
Foucault's *Milieu*

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ABSTRACT

This essay seeks to make a contribution to scholarship on the relation between Canguilhem and Foucault through the concept of *milieu*. It argues that Canguilhem's work on the *milieu* was inspired by Uexküll and became the eventual means by which Foucault was able to theorize biopower. For both Foucault and Canguilhem, culture is to be understood as an extension of biology, constituting a "semantic milieu." Though indebted to Canguilhem in this respect, Foucault's theorization of biopower breaks with his understanding of society. The essay exemplifies this via a discussion of regulation and cybernetics, where Canguilhem is found to oppose the very possibility of a cybernetic society and Foucault is said to allow for one via his notion of governmentality. While Canguilhem turns out to be committed to a more humanist ideal of free will, in his theorization of biopower and governmentality, Foucault turns out to be more interested in analyzing the way freedom is deployed in liberal societies as an instrument of control.

KEYWORDS Foucault, Canguilhem, milieu, cybernetics, governmentality

Introduction

It is very often the case that our attempt to understand the work of an influential thinker involves the enormous effort of coming to terms with the implications of a surprisingly small number of concepts. To comprehend what in Spinoza is meant by *natura naturans*, or in Leibniz what is meant by *monad*, is not to grasp a discreet idea, but is to succeed in having drawn together the threads of an entire philosophy. Pursuit of such understanding, however, requires that we pay careful attention not only to the words of the author but also to what surrounds and precedes them, because more often than not the task of philosophical authorship commences not with the outright invention of a new concept but with the exposure of an existing concept to new purposes. When a concept is introduced in the pages of a philosophical text it often arrives bearing the traces of a lineage that predates its appearance, without which comprehension is only partial—*natura naturans* isolated from its medieval use as a divine predicate, for instance, or the *monad* without calculus. This parallel history of the concept, or this record of other uses, joins the concept, often in indirect ways, to the broader world in which the philosopher lives and thinks, making any complete understanding of the word or phrase in question contingent upon an investigation into its non-philosophical lineage, which for one reason or another may remain unexpressed in the very pages that made it famous.

Many of the philosophical problems we encounter concerning our comprehension of concepts are the result of a failure to fully account for their history. As Ian Hacking has suggested, a concept “is made possible by a different arrangement of earlier ideas that have collapsed or exploded . . . [and] a philosophical problem is created by the incoherencies between the earlier state and the later one.” “[W]e gnaw at problems,” he continues, “because we do not understand that the source of the problem is the lack of coherence between the concept and that prior arrangement of ideas that made the concept possible” (37). Here I would like to investigate just such an arrangement regarding a concept which makes its philosophical debut in the pages of a thinker whose work has had an enormous influence on contemporary thought. The hypothesis I wish to propose is that the appearance of the term *gouvernementalité*, first mentioned in lectures Michel Foucault delivered during the second half of the 1970s, was motivated by two underappreciated influences—Georges Canguilhem’s conception of the biological *milieu* and the theory of regulation formulated by postwar cybernetics—which when brought into view offer some insight into how this relatively late shift in the evolution of the author’s research came to reconfigure the framework through

which he conceptualized power.

The Political Strategies of Life

Foucault's seminar at the *Collège de France* for the academic year 1977-78 was announced under the title "Security, Territory, Population," but even Foucault himself thought the title poorly chosen: "if I had wanted to give the lectures I am giving this year a more exact title," he remarks at the end of the fourth week, "I certainly would not have chosen 'security, territory, population.' What I would really like to undertake is something that I would call a history of 'governmentality'" (*Security* 144).

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The lectures begin with the theme of biopolitics, which had entered Foucault's lexicon the previous year, appearing both in the seminar he prepared for that year (*Society Must Be Defended*), and in the material he was concurrently gathering in preparation for the first volume of *The History of Sexuality*. Under the name *biopolitics* Foucault assembles his analysis of the procedures used to transform the basic biological elements of human life into political strategies. Starting in the eighteenth century and coinciding with the emergence of the modern state, aggregated features of human populations—the ratio of births to deaths, the rate of fertility, the measure of public health—become knowable through new analytic techniques associated with the human sciences, principally the advent of statistics, and will serve as the basis for predicting and thereby governing entire populations. "It is as though power, which used to have sovereignty as its modality or organizing schema, found itself unable to govern the economic and political body of a society that was undergoing both a demographic explosion and industrialization [as well as political liberalization]" (Foucault, *Society* 249). Confronted by this impasse, new procedures of control emerged, the elements of which were neither the sovereign and his authority, nor individuals and their behaviors, but the population and its fitness—state power was "addressed to a multiplicity of men, not to the extent that they are nothing more than their individual bodies, but to the extent that they form, on the contrary, a global mass . . . directed not at man-as-body but at man-as-species" (242-43). Whereas the aim of sovereign authority is to produce obedience and channel it through a legal order, the purpose of government, by contrast, is to maintain order by managing the elements of the things being governed. What we find is a movement away from laws applied to juridical subjects and toward policies that target specific material situations so as to shape the context in which the aggregated decisions of a population take place, thereby harnessing choice itself as an instrument of control.

Although the word *biopolitics* is dropped from the seminar after the opening week, the general problem of the population remains and figures heavily in the subsequent lectures, first in conjunction with what Foucault calls “security,” and then, beginning with the fourth lecture, as part of the history of “the art of government,” out of which will emerge the idea of “governmentality.” The results of Foucault’s research will show that the problem of government is in fact multiple problems, concerning practices that range far beyond the standard operations of the state: the government of the soul, for instance, as described in the pastoral doctrine of the Church, the government of trade and commerce that gives rise to economics and political economy, and eventually the government of the self, which will guide Foucault’s final work on ethics and self-care. Together with biopolitics, the idea of governmentality will assume a central position in Foucault’s research from the late 1970s onward, and it is during the seminar of 1977-78 that its importance is first made clear. In addition to the concept of governmentality, however, we find among Foucault’s remarks, particularly in the lecture delivered during the seminar’s first week, the repeated use of another word which, although not included among the more familiar terminology of Foucault’s technical vocabulary, appears with such persistence that it deserves our attention. That word is *milieu*, and I would like to emphasize its use because I believe it is connected in important ways to the manner in which Foucault understood governmentality.

Milieu

There can be little doubt that the idea of the *milieu* was on Foucault’s mind on the day he began his seminar—it is mentioned twenty-four times in that first lecture—but in order to measure its significance it is necessary to consider the meaning it had for one of Foucault’s mentors, Georges Canguilhem, for whom the term played a significant role. Canguilhem lectured for many years at the Sorbonne, succeeding Gaston Bachelard as the director of the *Institut d’histoire des sciences*, and would serve as the sponsor of Foucault’s doctoral thesis. Given their longstanding relationship and ongoing dialogue it is not surprising that Foucault would adopt a decisive technical term from Canguilhem and deploy it in the service of his own analysis. Yet, with the exception of *The History of Madness*, a text originally written for his doctoral degree, at no other point in Foucault’s research does the notion of *milieu* figure so prominently.¹ Why then does the

¹ Foucault’s only other sustained use of the concept of *milieu* appears quite early in his career, in the pages of *Histoire de la folie*, a project that was loosely overseen by Canguilhem. In the context of his study of madness, however, the term is not yet associated with the manifestation of power, although the text does indicate

concept reemerge at this juncture? Why does the idea of population, together with the manifestation of power associated with it, invite a return to the idea of the *milieu*?

To answer this question, it is helpful to turn our attention to Canguilhem's essay "The Living and Its Milieu," which was originally delivered as a lecture at the *Collège philosophique* in Paris in 1946 and would appear in print several years later as a chapter in *Knowledge of Life*. Here Canguilhem presents a modern genealogy of the concept of *milieu*, beginning with Newtonian mechanics where *milieu* refers to the medium through which action takes place, leading eventually to its entry, by way of Lamarck, into evolutionary biology where it refers to the environment in which an organism lives. At the center of Canguilhem's understanding of the biological meaning of *milieu* is the basic assumption that life is organized normatively in the sense that organisms encounter the world not as a set of facts but as a set of values. Each organism, by means of the modes of perception available to it, continually selects and excludes environmental stimuli in accordance with preferences that align with its survival. "Even for an amoeba," he writes, "living means preference and exclusion" (*Normal* 136). For this reason, biology is alone among the sciences in accommodating the notion of pathology. But normality and pathology are not located in the organism itself. They appear instead in the relationship between the organism and its *milieu*, and it is precisely the state of this relationship that is constitutive of what we call life. "A living being is normal in any given environment [*milieu*] insofar as it is the morphological and functional solution found by life as a response to the demands of the environment [*milieu*]" (144). For this reason, there is no biological fact which is normal or pathological on its own. "Taken separately, the living being and his environment [*milieu*] are not normal: it is their relationship that makes them such" (143). Or,

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technical familiarity with the term. He speaks of the emergence of the term *milieu* in the eighteenth century against the backdrop of the general orderliness of the universe. "From the macrocosm, taken as the place where all mechanisms were complicitous, and as the general concept of their laws, something resembling that which the nineteenth century was later to term a 'milieu' starts to emerge" (*History* 365). At the time, differing rates of madness and suicide were often explained geographically. Madness in England, for instance, was thought to be more frequent than elsewhere, suggesting that it was the toll taken on the human psyche by the political liberty found there. We read, for instance, that "[f]reedom of conscience brought more dangers than despotism or authoritarian rule," for, having no restrictions, "anyone can preach to anyone else who wants to listen,' and the long-term effects of hearing so many different opinions are that 'minds are tormented in their search for the truth'" (366). Thus, "[m]adness, and all its powers that were multiplied by the ages, lay not in man but in the milieu that he inhabited" (376). Just as climate and terrain served the biological sciences as evidence for explaining the diversity of species, it is now the socio-political climate that is invoked to explain mental disorders. Speaking in general terms, Foucault writes of the eighteenth century that "civilization was a milieu favourable to the development of madness" (369)—which leads him to conclude that "[t]he late eighteenth century began to identify the possibility of madness with the constitution of a milieu" (373).

as Foucault himself puts it, in his introduction to Canguilhem's *The Normal and the Pathological*, "life is what is capable of error" (Introduction 22).²

Important in this regard is the fact that, in contrast to its English usage, the French meaning of *milieu* does not merely denote what one commonly calls an environment, but refers also to the literal state of being "in the middle" (*mi-lieu*). Canguilhem accentuates this meaning, but not in the sense of an organism positioned at the center of a preexisting set of conditions as, for instance, when one speaks of being located *within* an environment. His point instead is that organisms reside at the center of their environments insofar as they participate in the constitution of the worlds they inhabit through the activity of perception. It is in this constitutive sense that a *milieu* refers to being "in the middle." Life is not cast into a pre-existing world to which it is then passively subjected. Instead, the organism actively composes its *milieu* by exposing to its awareness, through its unique assortment of sensitivities, elements of the world that accord with its vital interests, positing its own norms in response to the material conditions within which it must survive. In this way, "[t]he relation between the living and the milieu establishes itself as a debate (*Auseinandersetzung*), to which the living brings its own proper norms of appreciating situations, both dominating the milieu and accommodating itself to it" (Canguilhem, *Knowledge* 113).

Organisms construct environments by constraining the world. This is accomplished not only through behaviors that alter the material world to suit particular needs, as when twigs are bent into a nest, but through the basic fact of perception itself, i.e., the principal means whereby organisms impose limiting conditions on the world such that the result of these constraints, governed by what it is possible for an organism to apprehend, *is* an environment. That which does not appear in perception does not appear in the environment; moreover, since the world presents each organism with an overabundance of information in the form of potential stimuli, the most important function of perception is to selectively block information so that processes that lead to action are not overwhelmed. To perceive, in other words, is to edit. "In this sense," Canguilhem writes, "the milieu on which the organism depends is structured, organized, by the organism itself" (*Knowledge* 118). Or, as he says elsewhere, "the environment [*milieu*] of the living being is also the work of the living being" (*Normal* 178-79).

Behind this notion of a perceiver-dependent environment stands the influence of Jakob von Uexküll, whose research into what would come to be called "biose-

² He continues: "The opposition of true and false, the values we attribute to both, the effects of power that different societies and different institutions link to this division—even all this is perhaps only the latest response to this possibility of error, which is intrinsic to life" (22).

miotics” Canguilhem follows quite closely.³ For Uexküll, sensory information is apprehended by the organism in the form of signs—“carriers of significance” (*Bedeutungsträger*)—and because sensory information is acquired subjectively for each organism, the “environment forms a self-enclosed unit, which is governed in all its parts by its meaning for the subject” (Uexküll, *Foray* 144). Viewed in this fashion, the boundary between organism and world softens, leaving in its place a reciprocal, but ultimately closed, relation between the organism and the meaningful world sensed by it—to which Uexküll famously attaches the name *Umwelt*. An *Umwelt* is not a place; it is an assemblage of signals which the brain interprets through an inference process, comparing new perceptions to prior expectations and beliefs about the world, irrespective of whether those inferences align precisely with an objective state. Although the world and an organism’s *Umwelt* co-exist and at times even overlap, they never entirely coincide. “It is for this reason that, within what appears to man as a single milieu, various living beings carve out their specific and singular milieus in incomparable ways” (Canguilhem, *Birth* 118). For Canguilhem, the principal task of biology, which is to understand life, is possible only if one accepts that the senses are laden with subjective meaning for the living being. Although the subjective stance of the organism’s relationship to the world generates illusions and errors regarding the objective characteristics of that world, from the biological perspective these subjective states are the essence of life and comprise the truth of what it means to be living. “From the biological and psychological point of view, a sense is an appreciation of values in relation to a need. And for the one who experiences and lives it, a need is an irreducible, and thereby absolute, system of reference” (120).

Although distinct, all environments share the supremely important characteristic of being well-ordered and therefore navigable. It matters little with respect to survival whether the model of reality generated by perception is faithful to the world in any objective sense. What is vital for the organism is not veracity, but navigation. Uexküll’s well-known description of the limited perceptual world of the tick, introduced in his 1934 study, *A Foray into the Worlds of Animals and Humans*, serves as a paradigmatic case, demonstrating the biological utility of a restricted (“impoverished”) sensual world. “The whole rich world surrounding

³ Uexküll argues that “[a]ccording to the physicist, there is only one real world; and this is not the world of appearance, but the world having its own absolute laws, which are independent of all subjective appearance. . . . The biologist, on the other hand, maintains that there are as many worlds as there are subjects, and that all these worlds are worlds of appearance, which are intelligible only in connection with the subjects” (*Theoretical Biology* 70). From this standpoint, it might even be possible to claim that there are in fact only two disciplines—physics and biology—the difference between them strictly determined by the presence or absence of an environment.

the tick is constricted and transformed into an impoverished structure that, in essence, consists only of three receptor cues, three effective marks [the odor of butyric acid emanating from mammals, the sensation of temperature that guides it toward the skin, and contact with the skin itself]—the tick’s *Umwelt*. However, the very poverty of this world guarantees the unfailing certainty of her actions, and certainty,” he concludes, “is more important than riches” (*Foray* 51).⁴

The Semantic *Milieu*

For both Canguilhem and Uexküll, meaning is intrinsic to biology. Canguilhem insists on this, claiming that any biology that “would eliminate from its domain every consideration of meaning” (*Knowledge* 28) is strictly inadequate, while for Uexküll “[t]he question as to meaning must therefore have priority in all living beings” (*Foray* 151). Although essential to all organisms, the biological implications of meaning are of particular significance when we are considering the human being. Though the perceptual environment of the human is constituted in a manner similar to that of the animal, the human organism exhibits an important difference concerning what we might call *semantic extension*: the capacity of human beings to extend meaning linguistically, thereby opening for our species a different sort of perceptual terrain. I refer here to the intersubjective *milieu* of shared narrative fictions composed of ideas and beliefs mutually apprehended by a set of human minds as meaningful—as carriers of significance.

Like other living beings, humans reflexively assign values in the course of interacting with their surroundings, but unlike other species humans do so linguistically, granting humans an enhanced capacity to fashion intersubjective environments together with the various ways of living that correspond to them, the aggregation of which we call culture. “Within a human milieu,” Canguilhem writes, “man is obviously subjected to a kind of determinism, but this is the

⁴ Translation modified. An impoverished world is a world of classification, a world in which a vast repository of facts has been bundled together in order to be grasped. An emergent feature of this process is the appearance of concepts, or what Henri Bergson refers to more broadly as *generalization*: “[E]very living being, perhaps even every organ, every tissue of a living being generalizes, I mean classifies, since it knows how to gather, in the environment [*milieu*] in which it lies, from the most widely differing substances or objects, the parts or elements which can satisfy this or that one of its needs; the rest it disregards [*il néglige le reste*]. Therefore it isolates the characteristic which interests it, going straight to a common property; in other words, it classifies, and consequently abstracts and generalizes. Doubtless, in almost all cases and probably in all other animals except man, abstraction and generalization are actually experienced and not thought” (39). At their most basic level, concepts are artefacts of perception. Because perception naturally generalizes, concepts arise from the relationship that an organism has with its environment. They emerge from perceptions, but also feed back into perceptions, framing awareness and materially transforming what one perceives and finds meaningful.

determinism of artificial creations, from which the spirit of invention that brought them into existence has been alienated" (*Knowledge* 109). Although they are the product of human invention, semantic environments become facts of the world once their artifice has been concealed and every human must initially submit to the influence of these cultural domains.

The imagined realities and social institutions of the human species—what Foucault will call “transactional realities” (*réalités de transaction*) (*Birth* 297)—constitute semantic environments no less habitable than material environments. Brought into existence through a process of constraint—in this case, through culturally shared beliefs that limit what it is possible for a given community to semantically perceive, i.e., to think or embrace as true—these fictional realities are fundamental elements of human biology. Linguistic narratives, whether religious, political, or economic, constrain what human populations understand the world to be at a given historical moment, and expressed in this way it is not difficult to see how Foucault’s historical investigations might be understood as attempts to chronicle the socio-political effects of these semantic domains over time and the values that animate them, to which the term *episteme* properly applies.

Put simply, biology does not stop at the threshold of culture. Although less stable than perceptual environments fixed by organs of sense, semantic *milieux* are no less biological, and precisely because of their instability the semantic *milieu* has bequeathed to human existence its extreme cultural variety, the fluctuations of which we call history. The socio-political dynamics of human history are a subset of human biology, and the concept of *milieu* seems to have assisted Foucault in reaching this insight, the result of which was the introduction of biological vocabulary into a discourse traditionally dominated by the language of culture and politics.

The Integration of Social and Biological Norms

Of particular significance for Foucault is the way the idea of the *milieu* is joined to the problem of security. Setting security in contrast to both sovereign power and disciplinary power, he writes:

To summarize all this, let’s say then that sovereignty capitalizes a territory, raising the major problem of the seat of government, whereas discipline structures a space and addresses the essential problem of a hierarchical and functional distribution of elements, and security will try to plan a milieu in terms of events or series of events or possible elements, of series that will

have to be regulated within a multivalent and transformable framework.
(*Security* 20)

Stepping beyond the scope of Canguilhem's analysis, Foucault deploys the *milieu* in the service of understanding the problem of circulation within human communities, doing so under the heading of security. Although the word *milieu* does not appear in the archival texts attributed to town planners and architects of the eighteenth century, the set of problems which the notion of *milieu* will come to name were nonetheless present in their attempts to modify and secure urban space. "The apparatuses of security," Foucault insists, "work, fabricate, organize, and plan a milieu even before the notion was formed and isolated" (*Security* 36). Instead of affecting individuals as legal subjects, as we find with sovereign power, and instead of affecting them as pliable bodies, as in discipline, through the *milieu*, individuals are affected insofar as they belong to a population, biologically "bound to the materiality within which they live" (37). "What one tries to reach through this milieu," he says, "is precisely the conjunction of a series of events produced by these individuals, populations, and groups, and *quasi-natural* events which occur around them" (21; emphasis added).

Through the idea of a population, taken as a single assemblage, the organic nature of the human species comes into contact with its semantic nature, causing the boundary between the natural and the artificial to fade. "It seems to me," Foucault writes, reflecting on this merging of domains, "that with this technical problem posed by the town [the primary site of population] we see the sudden emergence of the problem of the 'naturalness' of the human species within an artificial milieu" (*Security* 21-22). Systems of belief, suspended within populations, constitute one of the principal habitats of human life, and the expression of these beliefs generates power relationships that Foucault's historical research seeks to describe. "[A]rtifice functions as a nature in relation to a population," he tells us, once again highlighting the natural, or *quasi-natural*, quality of artifice, which, "while being woven from social and political relations, also functions as a species" (22). By drawing together the social and the biological Foucault will conceive of a new way to conceptualize power, which is why it is no coincidence that immediately following the passages cited above, Foucault deploys a term which will come to signal in his own work and beyond precisely this convergence of biological reality with the artifice of political power: "what we could call bio-politics, bio-power" (22).

What I am suggesting, then, is that biopolitics implies more than techniques for controlling human behavior at the level of the population. It signals in Foucault's

work something more fundamental than this: a dismantling of the conceptual boundary that stands between biology and politics. Perhaps even the collapse of politics into biology. But at any rate, the introduction of an ontological continuum between them. Under the name *biopolitics*, power comes to be understood as a type of *milieu*: *something one simultaneously inhabits and constitutes, a medium in which one lives and by which one is constrained*. But since socio-historical environments are not bequeathed to our species by sensory organs alone, not only do we retain a capacity to transform them, but social advantages within these realities are never evenly distributed across the population that constitutes them as they are, for instance, for a species whose members all see or hear or feel in the same way. Individuals located on the fringe of these socio-historical environments—those whose survival is jeopardized every time a particular epistemic constraint, in relation to which one finds oneself disadvantaged, runs up against the biological needs of the body—are also those who are disproportionately exposed to the lethal effects of power. Through the analysis of power, what one tries to take hold of, then, are the asymmetrical effects of these shared epistemic realities, the unequal set of artificial phenomena that “function as nature” in relation to a given population that are, to varying degrees, both its source and its target.

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Although not willing to go as far as Foucault in integrating social and biological norms, Canguilhem did open the door to such thinking. In a passage from “New Reflections on the Normal and the Pathological,” where he discusses the psychosomatic nature of certain diseases (the fact, for instance, that blood pressure has been found to vary by culture), his wording points in the direction of investigations concerned with the constitution of broader social norms. “The form and functions of the human body,” he writes, “are the expression not only of conditions imposed on life by the environment but also of socially adopted modes of living in the environment” (*Normal* 269). And fifteen years earlier, in an essay published in *Knowledge of Life*, he also discusses the biological implications of social norms:

Indeed, it should not be forgotten that, in human conditions of life, social norms of custom are substituted for biological norms of practice. . . . [T]he problem of the pathological in man cannot remain strictly biological, for human activity, work, and culture have the immediate effect of constantly altering the milieu of human life. The history proper to man modifies problems. In a sense, there is no natural selection in the human species, to the extent that man can create new milieus instead of passively submitting to changes in the old ones. (128)

All of this sets the stage for the work undertaken by Foucault.

Human beings are situated “in the middle” of conceptual environments precisely because human semantic extension constitutes these environments, and what it is possible to do, or be, or think in these spaces is, therefore, not principally the result of a particular set of decisions or actions, but the effect of a *milieu* through which such decisions or actions are experienced as intelligible.⁵ But it is not enough to conceive of power as an extension of the biological concept of *milieu*; one must also be able to determine how the dynamics of power operate in such spaces and provide a means by which it is possible to accurately describe its effects. One must, in other words, explain how power functions in a *milieu*.⁶ Foucault provides an answer to this question and presents it under the name *governmentality*.

The Paradigm of Security

Recall that when Foucault introduces the concept of *milieu* he does so in the context of a discussion of security. But what is security? To answer this question, two things must be kept in mind. First, security is not the same thing as the elimination of risk, a permanent state of affairs devoid of danger, but is instead an ongoing process that has as its aim the overall minimization of risk measured across an entire population over time. And second, security is not the result of something imposed from the outside, a defensive perimeter, for instance, or the enactment of a set of laws designed to block certain behavior, but arises instead from the internal conditions presented by a given problem itself. As Foucault

⁵ The phenomenology of technology tells us that there is a special class of artifacts, including eyeglasses, canes, telescopes, etc., that are not normally perceived directly or acted upon as separate objects, but are instead used as means through which the world is experienced and acted on. Glasses, for instance, are not normally encountered by the wearer as objects within the environment but are instead means through which the environment is perceived. This special manner of utilizing objects Merleau-Ponty first described as “embodiment relations,” i.e., forms of use whereby artifacts are experienced as means through which the environment is encountered. Natural perception functions in a similar way, as long as we recognize that there is no objective environment that precedes the activity of perception itself. The problem with theories of mediation is that there is a tendency to presuppose the relative stability of both the perceiver as subject and the environment as object, *between* which stands the mediating technology.

⁶ When we read in Canguilhem that health corresponds to a functional solution found by life as a response to the demands of the environment and is therefore not an objective state, it is possible to detect something similar to the manner in which Foucault understands power. Power, like health, is relational, composed of the conditions that make certain human behaviors successful relative to a given historical context. Observed from this perspective, power might be understood as a modality of health, i.e., a functional solution found by life as a response to the demands of the social environment, the effects of which take on the epistemic status of normalcy, which is to say, the status of truth or knowledge. Not unlike health, power is a way of approaching the question of life.

explains, “These mechanisms [of security] do not tend to a nullification of phenomenon in the form of the prohibition ‘you will not do this’ . . . but in the form of a progressive self-cancellation of phenomenon by the phenomenon themselves” (*Security* 66). What defines security is the careful management of internal relations such that, despite external disturbances, the system tends over time to return to its initial conditions.

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By way of explanation, Foucault draws an analogy between security and the inoculation practices of the eighteenth century. In order to manage the spread of smallpox, vaccinations were developed to train the human immune system to recognize and combat pathogens by exposing the body to weakened antigens of the very virus that caused the disease. Rather than exert control from the outside as one would, for instance, by prescribing medicine, the method of vaccination seeks to manage the internal elements of a given reality, seeking not to cure the patient who is ill, but to prevent the outbreak of disease in advance by proactively exposing an entire population to the disease in a controlled manner. From the point of view of security, then, the survival of a population depends upon the control of variables that are not susceptible to the imposition of an external order. The nature of a population is, after all, not a phenomenon that can be entirely controlled by decree.

This insight, that command is limited by the nature of the population it targets, was first observed by François Quesnay and the economists of the eighteenth century who sought solutions to the persistent problem of food shortage. Quesnay, together with members of the Physiocrats who developed under his leadership, sought an approach to the problem of famine that would succeed where the economic regulations of mercantilism had failed. In doing so they became the first to identify security as the central concern of government. In economic terms, scarcity begins not with poor harvests, but with the general response to food shortages in the context of limits set by market conditions. Scarcity, in other words, is not the shortage of food itself but the entire process whereby poor harvests, which tend to raise the price of grain, incline people to hoard, thereby intensifying scarcity until conditions reach a point of famine from which it is no longer possible to recover. Instead of trying to prevent the onset of famine through price controls and other market interventions, as was common under mercantilism, the Physiocrats would allow scarcity and price increases to happen and then govern them once they occurred. They would attempt to “unblock” the system by ending export controls and allowing trade to pass freely across international borders. By doing so they would, in effect, end scarcity by *not* seeking to prevent it. As Foucault puts it, “scarcity will be nullified on the basis of the reality

of the movement that leads to scarcity” (*Security* 40). Once farmers realize that within a few months grain imports will bring prices down again, those who hoard in order to sell when prices reach their peak will instead sell early, earning a profit before foreign grain imports return prices to normal, thereby preventing the situation from racing out of control. The entire process, built on the principle of economic circulation described by Quesnay in his *Tableau économique*, enacts the essential dynamic of security: “without prohibiting or prescribing” security seeks to “respond to a reality in such a way that this response cancels out the reality to which it responds” (Foucault, *Security* 47).

Responding to crisis in this manner is not, however, without casualties. Although food shortage at the level of the population is reduced, this does not mean that individuals will not suffer and even die. According to Quesnay, some *must* be allowed to die so that the population as a whole might live. “[B]y letting these people die of hunger one will be able to make scarcity a chimera and prevent it occurring in this massive form of the scourge typical of the previous systems.” Thus, we find that the scarcity event is split. “The scarcity-scourge disappears, but scarcity that causes the death of individuals not only does not disappear, it must not disappear” (Foucault, *Security* 42). In order for the system to return to its initial conditions, in order for food supplies to return to normal levels, a percentage of the population—inevitably composed of those who are already disadvantaged—is exposed to the effects of the shortage and is ultimately allowed to die. This technique, which takes security as its paradigm, will over time replace the juridical practices of sovereignty as the principal instrument of state power, marking a historical shift that Foucault will famously describe as a transition from the ancient right of sovereignty, “to make die or to let live” (*faire mourir ou laisser vivre*), to the biopolitical axiom of modern government, “to make live and to let die” (*faire vivre et laisser mourir*). What occurs in the name of security, then, is an enormous transfer of control from the sovereign decision to the internal configuration of the social system itself, from the judicial order and its authority to the social *milieu* and its elements.

During the final lecture of his 1977-78 seminar Foucault describes this new governmental manifestation of power, and his remarks are worth quoting at length:

What does it mean to say that the facts of population and economic processes are subject to natural processes? It means, of course, that not only will there be no justification, but also quite simply there will be no interest in trying to impose regulatory systems of injunctions, imperatives, and interdictions on these processes. The basic principle of the state’s role, and so of the form of

governmentality henceforth prescribed for it, will be to respect these natural processes, or at any rate to take them into account, get them to work, or to work with them. . . . It will be necessary to arouse, to facilitate, and to *laisser faire*, in other words to manage and no longer to control through rules and regulations. The essential objective of this management will be not so much to prevent things as to ensure that the necessary and natural regulations work, or even to create regulations that enable natural regulations to work. Natural phenomena will have to be framed in such a way that they do not veer off course, or in such a way that clumsy, arbitrary, and blind intervention does not make them veer off course. That is to say, it will be necessary to set up mechanisms of security. The fundamental objective of governmentality will be mechanisms of security, or, let's say, it will be state intervention with the essential function of ensuring the security. (*Security* 451)

This turn to security represents a theoretical move beyond the juridical problem of rights toward a system of internal regulation that seeks over time to obviate the need for command, supplanting judicial oversight with governmental strategies that incorporate freedom itself into the mechanisms of control.

This explains, finally, the insertion of freedom within governmentality, not only as the right of individuals legitimately opposed to the power, usurpations, and abuses of the sovereign or the government, but as an element that has become indispensable to governmentality itself. Henceforth, a condition of governing well is that freedom, or certain forms of freedom, are really respected. Failing to respect freedom is not only an abuse of rights with regard to the law, it is above all ignorance of how to govern properly. (*Security* 451)

Despite the broad scope of Foucault's historical survey of governmental technique, which looks not only at the operations of the modern bureaucratic state but also at much older occurrences, including the role of government in the Christian pastorate, left unmentioned is the lineage that joins governmentality to a far more recent set of uses which appear under the name *cybernetics*. This association, which might at first seem peculiar, comes into focus when we recall that twentieth-century cybernetics was originally conceived not as the study of technological devices per se, but as the study of self-regulating systems in general. Starting in the early 1940s, control systems were recognized to be a common problem across many disciplines. Principles of control, like homeostasis, apply equally to machinery and to biological organisms, as well as to political and

economic systems. In each case, we encounter a complex system that achieves stability due to the way it is internally organized. In the remaining pages I will suggest, however briefly, that in order to fully appreciate the meaning Foucault gives to governmentality it is necessary to take cybernetics into account, and that to do so it is necessary to go beyond the scope of his writings.

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Government as Feedback

When Stafford Beer, in a short video from the early 1970s, discusses the operation of a steam governor in order to illustrate the elementary principles of cybernetics, he does so in a manner that should by now be familiar. “The important thing to realize about systems,” Beer explains, “is how they are controlled, and we must get rid of any notion straightaway that control is something imposed on the system from outside. It has to be built into it” (Beer). Invented by James Watt in 1788 to regulate his steam engine, the steam governor was designed to automatically bring runaway variables back under control by harnessing the very processes that caused them to race out of control to begin with. Its operation was simple. As the speed of the engine increased, the spin of an attached rod increased as well, lifting two metal flyballs which were connected to a fuel valve, which by being raised gradually reduced the fuel supply, thereby causing the engine to slow down. By engineering a control mechanism into the design of the engine itself, which was capable of responding to feedback automatically, no external oversight was required, and as long as the system was functioning properly, not only would the pressure in the engine’s chamber not result in an explosion, *it could not*.

What we find in this simple mechanical device is a concise paradigm of power when power functions in the absence of command. It is an autonomous system in which the place of the sovereign is rendered superfluous because the elements of the system are arranged in such a way that control is part of the condition for the existence of the system from the start. The governor is more than a technical device. It is a paradigm of self-regulation that can be extended to incorporate a wide variety of natural and human systems—as we saw in the strategy employed by Quesnay in his attempt to control scarcity—and epitomizes the general form of regulation Foucault calls security. The structural similarities between the steam governor and security are not incidental, and it is, of course, also not by chance that Watt’s device is termed a “governor.” Although it is not possible to know if Foucault had the steam governor in mind when he settled on the word *gouvernementalité*, it seems very unlikely that he would have been unaware of the similarities involved, especially since Watt’s device is so emblematic of the

processes he sought to describe. It also seems unlikely that Foucault would have been unaware of the lineage that joins the words *governor* and *government* to the term *cybernetics*.

In his 1948 book, *Cybernetics: Or Control and Communication in the Animal and the Machine*, Norbert Wiener recounts the origins of the discipline he is credited with founding: “We have decided to call the entire field of control and communication theory, whether in the machine or in the animal, by the name of Cybernetics, which we form from the Greek κυβερνήτης [*kybernetes*] or steersman” (11-12). The word *kybernetes*, from the verb *kybernao*, meaning “to steer,” refers to the helmsman, the pilot who operates the tiller and directs the vessel to its destination regardless of changing sea and weather conditions, constantly adjusting its direction in response to feedback—making it an intelligent choice for a discipline dedicated to the study of control—but *kybernetes* was also commonly used in antiquity to describe the art of governing, as we find in *The Republic* (488a–489d) where Plato refers to the so-called “ship of state.”⁷ This association between navigation and governance is carried into Latin, where *kybernetes* appears as the cognate *governator*, which will eventually serve as the basis for the English *governor*. In this way the word *kybernetes* anchors the etymological lineages of both cybernetics and government, identifying them both with the art of control and suggesting a potential for their overlap.

In 1843, French physicists André-Marie Ampère, drawing inspiration from Plato, suggests in his *Essai sur la philosophie des sciences* the use of *la cybérnétique* to name a future science of government, which would study operations of the state that rely on manipulating the elements of political economy. The head of government, he writes, anticipating Foucault, must [u]nceasingly . . . choose between various measures what would be most suitable for achieving the goal; and it is only by means of an in-depth and comparative study of various elements, afforded to him by his knowledge of the nation which he governs—its character, its mores, its opinions, its history, its religion, its means of existence and prosperity, its organization and its laws—that he is able to make general rules of conduct to guide him in each particular case” (140-41).⁸ Taken collectively, Ampère continues, these sciences of the state “I call *Cybernetics*, from the word *kubernetike*, which means in a restricted sense the art of governing a vessel, but which had even among the Greeks the broader meaning of the art of governing in general” (140-41).⁹ The means by which such cybernetic regulation is made available to

⁷ See also *Alcibiades* (134e-135b).

⁸ Translation my own.

⁹ Translation my own.

the state follows from techniques that permit the state to measure the effects that various policies have on its population over time. In order to achieve this level of awareness, a bureaucracy must be fashioned for the purpose of collecting data and generating statistics. Not unlike the perceptual cues of the steersman, this data is fed back into the regulatory system and compared with the goals that are sought, thereby enabling course adjustments. In this way, a new style of governance is introduced, which seeks to target the *effects* of problems rather than transform its causes.

Although Foucault makes no explicit reference to cybernetics, given the strong correlations that join it to the history of government, as well as the fact that the ideas of modern cybernetics were in circulation at the time he was lecturing on governmentality,¹⁰ offering sophisticated ways of understanding control systems that his own analysis of power would come to reflect, it is reasonable to suspect that Foucault coined the word *gouvernementalité* knowing that it shares a common root with cybernetics. But even if Foucault was somehow not aware of these associations, it is certainly the case that Canguilhem was—having addressed the topic both directly and under the more general heading of “regulation.”

Regulation and Its Dangers

In 1955, Canguilhem published “The Problem of Regulation in the Organism and in Society,” which was originally delivered before a general audience at the *Alliance Israélite Universelle*. In some ways an extension of the investigation undertaken in “The Living and Its Milieu,” which was published only three years earlier, “The Problem of Regulation” not only concerns the problem of how organisms regulate themselves in relation to their environments, but proceeds to address what Canguilhem refers to as the “very old, yet still unresolved problem . . . of the relations between the life of the organism and the life of a society” (*Writings* 67). The essay begins with the observation that although society has frequently been compared to an organism, these comparisons are made in error because unlike a society, about which we continually debate its ideal state, “[a]n organism is a mode of being that is exceptional in that there is, strictly speaking, no difference between its existence and its ideal” (70). That which is proper to an organism is the fact of its living, made possible by the existence of biological mechanisms that permit self-regulation, “whose effect consists precisely in the maintenance of this integrity, in the persistence of the organism as a whole”

¹⁰ See Hayles; Dupuy.

(72). By the early twentieth century, physiologists such as Claude Bernard, who first introduced the idea of regulation to physiology, and Walter B. Cannon, who was instrumental in developing the idea of homeostasis, were fully aware that the internal control processes of organisms were cybernetic in nature. Canguilhem basically agrees with this conclusion. “By the sole fact of its existence,” Canguilhem writes, “the organism resolves on its own a kind of contradiction, the contradiction between stability and modification. . . . [T]here is in every organism an inborn moderation, an inborn control, an inborn equilibrium . . . known by the scientific term ‘homeostasis’” (72).

To illustrate this, Canguilhem offers the example of the warm-blooded animal. Whereas for cold-blooded animals there is no system to regulate temperature, making them “slaves of the temperature of the milieu” (*Writings* 72), the warm-blooded animal “has a system of regulation that allows it to compensate for differences between its temperature and that of the milieu, to maintain a constant temperature independent of the milieu’s prompts” (72). Here the system of control and the *milieu* that continually threatens to perturb it must be understood as aspects of the same system. As we have seen, organism and environment are mutually constitutive, and what we call life exists only on the basis of the entire system’s ability to maintain a homeostatic state, bound by certain limits. “An organism comprises, by the sole fact that it is an organism, a system of mechanisms of correction and compensation for the divergences and injuries to which it is subjected by the world in which it lives—by its milieu, a milieu vis-à-vis which these mechanisms of regulation allow the organism to lead a relatively independent existence” (72).¹¹

In contrast to many of his predecessors and contemporaries, including Cannon himself, who argued that it is possible to locate in society examples of mechanisms of regulation that tend to compensate for disorder (“it is noteworthy,” Cannon writes, “that the body politic itself exhibits some indications of crude automatic stabilizing processes” [311]), for Canguilhem, a society does not share this regulatory capacity. The organism is biologically bound to a set of outcomes linked to

¹¹ The means of correction and compensation exhibited by life function normatively, and this normative relation to an environment corresponds to what Canguilhem understands as health. Health in the biological domain is a state of normalcy relative to an environment insofar as it corresponds to a functional solution found by life as a response to the demands of the environment (“Health is a margin of tolerance for the inconstancies of the environment [*milieu*]” [Canguilhem, *Normal* 197]), and is therefore not an objective background state away from which illness falls. Health is instead “a set of securities and assurances (what the Germans call *Sicherungen*), securities in the present, assurances for the future.” To which he adds, drawing an analogy with the buffering effects of a flywheel, “Health is a regulatory flywheel [*volant régulateur*] of the possibilities of reaction” (198).

survival, but the goals of society are not fixed by nature. They are variable, modulating in response to decision and struggle. Whereas life is simultaneously the condition of its own existence and the only possible measure of its ideal state (“the ideal of the organism here is clear to everyone—it is the organism itself” [*Writings* 70]), society has no intrinsic ideal form and so, for Canguilhem, social regulation must not be conflated with biological regulation.

Concerning society, we must address a confusion that consists in the confounding of organization and organism. The fact that a society is organized—and there’s no society without a minimum of organization—does not mean that it is organic; I would gladly say that organization at the level of society is of the order not of organic organization, but of design. What defines the organism is precisely that its purpose, in the form of its totality, is present to it and to all its parts. I apologize—I will perhaps scandalize you—but a society has no proper purpose; a society is a means; a society is more on the order of a machine or of a tool than on the order of an organism. (76)

Should society be shown to have a regulatory mechanism of its own, Canguilhem cautions, it will serve as “the point of departure for a political theory and a socio-logical theory that tends to subordinate the social to the biological” (68). Regulatory automation, in a Cartesian sense, was for Canguilhem a matter of political concern, and this concern was heightened thanks to the rise of cybernetics in the postwar period, which seemed to promote the mechanistic paradigm of biological life that Canguilhem, in the wake of fascism, sought to discredit, fearing any description of social life in which society loses its capacity to determine its own ends.

Canguilhem does not waver from his belief that the life of the organism and the life of a society are distinct phenomena. It is for Canguilhem the absence of internal regulation, of any true social homeostasis, that prevents a society from being understood as an organism: “[T]here is no society without regulation, and there is no society without rules, yet in society, there is no self-regulation. There, regulation is always, if I may say so, *something added on* and always precarious” (*Writings* 77; emphasis added).¹² But for Canguilhem, who had been a part of the

¹² Among the forms of social regulation human communities have devised to achieve relative stability, Canguilhem singles out “wisdom.” For the ancients, wisdom was essentially a form of regulation couched in the language of moral virtue which “protected man from the thrall of immoderation” (Canguilhem, *Writings* 74). Although Canguilhem concedes that equilibrium achieved through wisdom approximates the idea of the healthy organism, he nevertheless pulls back, carving out a separate place for what can only be understood as a rather traditional understanding of human reason: “Of course,” he writes, “it is not the body that is wise, but reason” (74).

French Resistance and was awarded the *Médaille de la Résistance* for his service, this conclusion seems to be less a scientific description of social life than it is a political imperative. In a reference to the potential return of fascism, the concluding lines of his essay contain a cautionary sentiment: “if I have not proved to you . . . that one must not allow [society] to resemble an organism, that we must thus be vigilant toward all these comparisons whose consequences you can guess . . . I would simply be happy if I have at least managed to pose for you certain problems” (78). Canguilhem not only concludes, therefore, that society *is not* analogous to an organism, but firmly insists that it *must not be allowed* to be interpreted as such.

Societies of Control

Throughout his career, Canguilhem will return repeatedly to the subject of regulation—lecturing on the topic at the *Institut d'histoire des sciences* (1957-8),¹³ contributing an entry on “Régulation (Épistémologie)” to the *Encyclopaedia universalis* (1971),¹⁴ and publishing an article on the subject, entitled “The Formation of the Biological Conception of Regulation in the Eighteenth and Nineteenth Centuries,”¹⁵ which appeared in print in 1977, the same year Foucault began his seminar on governmentality, but which was first presented three years prior, in December of 1974, at a conference on the idea of regulation in systems theory hosted at the *Collège de France*.¹⁶ In each case, Canguilhem maintains his view

¹³ “Concepts biologiques fondamentaux au XIXc siècle: Milieu intérieur et régulations, 1957-58,” in CAPHES (ENS) GC.12.2.4.

¹⁴ “Régulation (Épistémologie),” *Encyclopaedia universalis*, vol. 14 (Paris: Encyclopaedia universalis, 1972), 1-3. The topic of regulation also figures in the more celebrated entry on “Life” that Canguilhem also contributed to the *Encyclopaedia*, the English translation of which was published in *A Vital Rationalist* under the title “Epistemology as Biology.” See “Vie,” *Encyclopaedia universalis*, v. xvi. (Paris: Encyclopaedia universalis, 1972), 764-69.

¹⁵ “La formation du concept biologique de regulation aux XVIIc et XVIIIc siècles,” first published in *L'idée de régulation dans les sciences*, Séminaires interdisciplinaires du Collège de France 2 (Paris: Maloine, 1977).

¹⁶ In this text, Canguilhem traces the historical emergence of the concept of self-regulation. His investigation leads all the way to Norbert Wiener, but it begins with an important account of Leibniz. According to Canguilhem’s chronology, the emergence of regulation occurs in Leibniz’s reaction to Newton’s conception of divine creation. “For Newton, God did not simply build and calibrate a reliable mechanism that He then allowed to run on its own; rather He permanently surveyed the operation of the machine, so that His Sensorium (space) could inform him of any deviations from the norm, which could then be corrected by His Providence” (Canguilhem, *Ideology* 85). Newton’s God, in other words, did not have the foresight to build control into creation from the start. “Leibniz held that regulation (in the sense of governing a state or regulating a machine) is the same as a rule, in the sense of a static property that is built into a machine or system from the beginning” (86). Making a brief but noteworthy mention of Foucault, Canguilhem concludes: “Thus a cosmology *sans* theology for a long time gave credence to the Leibnizian idea of regulation, understood as the conservation of initial constants. This controlling schema, not to say paradigm, lay behind what Michel Foucault has called the ‘enunciative regularities’ [*Archeology of Knowledge* 163, 191] of an era” (87).

that there is no spontaneous order in society, no social self-regulation, which is why there is always need for political intervention and the imposition of external control—“something added on.” Although socio-political agency is undoubtedly an important factor in shaping political existence—after all, the semantic dimension of human life largely emerges from such agency—there is perhaps less willful human autonomy involved than Canguilhem assumes. Regulation as it appears within the domain of human society is not adequately understood as externally imposed or added on from the outside. Channeled through the framework of Foucault’s analysis of social order, there is simply no outside of power from which to exert that control. To speak in such terms is to fall prey to a mistaken understanding of how power functions within the space of human society, a mistake which parallels in many ways that of assuming that the organism is external to, or separable from, its environment, which Canguilhem’s conception of *milieu* sought to discredit.

When Foucault and his contemporaries address the subject of social regulation—as Gilles Deleuze does under the expression “societies of control”—we find in their writings the more pessimistic voice of a new generation, a generation less willing to assume that the ideals of political agency are as guaranteed as they once seemed to be. Foucault sees society and power as far more akin to an impersonal force. Decided upon, yes, but not to the extent that Canguilhem seems to suggest. Due to their more pessimistic stance, the thinkers of the next generation were better positioned to blur the line between the biological and the political in a manner that Canguilhem was unwilling to consider, and by turning to biopolitics Foucault signals this shift.

We tend to think of Foucault as a social constructivist concerned with the discursive practices of the distinctly human world, but it is perhaps possible, through the biological dimension of his work, to see in his writings a posthumanist inclination that resituates human social praxis within a broadened conception of the biological domain—a domain that includes the semantic *milieu*. Human beings are a cultural species, but that which is culturally absorbed is nevertheless a biological function. This semantic *milieu*, which Canguilhem certainly goes a long way toward embracing, is in the end not something he can follow to its conclusion. In the last analysis, for Canguilhem the regulatory elements of social life are, and must remain, fundamentally different from those that arise from the biology of the organism. Foucault, it seems, parts ways with Canguilhem on this point, compensating for his mentor’s oversight by placing the semantic *milieu* at the center of his research and by developing out of its elements the idea of biopolitics, according to which the political life of society and the biological life

of the organism constitute a continuum.

It is regulation in the domain of human social and political life that Foucault seeks to capture in his work on governmentality, including his prescient analysis of neoliberalism undertaken during this period, and as we have seen he formulates these ideas by drawing together two models of bio-social development: first, a model provided by Canguilhem, epitomized by the *milieu*; second, a model drawn from cybernetics, from which he formulates the idea of governmentality. Together they offer a framework for analyzing the deployment of power in our modern, liberal age, which has sought as its principal undertaking increasingly sophisticated ways of transforming freedom into an instrument of control.

Foucault's *Milieu*

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