenomena based on their framework or when their methodology might close their research for further evidence, they might arguably already have left the shared discourse of their field. Regardless, the fourfold categorization offered above does not really provide a full picture of selectively chosen ignorance. Since our *episteme* is constantly shifting, the discursive formations which at once give rise to science and make ignorance possible are also constantly shifting. It is thus worth investigating what the supposed growth of knowledge means for our understanding of ignorance, according to agnotologists.

Several thinkers have argued that when our knowledge grows, so does our ignorance. The idea behind this is that with every new scientific discovery, new questions arise as well, leaving us with more open questions and ignorance than before – a paradox of gaining knowledge.<sup>227</sup> However, Torsten Wilholt argues that things are more complicated. He proposes “conscious ignorance” as a new term. Conscious ignorance is an awareness of how much we still do not know, and it is created by gaining knowledge.<sup>228</sup> However, we should not consider this ignorance as a set of propositions waiting to be discovered, but rather as a series of questions we can choose to focus on.<sup>229</sup> Wilholt then introduces “opaque ignorance”, which can be seen as a set of possible questions we are not aware of. He employs the analogy of former US Secretary of Defense Donald Rumsfeld’s distinction between “known

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<sup>225</sup> Kourany and Carrier, “Introducing the Issues,” 13–14.

<sup>226</sup> Kourany and Carrier, “Introducing the Issues,” 15.

<sup>227</sup> Wilholt, “On Knowing What One Does Not Know,” 196.

<sup>228</sup> Wilholt, “On Knowing What One Does Not Know,” 197.

<sup>229</sup> Wilholt, “On Knowing What One Does Not Know,” 199.

unknowns” and “unknown unknowns”.<sup>230</sup> The former are the things we know that we are ignorant about, while we are not even aware of the latter.

One could make the argument that conscious ignorance also works as a resource for science. Conscious ignorance sets the stage for further enquiry, something which is essential for research to take place at all. In other words, we could consider some of the research not yet done as a resource for the future development of science. Importantly, this assumes that the conscious ignorance available to scientists is not permanently closed off. The mere fact that scientists are aware that certain questions require answers does not mean that they have the capacity to set the research agenda themselves. Even leaving avenues of research aside for a while might lead to significant problems further down the line, such as when it comes to researching alternatives to fossil fuels. Funding incentives necessarily mean that conscious ignorance as a resource will oftentimes be left unexploited.

Another way in which research itself sometimes demands ignorance is in the way research data is defined. Mike Micheal uses the metaphor of social research as following an epistemic choreography, which allows certain persons to participate in the “dance”.<sup>231</sup> He lists examples of ignorance in the social research process: Participants might be incapable of giving coherent answers due to being unwell or drunk, they might use irony to avoid giving honest answers, they might be disruptive by heckling the researches or they might simply not show up.<sup>232</sup> Michael argues that ignoring those inputs is not even a deliberate act; instead, researchers who ignore those acts of “misbehaving” are simply not seeing them as data.<sup>233</sup>

In other words, we should be careful not to equivocate between different kinds of ignorance. Our conscious ignorance does indeed grow as we gain knowledge, arguably at the same rate or even more than our knowledge. However, this does not apply to opaque ignorance, which we cannot even focus our research on. Scientists cannot formulate research questions for issues they are not even aware of. Within the space of opaque ignorance, we can only hope for accidental discoveries. Wilholt lists Röntgen’s discovery of X-rays as such a stroke of luck.<sup>234</sup> In other words, unless we make drastic changes to our research

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<sup>230</sup> Wilholt, “On Knowing What One Does Not Know,” 197.

<sup>231</sup> Mike Michael, “Ignorance and the Epistemic Choreography of Social Research,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 108.

<sup>232</sup> Michael, “Ignorance and the Epistemic Choreography of Social Research,” 108.

<sup>233</sup> Michael, “Ignorance and the Epistemic Choreography of Social Research,” 109.

<sup>234</sup> Wilholt, “On Knowing What One Does Not Know,” 198.

framework, we are dependent on accidental discoveries. Furthermore, awareness of questions does not entail awareness of possible answers to those questions; Wilholt refers to such ignorance as “deep”.<sup>235</sup>

Drawing on Wilholts’ distinctions, Paul Hoyningen-Huene introduces the categories of “deeply opaque ignorance” and “radically opaque ignorance”. In both categories, the epistemic subject is not even able to articulate possible answers, as doing so would turn them into conscious ignorance. However, in the case of deeply opaque ignorance it is possible to understand the question, even if it is not possible to understand the answer. Hoyningen-Huene uses the example of Aristotle, who would not grasp our contemporary understanding of light as electromagnetic radiance, but who was nonetheless perfectly able to understand and formulate the question of what light is.<sup>236</sup> By contrast, in the case of radically opaque ignorance even understanding the question is impossible. Hoyningen-Huene argues that Aristotle would not understand what we wanted from him if we asked him about the proportion of hydrogen and oxygen in water molecules.<sup>237</sup>

We might thus consider radically opaque ignorance as ignorance produced on the level of *episteme*. We can find many examples in the vein of Hoyningen-Huene’s hypothetical reaction of Aristotle. Under an older *episteme*, it is not a scientific explanation to speak of molecules. We do not need to perform thought experiments of Aristotle being confronted with knowledge gained two millennia after his death. Foucault uses an example of someone failing to adhere to the prevalent discourse, which also constitutes a case of radical opaque ignorance: Biologists in the nineteenth century were not able to see what Mendel saw concerning inheritance.<sup>238</sup> We can consider countless other examples: During the time of taxonomic natural history, evolutionary explanations were not yet valid ways of thinking about nature. Talking about evolution in such a context would have meant not staying in the true, to use Foucault’s formulation.

Hoyningen-Huene argues that we will permanently be dealing with deeply opaque ignorance, our scientific progress notwithstanding.<sup>239</sup> This conclusion is clearly in line with Foucault’s understanding of *episteme*. Of course, Foucault is more radical since he does not share the epistemological assumptions of those agnotologists who believe that knowledge is

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<sup>235</sup> Wilholt, “On Knowing What One Does Not Know,” 200.

<sup>236</sup> Paul Hoyningen-Huene, “Strong Incommensurability and Deeply Opaque Ignorance,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 222.

<sup>237</sup> Hoyningen-Huene, “Strong Incommensurability and Deeply Opaque Ignorance,” 222–23.

<sup>238</sup> Foucault, *The Archeology of Knowledge and the Discourse on Language*, 224.

<sup>239</sup> Hoyningen-Huene, “Strong Incommensurability and Deeply Opaque Ignorance,” 238–39.

fundamentally additive. In the conclusion of his *The Order of Things*, Foucault argues that the category of “man” was only able to be developed after the Classical Age and will eventually disappear, just like it was “born”.<sup>240</sup> Taking Hoyningen-Huene arguments further, we might say that radically opaque ignorance will also stick around, since we are not operating in the same *episteme* as we were a few hundred years ago, and in the future we will likely yet again operate in a different *episteme*.

#### 4.2 Lost Knowledge in the Colonial Era: Ignorance-Inducing Apparatuses

Community-based ignorance played a large role in the knowledge lost during the colonial era. The case of the *Caesalpinia pulcherrima* or peacock flower – a particular abortifacient used in the Caribbean – is a striking example. The knowledge of its properties was largely lost in history. However, there were Europeans who knew that the plant served as an abortifacient. This is clear from the *Metamorphosis of the Insects of Surinam*, written in 1705 by Maria Sibylla Merian, who describes how enslaved women used the peacock flower to prevent giving birth.<sup>241</sup> Moreover, the peacock flower itself was brought to both Paris and Leiden, where botanists remarked that it would grow higher than in Barbados.<sup>242</sup> In line with the foundational idea of agnotology, it is a surprising fact that not all knowledge available in the colonies was transferred to the colonial powers, and this needs to be explained.

Contrary to what one might assume at first, bans on abortion were not the reason for this lost knowledge. As Schiebinger points out, it took until the nineteenth century for abortion to become illegal in Europe, and it was generally assumed that the fetus did not have a soul until the late fourth month of pregnancy.<sup>243</sup> Instead, Schiebinger offers a range of possible explanations. One of those explanations is a lack of interest on part of the men involved. The plant was collected by male botanists working with male physicians under male colonial administrators; those men were mostly interested in medical applications which was of practical relevance for them.<sup>244</sup> The fact that their research was male-dominated can be seen as an instance of community-based ignorance.

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<sup>240</sup> Gutting and Oksala, “Michel Foucault.”

<sup>241</sup> Londa Schiebinger, “West Indian Abortifacents and the Making of Ignorance,” in *Agnotology: The Making and Unmaking of Ignorance*, ed. Londa Schiebinger and Robert N. Proctor (Stanford: Stanford University Press, 2008), 150.

<sup>242</sup> Schiebinger, “West Indian Abortifacents,” 151.

<sup>243</sup> Schiebinger, “West Indian Abortifacents,” 156.

<sup>244</sup> Schiebinger, “West Indian Abortifacents,” 156.

However, we can also look at the discursive shifts involved in this process. The transmission of knowledge was hindered by the professionalization and standardization of the new male-dominated field of obstetrics, as opposed to the female-dominated field of midwifery.<sup>245</sup> We should keep in mind that such a result of knowledge being lost in transmission is by no means unique. As pointed out earlier, whenever traditional ways of knowing are consolidated into professional practices or sciences, amateurs are likely to be excluded from the new discourse.

Furthermore, Schiebinger points to the logic of mercantilist growth: In order for European states to increase economic production, they needed a growing, healthy population at home and a growing slave population in the colonies.<sup>246</sup> In other words, plants which served to keep the population healthy were beneficial to this aim, while (freely accessible) abortifacients were counterproductive. This was true of the European population, but it was even more important for the slave industry which was used to feed the colonial engines of growth. Widespread knowledge and use of abortifacients was not in the interest of slaveholders. I would argue that what we can observe in this case is ignorance as an effect of an apparatus arising to meet an urgent need of the mercantilist states.

This urgent need in the case of the peacock flower is the growth of the population for mercantilist aims. The dominant strategic function is an increase in the productive capacity of the colonial powers. Further evidence of this can be found in the writings of Alexander von Humboldt, who also learned about different abortifacients during his travels but decided against spreading this knowledge.<sup>247</sup> Von Humboldt considers the risk of transmitting knowledge about abortifacients as an additional strain on the smallpox-stricken population, complaining about “guilty mothers” and arguing that the practice of abortion works to “render the progress of population almost imperceptible”.<sup>248</sup> We can also observe here the beginnings of a moral discourse surrounding abortion; however, the actual morality of the issue seems more like an afterthought to the neo-mercantilist aims.

Foucault argues that while the question of the ideal size of a population was around for a long time, the eighteenth century was the era where technologies like demographics and increased knowledge of hygiene and epidemics really came to play.<sup>249</sup> He also describes

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<sup>245</sup> Schiebinger, “West Indian Abortifacients,” 157.

<sup>246</sup> Schiebinger, “West Indian Abortifacients,” 157.

<sup>247</sup> Schiebinger, “West Indian Abortifacients,” 158.

<sup>248</sup> Alexander von Humboldt and Aimé Bonpland, *Personal Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799 - 1804*, trans. Helen Williams, vol. 5 (London, 1814), 28–32.

<sup>249</sup> Foucault, *Power/Knowledge*, 226.

an instance where contraception was encouraged as a way to keep babies alive, which made it compatible with a natalist policy.<sup>250</sup> In other words, the apparatus as a grid of intelligibility helps us to understand policies which might at first seem at odds with each other. Those policies are the result of the apparatus shifting to accommodate new evidence or changes in the web of power/knowledge. Arguably, the banning of abortion later in the nineteenth century can be attributed to the same apparatus.

We can also see the practices surrounding the politics of health in play when it comes to other botanical discoveries, where knowledge was indeed transferred back to Europe. The colonial powers often went out of their way to find botanical products like *Chinquona* bark, which was used as an anti-malaria drug.<sup>251</sup> However, unlike the peacock flower, the use of anti-malaria drugs is helpful in sustaining and increasing the population – most importantly, the colonial settlers in malaria-infested regions. However, it would be a mistake to claim that agnogenesis was always the result of the colonizers. Indeed, native tribes were frequently engaged in agnotological practices themselves. We can see this in the discovery of fossils on native lands: Since fossils were often taken to possess magical qualities or medical applications, tribal leaders installed taboos on collecting them.<sup>252</sup>

To return to an example from section 2, Foucault himself talks about an apparatus fulfilling a different need in mercantilist economy: The subjection and control of the mentally ill. Again, apparatuses can also serve to create ignorance. We can consider both the ordinary medical applications of botanical discoveries in the New World and the lost realm of abortifacients to serve the same strategic aim. The apparatus of population growth involved the production of ignorance on multiple levels: First, the professionalization of midwifery crowded out a community of knowers who might have had contributions to make to this new body of knowledge. Unlike the example of amateur anthropologists being locked out from a professional discourse, this was not a simple byproduct. Rather, it was the precondition of another move, because it allowed putting the knowledge and the ability to perform abortions into the hands of state-controlled institutions.

Women growing abortifacients in their gardens would certainly have disrupted the power relations surrounding the growth of the population. Doctors were embedded in certain

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<sup>250</sup> Foucault, *Power/Knowledge*, 227.

<sup>251</sup> Schiebinger, “West Indian Abortifacients,” 149.

<sup>252</sup> Adrienne Mayor, “Suppression of Indigenous Fossil Knowledge: From Claverack, New York 1705 to Agate Springs, Nebraska, 2005,” in *Agnology: The Making and Unmaking of Ignorance*, ed. Proctor Robert N. and Londa Schiebinger (Stanford: Stanford University Press, 2008), 176.

institutional contexts, which facilitated a stronger control over the health of the population by states. With the creation of midwifery, this arguably applied to midwives as well. We can understand this in terms of a discourse where certain groups are not allowed to spread their knowledge; that is, as a discursive exclusion creating ignorance. However, the apparatus also includes practices on a non-discursive level, so we should be careful not to reduce this to a discursive exclusion. Rather, the apparatus of population growth worked directly on the bodies of women through the ignorance created, primarily on enslaved women in the colonies but also on women in Europe.

It is necessary to emphasize that not all instances of lost knowledge are the result of conscious decisions. For instance, the peacock flower is not the only case of selectively chosen ignorance in the field of botany. As Schiebinger explains, there are inherent epistemic blind spots resulting from the practicalities of colonial trade. Certain plants were easier to transport than others, which biased the botanical record in favor of succulents and bulbs, and as a result of accidentally transporting seeds in shipping soil between colonies, tropical plants appeared to be less diverse than they were before colonial trade.<sup>253</sup>

There is still knowledge of various botanical abortifacients around in the Caribbean, such as Costa Rica. However, this knowledge is to a large degree transmitted in secret, since abortion is still illegal there.<sup>254</sup> There are extensive discussions surrounding epistemic decolonization in postcolonial studies. Unfortunately, I do not have the space to address these debates here. The same goes for discussions of epistemic violence and the works of feminist epistemologists on decolonization. However, it is worth pointing out that considering apparatuses might be a useful starting point for further investigations into the ignorances created through colonial practices. Such a grid of intelligibility might also allow new strategies for unmaking colonial ignorance.

As Alison Wylie points out, history itself is seldom controlled by professional historians. Instead, it is shaped at countless sites, by different power relations and interest groups.<sup>255</sup> In areas like archeology, this is particularly clear: There are countless “silences” as a result of natural processes of decay, but there are also the destructive consequences of actions such as tomb robbing, certain building and development practices and mistakes

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<sup>253</sup> Schiebinger, “West Indian Abortifacents,” 153.

<sup>254</sup> Schiebinger, “West Indian Abortifacents,” 158–59.

<sup>255</sup> Alison Wylie, “Mapping Ignorance in Archeology: The Advantages of Historical Hindsight,” in *Agnology: The Making and Unmaking of Ignorance*, ed. Robert N. Proctor and Londa Schiebinger (Stanford: Stanford University Press, 2008), 187.

during the excavation.<sup>256</sup> Merely gaining knowledge is not the only thing that can happen in an apparatus. Sometimes, giving it up or losing it can also be a fundamental part serving the strategic need. Finding such lost realms thus requires an understanding of the apparatuses behind their disappearance.

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<sup>256</sup> Wylie, “Mapping Ignorance in Archeology: The Advantages of Historical Hindsight,” 188.

## 5. Virtuous Ignorance

Ignorance in social contexts is often treated as what some epistemologists have called a “socio-epistemic dysfunction”.<sup>257</sup> Most of the ignorances addressed thus far – the agnogenesis of the tobacco lobby, for instance – is seen as vicious by agnotologists. However, as agnotologists are quick to point out, not all forms of ignorance are bad. Therefore, agnotologists also speak of virtuous ignorance, where certain questions are not asked, and certain research is not conducted. There are two forms of virtuous ignorance which I will address in this section – ignorance which scientists endorse and ignorance which members of the public endorse. I am going to argue that many paradigmatic instances of virtuous ignorance turn out to be cases of resistance to bio-power: The decision to refuse research which might contribute to bio-power, and the right of individuals not to know about matters relating to their body. This is not simply of theoretical interest for agnotologists, but also for those involved in those acts of bio-power resistance.

Kourany and Carrier argue that virtuous ignorance as a category sits somewhat uneasily in the taxonomy of ignorance because it is also actively constructed.<sup>258</sup> However, there are good reasons to present it as its own category. First, as the label already states, other forms of actively constructed ignorance are vicious; as we have already seen with the death toll of smoking and climate change. Second, people are usually aware that we are ignorant about certain things; virtuous ignorance can thus be labeled an instance of a “known unknown”. I would therefore argue that it is justified to distinguish this from both actively constructed ignorance and selectively chosen ignorance.

The label “virtuous ignorance” is obviously a normatively laden term, and the way resistance is usually talked about in non-Foucauldian contexts is also frequently in normative terms. However, this should not be construed as an automatic endorsement of this resistance. Likewise, what counts as virtuous ignorance is a hotly contested topic because of the inherent normativity of the issue. Sometimes, particularly in the social sciences, research is simply uncomfortable. For instance, for years there was a ban on federal funding on gun violence research in the United States.<sup>259</sup> What certain parts of the US government considered to be virtuous ignorance, others saw as vicious agnogenesis. I intend to avoid taking definitive normative positions in the cases I will discuss.

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<sup>257</sup> O’Connor, Goldberg, and Goldman, “Social Epistemology.”

<sup>258</sup> Kourany and Carrier, “Introducing the Issues,” 9.

<sup>259</sup> Joanna Kempner, “Forbidden Knowledge in a Post-Truth Era,” in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoe (London: Routledge, 2022), 97.

Virtuous ignorance should be distinguished from rational ignorance, though there can be some overlap. Ignorance is usually defined as rational if and only if the costs of knowing outweigh the benefits of knowing.<sup>260</sup> The idea of rational ignorance is connected to behavioral economics: Sometimes ignorance is a response to the sheer amount of information available. It would be a waste of time to spend every second trying to take in new information without regards to its usefulness. However, this economic way of thinking about the beneficial aspects of ignorance is mostly not what is at stake in the following discussions, though there is overlap in specific cases: As we will see, knowledge can also sometimes be distressing and detrimental to one's mental health.

### 5.1 Scientific Self-Censorship

I will begin by elaborating on virtuous ignorance among scientists. This form of virtuous ignorance occurs when scientists decide not to investigate what might be called forbidden knowledge. There are plenty of questions to which answers are frowned upon; frequently, those are questions directly related to exerting power over human bodies. Common examples include cloning and other parts of genetic research when it concerns humans, but also research regarding the development of bioweapons or experiments regarding which methods of torture are the most effective.

As in other cases of power/ignorance, we should not fall into the old way of thinking about power or knowledge as top-down phenomena. Scientific institutions are often more restrictive in their limiting of research than politicians. Lawmakers might be too ignorant of possible threats or too slow to act before research into dangerous fields takes place. For instance, the United States National Academy of Sciences called for a ban on human reproductive cloning before there was legislation to this effect.<sup>261</sup> This is effectively a form of self-censorship. There is thus a self-regulating aspect of this in the interactions between scientists, since they are faced with repercussions to their career should they pursue forbidden knowledge. As Joanna Kempner argues, controversy appears to be the main driver of this.<sup>262</sup>

Scientists are thus put at odds with the interests of certain parts of the state. States stand to benefit from having knowledge about genetics in general and human cloning in

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<sup>260</sup> Ilya Somin, "Rational Ignorance," in *Routledge International Handbook of Ignorance Studies*, ed. Matthias Gross and Linsey McGoey (London: Routledge, 2022), 313.

<sup>261</sup> Kempner, "Forbidden Knowledge in a Post-Truth Era," 98.

<sup>262</sup> Kempner, "Forbidden Knowledge in a Post-Truth Era," 99.

particular. The eugenics programs of the early twentieth century are a testament to this. We can thus see attempts to limit research into those topics as attempts to regulate the biopower available to states. The virtuous ignorance of refusing to investigate certain topics is an act of resistance against furthering the technologies for controlling populations. Their chosen ignorance thus works as resistance against power/knowledge. As Colin Gordon argues, the apparatuses of power identified by Foucault are fragile and always open to counterstrategies like reappropriation and reutilization.<sup>263</sup> What this looks like in practice will vary greatly.

Kempner argues that we should think of forbidden knowledge as a social process involving ethical considerations, rather than as a static list of taboos.<sup>264</sup> Which ignorance is virtuous differs between societies. It is also a matter of constant negotiation. As Kourany points out, the right to scientific freedom is limited by various other norms, such as the prohibition of eugenics.<sup>265</sup> There is thus a conflict between freedom of research and concerns regarding the consequences of that research. Kourany argues that in order to adjudicate between those two, we should look into past instances where this conflict has already been resolved.<sup>266</sup>

## 5.2 Refusing Knowledge: Resistance Against Bio-Power

The second form of virtuous ignorance concerns the knowledge that ordinary citizens refuse. I will mainly focus on a particular case study connected to biopower: The right not to know about genetic matters. As Peter Wehling argues, with biomedical advances and new methods like expanded carrier screening, there are now more and more procedures necessitating a right not to know one's genetic makeup.<sup>267</sup> The idea of a right not to know has become increasingly relevant in the bioethical literature since the launch of the Human Genome Project in 1990 and is usually contrasted with a duty to know about the genetics of potential children, arising from parental obligations.<sup>268</sup> Since this is not a thesis on bioethics, I will describe the arguments in this debate only briefly.

Wehling argues that such a right not to know is important for several reasons. Exposing people to knowledge of their own potential issues might force them to live for

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<sup>263</sup> Foucault, *Power/Knowledge*, 256.

<sup>264</sup> Kempner, "Forbidden Knowledge in a Post-Truth Era," 96–97.

<sup>265</sup> Janet Kourany, "Might Scientific Ignorance Be Virtuous? The Case of Cognitive Differences Research," in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 123–24.

<sup>266</sup> Kourany, "Might Scientific Ignorance Be Virtuous?," 130.

<sup>267</sup> Wehling, "The Right Not to Know," 234.

<sup>268</sup> Wehling, "The Right Not to Know," 235.

decades without the disease manifesting, particularly if there is no cure available.<sup>269</sup> This can lead to anxiety, depression, or other mental health issues. This problem impacts society as well as individuals. Information about a person's genetic makeup is also information about the genetic makeup of their close relatives; knowledge about their conditions might lead to societal stigmatization and discrimination against the so-called "healthy ill".<sup>270</sup> The UNESCO Universal Declaration on the Human Genome and Human Rights from 1997 follows similar cautions to those expressed by Wehling and states that there is a right not to know.<sup>271</sup>

However, as mentioned before, parental responsibility is often brought up as a counterargument. If there is a duty for parents to know about potential genetic diseases, then knowledge might even be mandated for people planning to have children. A further counterargument is that not knowing undermines one's own autonomy by restricting the ability to rationally plan for the future.<sup>272</sup> This line of argumentation might also appeal to Kantian duties towards oneself.

Galison considers privacy to be an instance of virtuous ignorance, and he argues that we should not grant corporations or the government as much secrecy as we grant citizens privacy.<sup>273</sup> Indeed, the right not to know is a form of privacy in the sense that part of the ignorance is directed outward. If one does not know their genetic makeup because of a refusal to have it analyzed, states and corporations will also be ignorant of it – assuming that they do not gather it in secret. However, it is also an ignorance which is directed inwards, an ignorance directed against oneself. This is perhaps even more significant, because the rituals of power working on the body are frequently chosen and enacted by individuals themselves.

We can see this once we broaden the discussion to other topics related to the health of individuals. In recent decades, the number of possible ways to know oneself in matters of health has grown rapidly. Examples include tools such as apps and smartwatches to track fitness, the possibility to calculate and track caloric intake, and the application of chronobiological knowledge about the sleep-wake cycle. Indeed, there are countless other ways in which applied biological and medical knowledge can be used in combination with self-disciplining tools to improve our bodies.

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<sup>269</sup> Wehling, "The Right Not to Know," 236.

<sup>270</sup> Wehling, "The Right Not to Know," 236.

<sup>271</sup> Wehling, "The Right Not to Know," 237.

<sup>272</sup> Wehling, "The Right Not to Know," 238.

<sup>273</sup> Galison and Proctor, "Agnotology in Action," 49.

Furthermore, there are other kinds of knowledge about oneself which can prove to be a double-edged sword. We can see this in the webs of power/knowledge and power/ignorance for individuals whose identity is constituted through scientific discourse. In these cases, individuals are put in a situation where they gain knowledge in some ways and ignorance in others. A helpful example is the discussion on Asperger syndrome as presented by Miriam Solomon. She presents this case in the context of ignorance as an active construction. Solomon treats this case in the context of hermeneutical injustice; however, as mentioned earlier, I do not have the space in this thesis to elaborate on epistemic injustice. Instead, I want to briefly consider the way power/ignorance works in such discourses and individualizations.

Asperger syndrome was first described by a German pediatrician named Hans Asperger in 1944.<sup>274</sup> From the 1980s onward it was distinguished from autism, particularly in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as part of the group of “pervasive developmental disorders”.<sup>275</sup> Nevertheless, because it was difficult to differentiate from high functioning autism, it was eventually dropped from the next edition of the manual, the DSM-5.<sup>276</sup> It is necessary to point out that the category of Asperger syndrome was clearly seen as helpful, not just by psychiatrists but also by patients and their relatives. However, there were unintended consequences of this diagnostic distinction. Since Asperger Syndrome was seen as a less severe condition than autism, parents of children with developmental issues who had been diagnosed with Asperger were more likely to accept the diagnosis, being relieved that it was not autism.<sup>277</sup> Likewise, adults who had been diagnosed with Asperger Syndrome – which often correlated positively with higher socioeconomic status – were in a position to present themselves as differently talented rather than disabled.<sup>278</sup>

What is at stake in those classifications is not merely a tool for psychiatrists. It is also a way of knowing about oneself – and about being ignorant about certain other aspects of oneself. This is evident in the trivial way in which getting one diagnosis precludes a second one. For instance, people who have been diagnosed with classic autism in the 1990s might

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<sup>274</sup> Miriam Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism: The Case of Asperger Syndrome,” in *Science and the Production of Ignorance*, ed. Janet Kourany and Martin Carrier (Cambridge, MA: MIT Press, 2020), 148.

<sup>275</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 149.

<sup>276</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 150.

<sup>277</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 152.

<sup>278</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 153.

have benefitted from the later approach to neurodiversity. However, it is also evident on the more fundamental level under which there is a medical diagnosis in the first place. People who would have been diagnosed under the DSM-IV might have a very different understanding of themselves than those diagnosed later or before, as rejecting a binary distinction between “lesser” and more serious cases allows the conception of a spectrum of neurodiversity. Solomon argues that while the end of the category of Asperger Syndrome meant a loss in their identity, it might have been an improvement for those who were diagnosed with classic autism.<sup>279</sup> However, there is also the opposite case to be made by those who were suddenly left without the category which constituted their old way of self-understanding.

The DSM itself is one of the most interesting cases of codified knowledge which has the potential to create ignorance. On the one hand, it is highly helpful to have standardized categories in diagnostics and treatments. On the other hand, whether those can ever resemble something like natural kinds is disputed. Solomon argues that while the categories employed by the DSM are the best we have, even defenders do not claim that it carves nature at its joints.<sup>280</sup> Instead, the knowledge developed in psychiatric manuals is developed through a special dynamic between psychiatrists and patients. As Solomon argues, this is far from the only instance where we can observe those dynamics. She points out that in cases like sexual identity, essentialism about categories is often taken for granted, which means that putting queer identities in supposedly stable categories for the sake of producing knowledge about those identities can end up producing ignorance.<sup>281</sup>

It helps to understand those dynamics in the context of what Foucault describes as “confessional practices”. One of Foucault’s main conclusions in this regard is that during confessional practices, the confessing subject does not yet know the truth; instead, truth is produced during those practices.<sup>282</sup> The inspiration behind this concept is the Christian act of confession. However, there are comparable acts in medical and psychiatric practices, such as psychoanalysis; especially when it comes to people trying to understand sexuality.<sup>283</sup> By confessing, people turn themselves into subjects of a specific discourse and knowledge. They give up certain ways to understand themselves. In return, they gain knowledge about a new

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<sup>279</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 154.

<sup>280</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 155.

<sup>281</sup> Solomon, “Agnotology, Hermeneutical Injustice, and Scientific Pluralism,” 157.

<sup>282</sup> Foucault, *Power/Knowledge*, 216.

<sup>283</sup> Foucault, *Power/Knowledge*, 214–15.

way for self-understanding. In other words, there is a choice to be made between different kinds of knowledges and ignorances. By framing a discourse about themselves in a specific language, subjects reject knowledge about other desires and parts of themselves. Thus, refusing to enter one discourse and choose another might also be construed as an act of resistance.

Again, this analysis should not be taken as an argument against the possibility of knowing about one's body. The mere fact that something is an act of resistance against power does not say anything about its normative implications. It does not even need to qualify as a prudential decision. While certain kinds of knowledge are unwanted and perhaps even dangerous for our own wellbeing, knowledge about one's body is frequently lifesaving. To return to the earlier distinction to rational ignorance, economically rational actors will choose ignorance over knowledge if the costs of knowledge exceed the benefits. However, proponents of a right not to know about genetic matters are first and foremost arguing for people to have that choice. Of course, they are also implicitly arguing that there should be no one else to make this decision for them, including corporations and states.

The act of resistance does not necessarily have to be a good decision. It also does not even need to be a conscious act, let alone an act consistent with other acts in a power/knowledge matrix. As Colin Gordon remarks in the afterword to *Power/Knowledge*, as a result of Foucault's analysis of power, resistance might lose some of its political glamour. Movements which draw lines between correct and incorrect forms of resistance, between legitimate protests and "hooliganism", are thus ignoring the fact that all of those might qualify as acts of resistance.<sup>284</sup> Gordon also concludes that drawing a binary line between resistance and non-resistance is not possible.<sup>285</sup> People might choose ignorance on some occasions and not on others. Foucault's insights into resistance serve to demystify resistance, just like his work demystifies the political role of knowledge.

While there are certainly people who might be curious about their individual genetic life expectancy, there are no doubt others who would want to avoid that knowledge. What is at stake here is the possibility to resist against certain mechanisms of power. If people gain knowledge of their genetic makeup, they are then put in a position where new rituals of power can work on them by virtue of their knowledge. If they choose to stay ignorant instead, they can avoid those rituals working on their body. Likewise, people who are faced with the

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<sup>284</sup> Foucault, *Power/Knowledge*, 256.

<sup>285</sup> Foucault, *Power/Knowledge*, 257.

decision to be the subject of a particular discourse might instead choose to be the subject of a different discourse.

## 6. Conclusion

As my thesis has attempted to show, there is much to be gained from re-reading Foucault with respect to his conceptual blind spots regarding ignorance. In his analysis of power/knowledge, Foucault misses the connections between power and ignorance and treats ignorance merely as a native state. He also misses the power wielded by contemporary industries and the ignorance which is produced by them. To improve on his analysis, the concept of power/ignorance is needed. Foucauldian concepts, especially once taken further to encompass the dimension of ignorance, are in turn a useful tool when describing contemporary agnotological case studies. I want to briefly sum up my findings and sketch future ways in which the ideas presented here could be expanded.

As mentioned, the field of agnotology is not merely the study of the production of ignorance, but also the study of unmaking it. Since a deeper investigation into the latter was outside of the scope of this thesis, I briefly want to sketch what unmaking ignorance might look like under a Foucauldian lens. In a framework of power/ignorance, things are unfortunately more complex than simply calling attention to the fact that companies are engaged in agnogenesis. However, at the very least we can take steps to ensure that their strategies are less effective. First, we must recall the Foucauldian point that power also creates the framework in which resistance against it is possible. While there are many ways in which companies can use their power to create ignorance, there are also many ways to counteract them by spreading knowledge instead. The possibility of this endeavor depends on the exact way the web of power/ignorance is distributed.

For instance, we need to consider the micro-physics of power in the creation of dependent bodies: There is anti-biopower at work in many cases of actively constructed ignorance, particularly evident in the case of tobacco. Powerful lobbies are directly harming the bodies of subjects, making them docile to ends contrary to the traditional aims of state biopower. When it comes to climate change, we can again see the microphysics of power in the creation of docile consumers. Neoliberal governmentality is aimed at preserving a system which benefits from collective ignorance regarding market externalities. Meanwhile, government secrecy is arguably a more traditional case of ignorance. However, it is also a prime example of the way in which ignorance produces power, which in turn produces further ignorance. Far from being mere censorship, the system of classification can shift entire industries and areas of science. State agnotology should be emphasized as a productive rather than as a repressive application of power.

In order to unmake ignorance, it might also help to consider all of those questions in relation both to public intellectuals and to our individual roles as knowers. We need to change our thinking about what scientists and public intellectuals can and should communicate to the public. Considering the consequences of telling the truth also entails considering the consequences for ordinary people. To return to an earlier example, there are cases where merely knowing the truth about the catastrophic consequences of climate change are not sufficient as long as there is an ignorance about opportunities to change, or a complacency caused by the idea that it is too late anyway.

There are proposals to shift to scientific pluralism as a response to actively constructed ignorance. For instance, Martin Carrier identifies false advertising as a central component of agnotological efforts. By this, he refers to the way a study might be used, even though the study design should not permit such a use.<sup>286</sup> Carrier then argues for scientific pluralism as the way to avoid such maneuvers.<sup>287</sup> The key aspect of scientific pluralism is the idea that there are multiple styles of scientific reasoning. Importantly, scientific pluralism is itself not monolithic and can be defended on multiple levels, which has led some authors to speak of a “plurality of pluralisms”.<sup>288</sup> Scientific pluralism might also work against another agnogenetic maneuver, the framing of science as having a unified method centered on certainty. Nevertheless, I do not have the space to delve deeper into Carrier’s argument here.

A Foucauldian analysis is also helpful when looking at selectively chosen ignorance. We can see that there are several overlaps between agnotological investigations and Foucault’s work on discourse and *episteme*. Indeed, there is a conceptional richness to be found in Foucault’s earlier work which could elucidate the concepts used to describe radical shifts in our knowledge, especially in what is possible to know and in which ways we are remaining ignorant. Considering the different ways in which knowledge is made possible or impossible through *episteme* might allow us to articulate the radical kinds of ignorance in particular. It should be clear by now that we cannot escape ignorance. However, this does not mean that we do not have the capacity to redistribute where ignorance lies through a shift in research priorities. Furthermore, a central task for agnotologists to come will be to investigate lost realms. Looking at some of those lost realms under the framework of the

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<sup>286</sup> Carrier, “Agnotological Challenges,” 62.

<sup>287</sup> Carrier, “Agnotological Challenges,” 83.

<sup>288</sup> David Ludwig and Stéphanie Ruphy, “Scientific Pluralism,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman, Winter 2021 (Stanford: Metaphysics Research Lab, Stanford University, 2021), <https://plato.stanford.edu/entries/scientific-pluralism/>.

apparatus which caused them to disappear might be productive for uncovering the knowledge which was lost.

Since agnotology is of an interdisciplinary interest, one might ask at this point if it is possible to study selectively chosen ignorance empirically. An interesting point is raised by Jennifer L. Croissant, who argues for “a sociology of things which aren’t there”; in other words, a study of ignorance by looking at its (missing) effects, similar to how we can study black holes even though we do not directly observe them.<sup>289</sup> Unfortunately, going further into detail is not possible here, since this is after all a philosophical thesis and not a social scientific one. It is worth mentioning, however, that Foucault’s perspective on knowledge has been fruitful in empirical sociological research. It stands to reason, then, that using power/ignorance as a framework might be an option in this area too.

In cases which are traditionally labeled as virtuous ignorance, we can also apply a Foucauldian analysis. Some of the paradigmatic cases of virtuous ignorance can be analyzed as cases of resistance against bio-power. Biopower requires certain kinds of knowledge, and ignorance becomes a way to resist it. We can see this both on the side of scientists refusing to study knowledge involved in biopower, and in ordinary people refusing the knowledge necessary for rituals of power to work on their body. There are, of course, many thinkers who have considered a Foucauldian perspective in resistance, which I could not include in this thesis. There, power/ignorance might also be a productive concept.

While I believe that epistemology has made significant progress in deepening our grasp of knowledge, when it comes to understanding ignorance, philosophy still has a lot of its work cut out for it. Possibly, the best way forward is to understand the phenomena of knowledge and ignorance as part of a shared field. Kourany and Carrier argue that we might need to rethink the entire field of epistemology as agnoepistemology, to adequately deal with both knowledge and ignorance.<sup>290</sup> Acknowledging the deep connection between those topics seems like a helpful step in our attempts to understand and in turn influence them. Power/ignorance might be a useful concept for bringing such a field closer together.

Unfortunately, this work is more pressing than ever. With regards to issues like climate change, every year counts, and every moment lost to doubt will cause harm down the road. There has been a lot of discussion around the “anthropocene”, but perhaps the better term to refer to our status quo is the term “agnotocene”, a word which for Proctor

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<sup>289</sup> Jennifer L. Croissant, “Agnotology: Ignorance and Absence, or Towards a Sociology of Things That Aren’t There,” *Social Epistemology* 28, no. 1 (2014): 4–25, <https://doi.org/10.1080/02691728.2013.862880>.

<sup>290</sup> Kourany and Carrier, “Introducing the Issues,” 9.

encapsulates our “golden age of ignorance”.<sup>291</sup> The development of ignorance-production has improved vastly over the last few decades, and it is unlikely to slow down without resistance. There are countless of institutions following the footsteps of the tobacco industry. It is easy to believe that science as a place for the production of knowledge is in some sense ahistorical, a natural progression from more primitive times that it is here to stay. However, as Foucault’s work on the contingency of knowledge shows, this is a naïve view of the history of science and its possible future. Ultimately, it would be a mistake to think that science is too big to be affected by various agnotological strategies. As with any institution, it can be mistrusted, it can lose importance in dialogues about policy, and it can be left by the wayside. Agnogenesis takes its place when industry profits are threatened, and where government research stays hidden.

To conclude, Foucault has a lot to offer for agnotology once we have taken his concepts further. We can see this in a wide variety of cases, from actively constructed over selectively chosen to virtuous ignorance. Merely studying the figureheads of agnogenesis is not enough; we need to investigate the way ignorance works on a smaller scale. There are apparatuses of ignorance which keep knowledge hidden, and there are micro-physics of power/ignorance which work directly on the body. Under a framework of power/ignorance, we might be able to understand the production of ignorance better, which in turn might shed light on the process of unmaking ignorance.

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<sup>291</sup> Galison and Proctor, “Agnotology in Action,” 53.

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## Appendix

### Abstract

In philosophy of science and epistemology, ignorance is traditionally taken to be merely a native state. By contrast, the field of agnotology treats ignorance as something that is produced and transmitted by our choices, whether deliberate or unconscious. The works of Michel Foucault, who has long been an important source for the social dimension of knowledge, are barely present in the contemporary agnotological literature. While Foucault focuses extensively on the connection between power and knowledge, he does not give ignorance its due. The aim of this thesis is twofold: First, to read Foucault under an agnotological framework and develop the concept of “power/ignorance” in analogy to his concept of “power/knowledge”. Second, to apply this concept in agnotological case studies and to show that Foucauldian thought sheds new light on the role of ignorance in society. As a first step, I will discuss selected passages by Foucault to demonstrate that he lacks a sophisticated analysis of ignorance and the dynamics between power and ignorance. Based on this, I develop the concept of power/ignorance parallel to his concept of power/knowledge. In the following sections, I will discuss the concept of power/ignorance considering several paradigm cases in the agnotological literature: Actively constructed ignorance, selectively chosen ignorance, and virtuous ignorance. By doing so, I want to deepen the Foucauldian analysis and provide contemporary agnotology with a useful concept.

## Abstract in German

In der Wissenschaftsphilosophie und Epistemologie wird Ignoranz meist als Urzustand betrachtet, der nicht weiter erklärt werden muss. Das Feld der Agnotologie geht hingegen von der Annahme aus, dass Ignoranz oftmals durch bewusste oder unbewusste Entscheidungen produziert und verbreitet wird. Michel Foucault ist seit jeher ein wichtiger Denker für die soziale Dimension des Wissens. Gleichzeitig wird er in der agnotologischen Literatur kaum behandelt, weil er sich zwar mit der Verbindung von Macht und Wissen auseinandersetzt, das Thema Ignoranz aber weitgehend außen vorlässt. Ziel dieser Masterarbeit ist es, Foucault unter dem Gesichtspunkt der Agnotologie zu lesen und das Konzept der „Macht/Ignoranz“ parallel zu seinem Konzept von „Macht/Wissen“ zu entwickeln. Im ersten Schritt möchte ich mich mit ausgewählten Passagen von Foucault zum Thema Macht/Wissen auseinandersetzen, um aufzuzeigen, dass ihm eine tiefergehende Analyse der Ignoranz fehlt und er die Dynamik zwischen Macht und Ignoranz nicht hinreichend aufgreift. Aufgrund seiner fehlenden Diskussion der Beziehung zwischen Macht und Ignoranz werde ich das Konzept von Macht/Ignoranz einführen. In den folgenden Abschnitten werde ich mich unter dem Gesichtspunkt dieses Konzepts mit verschiedenen paradigmatischen Fallbeispielen aus der Agnotologie befassen: Ignoranz als aktives Konstrukt, als passive Wahl und als Tugend. Dadurch will ich einerseits die Foucaultsche Analyse vertiefen und andererseits die Agnotologie durch ebenjene Analyse bereichern.