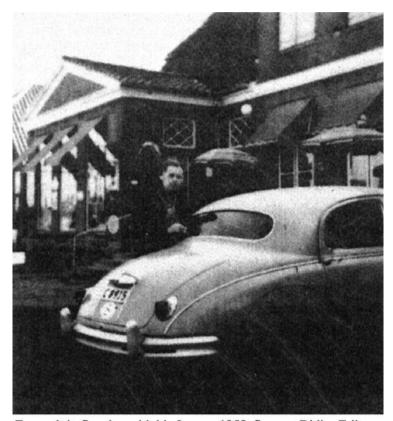Routledge
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Foucault and Technology

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Foucault in Sweden with his Jaguar, 1958. Source: Didier Eribon,
Michel Foucault

The photograph is a cliché, a theme replicated in countless snapshots from the 1950s: a young man posing with his flashy new car. He wears a dark jacket and appears slightly balding. His face is expressionless, almost shy, as he leans forward, his right hand tentatively extended, holding what seems to be a polishing cloth over the car's gracefully sloping back. The picture, it would seem, is intended to memorialize not the man, but the

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machine – a sleek, elegant, light-colored Jaguar, presumably a Mark 1. We see only the car's back half, but it fills the picture's brilliant foreground, a perhaps unintentional symbol of light, speed, and modernity, standing out in stark contrast against a background featuring a prim and proper building with neat window shades. By comparison, the car's owner is almost effaced, a blurry figure dissolving into the picture's grainy shadows.

The picture was, in a way, prophetic, or at least inadvertently allegorical: the young man would soon secure his reputation as a leading philosopher by speculating on the impending 'death of man.' That he posed for a photograph next to his car is not, in light of the context, particularly surprising. In France in the 1950s (as in much of the industrialized world), the automobile was synonymous with the rapid modernization then underway. In 1957, the philosopher's friend, the cultural critic and semiologist Roland Barthes, famously observed: 'cars today are almost the exact equivalent of the great Gothic cathedrals: I mean the supreme creation of an era, conceived with passion by unknown artists, and consumed in image if not in usage by a whole population which appropriates them as a purely magical object.'[1] The philosopher – whose name was Michel Foucault – was not immune to this enchantment. He purchased his car when, sometime between 1955 and 1958, while serving as a 'French assistant' at the University of Uppsala in Sweden. According to one biographer, 'the Jaguar was his pride and joy.'[2]

Unlike Barthes, Foucault, for all of his fondness for cars, never had much to say about the technological advances that were transforming French society in the 1950s, nor, for that matter, about technology in its broadest and most conventional sense. Yet while Foucault never dwelt directly on these issues, 'technology' is a word that appears frequently in his writing and is, moreover, integral to his thought.[3] Foucault primarily typically employs the term – as well as the related and in French often synonymous one of 'technique' – to refer not to tools, machines, or the application of science to industrial production, but rather to methods and procedures for governing human beings. Yet even within this horizon of meaning, the word 'technology'[4] is, in Foucault's lexicon, marked by a deep ambivalence. He oscillates between at least two main ways of using the term. In the first place, 'technology' belongs to Foucault's distinctive vocabulary of social and political critique. It refers to the ways in which modern social and political systems control, supervise, and manipulate populations as well as individuals. As such, 'technology,' for Foucault, both overlaps with and extends considerably beyond what historians of technology have called 'complex sociotechnical systems' – for example, factories organized according to the principle of scientific management or electrical grids – that have come to characterize modern societies.[5]

In this register, Foucault uses the term 'technology' to highlight the ways in which power relations operate – not necessarily to denounce them, but rather to challenge their professions of neutrality (i.e. their claim to have no effects) and to compel readers to ask themselves how much power they are willing to bear. Thus in 1974, Foucault remarked:

> Political power, before acting on ideology, on the consciousness of individuals, exerts itself in a much more physical way on their bodies. The way in which gestures, attitudes, usages, allotments in space, and modalities of housing are imposed – this physical, spatial distribution of people belongs, it seems to me, to a political technology of the body.[6]

Foucault makes the critical intent of his use of 'technology' clear when he associates it with the thinker who decisively influenced his own conception of philosophical critique – Friedrich Nietzsche. In 1978, Foucault described his project of studying prisons as an

effort to 'return to the theme of [Nietzsche's] genealogy of morality, but by following the transformations of what one might call "moral technologies."'[7] Yet while the latter position would suggest an attitude of suspicion or wariness towards 'technology' thus conceived, Foucault simultaneously believed that the range of meanings associated with the term were methodologically useful and rhetorically felicitous. In a lecture from 1976, he explained that his task was 'to show in what directions one can develop an analysis of power that is not simply a juridical, negative conception of power, but a technological conception of power,' one that is emancipated from 'the primacy … of the rule and prohibition.'[8] In this instance, Foucault uses 'technology' to propose an understanding of power that is shorn of latent moral values and the concepts that perpetuate them. Construed in this way, 'technology' assumes a neutral and even a potentially positive valance, indicating a critical methodology that analyzes how power shapes human conduct rather than its articulation in legal codes. In this way, Foucault's thought is permeated by a tension between a negative use of the term 'technology' – seen as a form of social and political control that should be subject to critique – and a distinctly positive one – in which the term is heralded as offering a solution to a number of previously unacknowledged limitations in understanding power relations.

This essay will probe Foucault's ambivalent use of 'technology' by identifying the historical and intellectual context in which he first came to use and reflect on the term and by tracing the emergence and evolution of this tension over the course of Foucault's philosophical career. My approach will be that of the intellectual historian, rather than that of the historian of science and technology. Given the enormous impact that Foucault's writings have, for better or worse, had on the humanities and social sciences (including the history of science and technology) – an influence that can be measured in part by the wide currency of such Foucauldian terms as 'power technologies' or 'technologies of the self' – it is worth considering what exactly Foucault meant by these terms and how their meaning evolved over the course of his *oeuvre*. To this end, I will first identify the relevant instances in which Foucault employs the terms 'technique' or 'technology' in an effort to reconstruct how he understood them and what philosophical or rhetorical ends he intended them to serve. In doing so, I carefully consider (for the first time, to my knowledge) all the instances in which he used these terms in his books and occasional papers (and, to a lesser extent, in his recently published lectures).[9] Thus, my primary aim is an exegesis of his body of work around the theme of technology.

Second, I illuminate a few of the discursive contexts that informed Foucault's use of these terms, the better to demarcate that which is conventional from that which is unconventional in the meaning he assigns them.[10] Finally, rather than attempting to describe Foucault's 'views' on technology – a position that assumes he had a didactic or dogmatic position on the matter – I will, in most cases, focus on Foucault's 'usage' of the term. This approach is justified by the fact that, as Jana Sawicki astutely observes, Foucault was never interested in proposing a general theory of technology as such: his 'philosophy of technology,' she writes, 'is particularistic. He does not attempt to provide a general account of the practices that compose the "essence" of modern technology, but rather specific histories of technological practices that have been overlooked in traditional accounts of modern forms of power.'[11] In this way, I seek to draw attention to the tensions and ambivalences between the different kinds of tasks to which the term is assigned in Foucault's lexicon.

To explore this fundamental ambivalence that characterizes Foucault's use of the term 'technology,' I will trace the development of his thought as it relates to this question in

several distinct steps. After a brief consideration of some of the terminological and linguistic issues that the word 'technology' raises (in '*Technique, Technologie*, and Technology'), I will consider, in the section entitled 'Intellectuals and the Problem of Technology in Postwar France,' two contexts that are essential for grasping how Foucault came to understand the term. First, I will characterize in broad strokes a critical attitude towards what was increasingly described as 'technological society' that was widespread in certain French intellectual circles – especially writers, social scientists, and philosophers – in the decade following World War II. Particular attention will be given to some of the most important contributors to these conversations, notably Jacques Ellul, Michel Crozier, Georges Friedmann, and Raymond Aron. This context helps us to identify the conventional dimension of Foucault's understanding of technology: he shared (as his early writings attest) a prevailing skepticism towards modern technological society, particularly in the ways in which technology could be used for purposes of social control. Next, in 'Foucault, Technology, and Humanism,' I will consider the attitudes towards technology of postwar existentialists and phenomenologists – that is, the thinkers that Foucault would, by the mid-1960s, dismiss as 'humanist.' This context brings to light the unconventional way in which Foucault (ultimately) came to see technology: despite his apprehensions about the use of technology for social control, he rejected the 'humanist' arguments that frequently underpinned contemporary critiques of technology, which called for a 'rehumanization' or 'de-alienation' of a world that technology had allegedly dehumanized and alienated from itself. Foucault's philosophical anti-humanism made it possible for him, at a later stage, to conceptualize power in technological terms – that is, a way of shaping and coordinating the behavior of individuals that made no assumption about a violated or estranged human 'essence.'

Once these contexts having been fleshed out, I will turn to a careful examination of the evolution of Foucault's use of the term 'technology' over the course of his career. Between 1954 and 1960, at the time Foucault was completing his graduate studies, he briefly shared the humanist view that modern technology was a source of the individual's sense of alienation in modern society, even as he also began to reflect on the ways in which psychology, particularly in such applied forms as industrial psychology, was evolving into a technique for social control ('The Critique of Technology in the Humanist Foucault'). The period between 1961 and 1972, during which Foucault published many of his most important books and pioneered his 'archaeological' method (which seeks to recover the successive epistemological structures through which human societies have laid out the scope of the knowable), is one in which Foucault referred to technological concerns relatively little compared with previous and later periods. This period is nonetheless interesting in that Foucault, in his writings, often betrayed a residual Heideggerianism, which connected the central place of 'man' in modern thought to the advent of a world replete with technical calculation and manipulation ('Technique between Knowledge and Power'). This position largely disappeared from the next phase, between 1973 and 1979. This period was the most decisive in Foucault's evolving understanding of 'technology.' It was in this phase, during which Foucault largely abandoned his archaeological approach for his so-called genealogical method (which was focused on tracing the origins of modern power relations), that Foucault spoke frequently of 'technologies of power' and the 'political technology of the body.' It is at this stage, when Foucault both proposed his most developed critique of modern forms of domination and advanced his Nietzschean conception of power (based on the idea that power creates and stimulates rather than simply forbids and represses), that the ambivalence between the 'negative' and 'positive' dimensions of Foucault's use of 'technology' is most evident

('Technologies of Power'). Finally, between 1980 and his death in 1984, Foucault's interest shifted away from power towards an exploration of selfhood. In doing so, however, he continued to use his terminology from the previous phase, speaking now of 'technologies of the self' rather than solely of 'technologies of power.' Though Foucault's earlier interest in the technological dimensions of modern forms of social control subsided during this final phase, when ancient Greece and Rome replaced modern institutions as his primary scholarly interest, Foucault continued to use 'technology' in its positive or methodological sense because, even in his analysis of the self, he steadfastly refused to return to the categories of philosophical humanism ('Technologies of the Self').

Using this approach, I hope to show that the incongruity between Foucault's negative and positive uses of 'technology' can be, if not resolved, at least better understood. The negative perspective on technology that one finds in Foucault's writing is, I argue, hardly an original one, at least in terms of its core sentiments. Rather, it is symptomatic of a widespread intellectual skepticism about the emergence of a 'technological society' in the decades following World War II. This debate addressed not only the new machines and consumer products that were flooding the market, but also technological approaches to the organization of human groups, particularly the industrial workplace. Concerns about these developments constitute, I argue, the backdrop to Foucault's understanding of technology. In other words, for all the brilliance and fine theoretical grain of his arguments, Foucault's basic attitude belonged to the garden variety of postwar intellectual anxiety about technology. His originality lies in the fact that at the same time that he voiced an almost generic skepticism towards technology, he categorically rejected the philosophy that, in the late 1940s and 1950s, had underpinned it: 'humanism,' understood both as a diffuse cultural attitude and as the positions associated with the philosophical schools of existentialism and phenomenology. Most French thinkers who lamented the 'technologization' of the modern world believed that the ultimate danger of this trend lay in the fact that it was incompatible with 'man's' essential nature – that it entailed a disquieting dehumanization of the world. In the name of various related theoretical positions (structuralism, Nietzscheanism, etc.), Foucault rebuffed the humanist claim that 'man is the measure,' while remaining deeply apprehensive of the political and social consequences of technologies of social control. Consequently, he found himself endorsing a technological idiom for explaining human beings and society as a way of avoiding what he viewed as humanism's theoretical pitfalls. The tension that pervades Foucault's view of technology resides, in sum, in the fact that he undertook a critique of the use of technology as a tool for domination, while denying himself the most common theoretical basis for this position – a celebration of the human being in its non-technological essence. To set the basis for this discussion, it is first necessary to review the key terms that lie at the heart of this essay.

Technique, Technologie, and Technology

The study of Foucault's use of the 'technology' raises the thorny issue of the definition of and relationship among the French terms '*technique*' and '*technologie*' and the English 'technology.' As Jean-Jacques Salomon has noted, whereas 'technology is a word which is taken for granted in English – all the more since "technique" usually refers to something quite different, [i.e.] skills or methods,' in continental European languages, notably French, '*la technologie* seems redundant beside *la technique* which covers all activities associated with things technical; *technologie* is much more specialised and refers to more

advanced stages of *technique*.' He adds that in French, 'everything is *technique*, but any *technique* is not *technology*.'[12] This point is confirmed by the *Dictionnaire historique de la langue française*, the authoritative work on French historical etymology. '*Technique*,' it tells us, first entered the French language in 1684, borrowing from the Latin ('*technicus*') and the Greek ('*tekhnikos*' and '*tekhnê*'). It meant 'the master of an art, a specialist.' By the nineteenth and twentieth centuries, '*technique*' had acquired its modern valences: an 'activity applied to industry, to the production of objects,' as opposed to 'the abstract and theoretical domains (cf. *sciences*) that underpin these practices.' '*Technologie*' originally designated the science of or learned discourse about '*technique*.' However, this sense has now become antiquated: 'In our day, the word, like its derivatives, is mostly used as an Anglicism (*technology*) to refer to state-of-the-art, modern, and complex techniques, or even all modern techniques, with an ameliorative, promotional, or political connotation.'[13] Eric Schatzberg has argued that 'technology' entered American English when around 1900 social theorists – most notably Thorstein Veblen – used it to translate the German term '*die Technik*,' which by the late nineteenth century was being used to refer 'to the practical arts as a whole, especially those associated with engineers and modern industry' – and by extension, in the works of thinkers like Max Weber and Werner Sombart, the entire social, economic, and cultural realm that was shaped by industry and engineering in modern times.[14] By extension, if '*technologie*' is indeed an Anglicism, it is a French translation of the American term 'technology,' which itself was a rendering of the German '*Technik*.'

Foucault frequently seems to have used these terms interchangeably. In a lecture from 1978, Foucault explained: 'My research deals with *techniques* of power, with the *technology* of power.'[15] In 1980, he said that in examining the 'theme of the machine' in modern surveillance systems, it was his intention 'to study the development of a *technological* theme that I believe is important in the history of the great reevaluation of power mechanisms during the eighteenth century [and] in the broader history of *techniques* of power … .'[16] Though such passages suggest that Foucault often saw the terms as synonymous, Foucault's use of 'technique' and 'technology' are nonetheless separated by a few discernible (if slight) shades of meaning. First, while 'technique' appeared in Foucault's earliest writings (including his first book, published in 1954), he did not use 'technology' until around 1974 – in other words, around the time his work shifted from its focus from the production of knowledge to the analysis of modern power relations. As the index of his collected papers (*Dits et écrits*) makes clear, Foucault's use of both terms increased dramatically once he began to employ 'technology' to define power relations. In short, though he was inclined to use the terms interchangeably, it was only once he came to reflect seriously on the centrality of what he called 'technologies of power' to modern society that he began to use *both* terms with great frequency.

With this transition, the terms began to come into sharp definition in Foucault's thought. Until 1974, Foucault's usage of '*technique*' suggested a range of different meanings, from that of skill or method (early psychology's 'techniques of retraining' or the anatomist's 'technique of the corpse') to a synonym for technology – that is, for a fundamental attribute of modern society ('the universe of the machine' or 'mechanistic rationality'). By 1974, he used both 'technique' and 'technology' often because they had become central to his attempt to reflect on the nature of power (and, at times, to 'technologies of truth' that were related to these power forms). As this essay will demonstrate, these terms played two major roles in Foucault's thought.

First, they referred to the fact that, since the seventeenth century, the same kind of rational, scientifically informed procedures that were being used to control nature,

production, time, and so on were being used to manage human beings, particularly in institutional settings. Second, 'technique' and 'technologically' proved methodologically useful in the way that they broke with what Foucault saw as the humanist prejudice that viewed power in purely negative or repressive terms, as something that, on the model of a law or a prohibition, says 'no' – as opposed to a relationship that molds, adapts, triggers, and stimulates individual behavior, particularly by shaping bodily conduct. In the way that he appropriated them, Foucault was certainly, at some level, using 'technique' and 'technology' metaphorically: the rational control of bodily conduct and a non-humanist conception of power is not what, say, Veblen or any of his intellectual heirs in the USA or France typically meant when they spoke of 'technology.'

Yet it would be a mistake to see Foucault's employment of these terms as entirely metaphorical. It might be more accurate to say he used them metonymically: his 'negative' use of 'technology' refers to the mechanization and regimentation of human labor associated with the division of labor in the industrial factory, while his 'positive,' methodological use of the term evokes the concrete, anti-metaphysical outlook of the modern engineer. Thus while Foucault's use of 'technique' and 'technology' is idiosyncratic and serves a very specific philosophical and political enterprise, it is nonetheless possible to trace it back to the same semantic trunk that has shaped these terms' meaning in modern times. These clarifications make it possible, moreover, to grasp the meaning of the terms 'technique' and 'technology' as they were used by French intellectuals in the immediate postwar years.

Intellectuals and the Problem of Technology in Postwar France

One of the most salient characteristics of French intellectual discourse in the decade following the end of World War II was a pervasive concern with the 'technical' or 'technological' character of modern society. In a tome published in 1954 under the title *Le technique ou l'enjeu du siècle* (which later appeared in the USA as *The Technological Society*), the philosopher Jacques Ellul declared: 'No social, human, or spiritual fact is so important as the fact of technique in the modern world.'[17] For some, this fact could be the source of considerable optimism: technology was the beacon of a better future, in which the afflictions that had plagued European society in the first half of the twentieth century – rigid social stratification, pervasive class conflict, economic chaos, and nationalistic warfare, which had wreaked destruction on a previously unimaginable scale – would at last be overcome. In a much debated essay appearing in 1949, the civil servant Jean Fourastié asserted that technology was the 'great hope of the twentieth century': 'technical progress,' he predicted, would redirect most of the workforce to the service sector, ending the regimentation and exploitation that had characterized industrial society. In this new dawn, Fourastié prophesized, 'man would not be crushed by the machine, [and] nothing will be less industrial than the society born from the industrial revolution.'[18]

Harking back to a well-established tradition of skepticism about technology's cultural implications, most intellectuals, however, were far less sanguine. In a pamphlet from 1947, the novelist Georges Bernanos cast himself as the champion of eternal France as it faced the onslaught of what he called 'the robots,' warning of the dire consequences if the latter prevailed:

> Obedience and irresponsibility, these are the magical words that tomorrow will open up the paradise of the Civilization of Machines. French civilization, the heir to Hellenic civilization, has strived for centuries to instruct men to be free, that is, fully responsible for their actions: France refuses to enter the Paradise of the Robots.[19]

The same year, the critic Lucien Duplessy declared: 'The colossal modern imbalance is indeed the result of the sovereignty of technique.' The consequences of this trend, he opined, were grave, for 'whosoever becomes a technician … ceases to be a man. Technique is the antipode of culture, as relentless specialization makes one impermeable to the universal, to the human.'[20] For the Christian existentialist Gabriel Marcel, technology's most disturbing trait was its 'demeaning' (*avilissant*) quality. In 1951, he wrote: 'What is demeaned is the very notion of life …. One could even ask if the man of technique does not come to see life itself as a technique that is entirely imperfect, for which shoddiness is the rule.'[21] Raymond Aron, the political thinker, sociologist, and keen commentator on French intellectual life, observed in 1955 with customary insight that the intelligentsia's apprehensions about technology seemed out of proportion with the degree of technological change that France had actually undergone: 'Thought gets ahead of the future,' he mused, 'and is already denouncing the risks of a technical civilization, despite the fact that the French are far from having reaped all its benefits.'[22]

Meanwhile, across the Rhine, Martin Heidegger was reorienting his thought to an analysis of technology as the dominant tendency within Western thought, whereby humanity's primordial openness to 'being' was occluded by a utilitarian disposition that he called the 'frame' (*Gestell*).[23] Yet while they did not always plumb to these ontological depths, French thinkers of the late 1940s and 1950s nonetheless developed a critique of technology that was largely consonant with Heidegger's ideas. Commenting on the outlook of French intellectuals during this period, the historian Tony Judt remarks:

> The enthusiasm for modern German thought that had so characterized younger writers during the thirties was now thoroughly incorporated into the indigenous French variant; among its central props was the Heideggerian distaste for "technical civilization." Although French existential philosophy did not pay to this side of Heidegger the same attention he would receive from his Central European readers, the subterranean presence of this dimension of his thought is unmistakable.[24]

In many ways, an attitude of cultural skepticism towards 'technological society' became, during this period, a hallmark of the French intellectual class, a position that it largely took for granted and integrated into its collective common sense.

Pervasive intellectual unease about technology was a clear response to a number of trends that were revolutionizing French society. Through the Marshall Plan, administered by the Economic Cooperation Administration (ECA), the USA not only provided the French economy with a much needed injection of cash to help it recover from the ravages of war, but also undertook to modernize French industry by encouraging the introduction of US technology and management techniques to boost productivity and raise living standards. The unprecedented industrial growth also allowed fostered the development of a consumer economy. As a result, modern technology entered many people's daily lives for the first time. Kristin Ross writes: 'In the space of just ten years a rural woman might live the acquisition of electricity, running water, a stove, a refrigerator, a washing machine, a sense of interior space distinct from exterior space, a car, a television, and the various liberations and oppressions associated with each.'[25] The historian Richard Kuisel notes that in 1954, only 18% of French households were in possession of vacuum cleaner, 10%

of a washing machine, and 7.5% of a refrigerator. Between 1949 and 1957, however, the total stock of home appliances increased by 400%.[26] The production of television sets skyrocketed from 24,000 in 1952 to 988,000 by 1958; during the same period, automobile production soared from 303,000 to 589,000.[27]

In addition to reshaping production and consumption, technology was transforming the state itself: the postwar period was the golden age of 'technocrats' – civil servants with training in public administration, economics, or civil engineering who played a critical role (working with the private sector) in setting national economic priorities and modernizing French society.[28] The most important of these technocratic government agencies were the General Commissariat for Planning, charged with modernizing the economy and infrastructure (created in 1946); the INSEE, the state statistical institute (also created in 1946); and the Atomic Energy Commissariat (created in 1945), which launched the French nuclear program.[29] Reflecting on these developments, Jacques Ellul concluded that the state had become 'an enormous technical organism.'[30] In this context, he observed, political doctrine had largely ceased to matter: it 'no longer represents the end; the end is defined by the autonomous operation of techniques.'[31] It was no doubt this dubious claim to ideological neutrality, justified on the grounds of efficiency and rationality, that Foucault's critics had in mind when they accused him (as he recalled with bemusement) of being a 'technocrat in the service of Gaullism.'[32] While hardly accurate, the accusation was not entirely baseless: in the mid-1960s, Foucault was nearly appointed the French education ministry's director for higher education, and in 1965 the government tapped him to participate in a 'technocratic' reform of the university system.[33]

In short, at work and at home, as well as in their interactions with the state, the French found themselves experiencing, in the postwar decades, a technological reconfiguration of daily life. If this transformation had a bard, it was certainly the film director Jacques Tati, who used the adventures of his sublimely naïve alter ego, Monsieur Hulot, to gently mock his contemporaries' obsessive if often bumbling enthrallment with technology, whether at work (*Jour de fête*), at home (*Mon oncle*), on vacation (*Les vacances de Monsieur Hulot*), or while commuting (*Trafic*) – reminding his audience, in passing, of the quaint charms of the slower, messier, cramped, yet more human and less regimented world that modernity was swiftly leaving behind.

In addition to the sheer number of machines that the French were increasingly grappling with during this period, the idea of a 'technological society' captured a more diffuse sense of the way in which the entire scope of social life was falling under the sway of technological imperatives. 'The machine,' Ellul observed, 'is now not even the most important aspect of technique (though it is perhaps the most spectacular); technique has taken over all man's activities, not just his productive activities.'[34] This was particularly evident in the attention given to the ways in which new forms of industrial management, typically imported from the USA, were transforming the French workplace. To many observers, the rise of 'human technology' and 'human engineering' embodied the technological moment as much as the proliferation of cars, refrigerators, and washing machines. The ideals of 'scientific management' developed by the American engineer Frederick Winslow Taylor and Henry Ford at his Michigan automobile factories had dramatically modernized French industry.

While these practices (particularly Fordism) were still widespread in the postwar years, French observers were discovering that the originators of these techniques – the Americans – now saw them as flawed and had begun to consider new approaches to industrial management. The thinker who did the most to call attention to this shift was the French sociologist Georges Friedmann. Taylorism had sought to render the modern

factory more efficient by approaching labor from a '*technicist* perspective,' making the worker's 'speed and output' the 'sole criteria' for improving the production process. Through time and motion studies, the worker's labor could be rationalized, eliminating inefficiencies and 'dead time' from factory work – presuming, that is, that workers obeyed the rigorous discipline that resulted from the scientific reorganization of the work-place. Yet, as Friedman explained, social scientists like Elton Mayo in the USA and C.S. Myers in the UK began to argue that Taylorism overlooked the 'human factor' in labor efficiency: the fact that monotony, work environment, labor–management relations, and a sense of belonging (among other variables) played a decisive role in determining the efficiency of even the most scientifically organized assembly line. Consequently, in the postwar era, industrial psychology had begun to replace Taylorism as the paradigm for industrial organization. In a work from 1946, Friedman summed up the innovations of the 'human factor' school – or 'human relations' movement, as it came to be called – in these terms:

> Having begun with strictly technological methods which were content to bend the worker to their rigorous discipline, Scientific Management, thus renovated, tries to *conquer* him by methods based on social psychology. It tries to reinforce his participation in the firm and for this purpose to develop a 'morale' within it, to unify it and reshape it through a spirit of community. Formerly, in Taylor's day, the watchword was *discipline*. Now it is *morale*.[35]

Thus even while transcending Taylorism's narrowly 'technicist' outlook, the human relations movement unquestionably aspired to be a technique of industrial management in its own right. In 1951, following an extended visit to the USA, Michel Crozier (who would eventually become a sociologist in Friedmann's intellectual orbit), made a similar point in the pages of Jean-Paul Sartre's journal, *Les temps modernes*: 'New techniques, corresponding to the progress of human knowledge as much as to recent developments in the workers' struggle, have been fine-tuned …. Even in France, we have begun to feel their effects. Our industrials and leaders have started speaking of "public relations" and "human efficiency."'[36] Crozier translated 'human engineering,' which he associated with the human relations movement, as '*technique industrielle de l'humain*' – the 'industrial technique of the human.'[37] Crozier dwelt on two such techniques in particular: 'training within industry' and counseling. He ultimately concluded that these techniques amounted to little more than a refinement of the forms of workplace domination pioneered by Taylorism and Fordism.

Building on Crozier's insight, Ellul contended that, far from correcting Taylorism's 'technicism,' the human relations movement represented an even more extreme and all-encompassing application of technology to labor practices. The technician, he wrote,

> considers man only as an object of technique and only to the degree that man interferes with the proper function of the technique. Technique reveals its essential efficiency in discerning that man has a sentimental and moral life which can have great influence on his material behavior and in proposing to do something about such factors on the basis of its own ends. These factors are, for technique, human and subjective; but if means can be found to act upon them, to rationalize them and bring them back into line, they need not be a technical drawback. Of course, man as such does not count.[38]

This debate about scientific management, the human factor, and the human relations movement indicates that French intellectuals understood the growth of technology to refer

not simply to the development of machinery and the mechanization of more and more sectors of social life, but to the introduction of ground-breaking forms of social organization and control. In 1955, Raymond Aron summed up this attitude – though in somewhat more measured terms than Ellul or Crozier – when he observed:

> In the Soviet Union as in the United States, the manipulation of men is based on a science and a technique. Specialists of 'rewriting,' advertisement, electoral propaganda, information, or psychotechnics offer lessons on speaking, writing, and organizing work in such a way as to make our fellows satisfied, indignant, passive, or violent. The psychology upon which their profession is based is not necessarily materialistic, along the lines of Pavlov's reflexology. Yet even so, its lesson is to treat men as mass creatures, with calculable reactions, rather than as persons, each of which is irreplaceable.[39]

Foucault, Technology, and Humanism

Reading Friedmann, Crozier, and Ellul, one is struck by how their interest in modern industrial organization in the 1940s and 1950s led them to insights that resemble those made by Michel Foucault in the 1960s and 1970s – despite the fact that Foucault was rarely concerned with the problem of labor, narrowly construed. All three emphasize the centrality of the 'sciences of man' – particularly industrial psychology – to contemporary industrial techniques. Friedmann speaks for instance of 'the attempt of the sciences of man to introduce a scientific and human control of industrial mechanization.'[40] Foucault, too, doggedly maintained that the human sciences (whose advent and epistemological underpinnings had been the primary object of *The Order of Things*), particularly those with the most tenuous claims to being scientific (such as psychology or criminology) are deeply intertwined with modern forms of power. Thus Foucault contended that the very idea of the soul, which he calls the 'correlative of a certain technique of power over the body,' is one on which 'scientific techniques and discourses, and the moral claims of humanism' have been built.[41] Crozier, moreover, explains how new management techniques use ideas about 'normality' to keep workers quiescent. For instance, public relations' departments 'act *indirectly* on opponents, by making them believe that they are mistaken, that they have veered from the normal, as everyone disagrees with them.'[42] Ellul asserts that the 'technique of so-called human relations [is] … to adapt the individual to the technical milieu, to force him to accept his slavery, to make him find happiness by the 'normalization' of his relations with his group … .'[43] Similarly, Foucault argued that discipline operates through the 'power of the Norm,' which creates a pressure towards homogeneity 'within a system of formal equality' (in this instance, it is worth noting, Foucault acknowledges that disciplinary power arose in part through 'the standardization of industrial processes and products').[44] Even more striking is the fact that, in introducing Crozier's article, the editors of *Les temps modernes* specifically referenced Nietzsche, Foucault's philosophical muse, to describe the insidious power of the modern manager. By treating discontent as abnormal, industrial psychology exemplifies 'the supreme victory of the oppressor which is, as Nietzsche would say, to give the oppressed a guilty conscience by imposing on them his own norms.'[45] This idea evokes Foucault's notion that the soul is itself the creation of punitive power structures and exists only to imprison the body (and, thus, is a concept, he argued, we must trace through the "genealogical" method).

Finally, like Foucault, Ellul understood that to speak of power as 'technical' meant insisting upon its impersonal character. Technique 'is not the result of a plot or plan by

any one man or group of men who direct it or apply it or shunt it in new directions. The technical phenomenon is impersonal, and in following its course we have found that it is directed towards man.'[46] Along similar lines, Foucault contends that most power forms (if not technology *per se*) cannot be reduced to or explained in terms of individual intention. He argued for the 'implicit character of the grand, anonymous and almost mute strategies that coordinate the loquacious tactics whose "inventors" and authorities are often lacking in hypocrisy.'[47]

The point is not that Foucault was directly influenced by Friedmann, Crozier, or Ellul (to my knowledge, he never references any of them[48]), nor even that the emerging fields of industrial psychology or the sociology of work decisively shaped his thought (though he was, we shall see, aware of the former). Rather, what this comparison suggests is that Foucault's view of technology and its function in the modern world belonged, to some degree, to the common sense of French intellectuals of the postwar era. First, many believed that the modern world's technological orientation was cause for very serious concern (Friedmann, who retained a leftist faith in progress, is a notable exception). Second, the application of technological methods to government and social organization – what Ellul called 'human techniques'[49] – was often perceived as a dramatic curtailment of human freedom. Though there is much that separates their intellectual projects and their core philosophical principles, it is worth emphasizing, when considering Foucault's conception of technology, that he shared these anxieties – particularly the latter – with a significant number of other postwar intellectuals. That he had his own highly original and idiosyncratic characterizations of the nature of modern 'technologies of power' does not vitiate the fact that his thought arose from shared intellectual outlook.

Yet there is one crucial way in which Foucault's views on technology are fundamentally irreconcilable with those of many other thinkers of his time: Friedman, Crozier, Ellul and a number of their contemporaries criticized technology *in the name* of humanism; Foucault, however, did not. His gambit, rather, was to suggest ways in which technologies of power could be understood and resisted without any recourse to humanism's metaphysical claims. Indeed, Foucault even suggested that humanism, far from being the antidote to technology's colonization of contemporary life, was in fact the problem: the modern conception of 'man,' he maintained, belonged to the same epistemological stratum as most technological applications of power (in, say, in the modern prison or hospital), even enhancing their unwavering effectiveness.

The ambiguity that haunts Foucault's thinking about technology – the fact that at times the word seems to have a negative valence, while at others its connotation seems almost positive – is ultimately grounded in the fact that despite exhibiting an emblematic skepticism towards technology and 'human techniques,' he precluded the possibility of invoking humanism either to critique technology or to propose an alternative to a technologically saturated world. His departure from the intellectuals we have been discussing on this point is striking. The ultimate goal of Freidmann's work, for instance, was crystal clear: industrial labor (particularly in its 'technicist' form) is inhuman, but it can, however, be humanized. Assembly-line work, he wrote, 'merits neither excessive honors nor indignities, neither great apology nor pathetic maledictions …. It is a stage at which we still find ourselves and which may prolong itself: it is possible but difficult to humanize it.' His sympathy for the human relations movement lay in its use of the human sciences to realize the 'noble hope of humanizing work.'[50] Ellul was considerably more pessimistic than Friedmann: he saw little hope that technology could be humanized and, moreover, had no easy answer to the question of what a 'human' even is. 'I do not believe,' he admitted, 'that there are many proponents left of the idea that man is something in

himself, that he had an essence independent of his milieu.' Even so, he continued, 'there is a difference between the spontaneous and lightly coercive influence of an individualistic social group and the calculated, precise, and efficient influence of techniques.' In any case, 'all evidence suggests that what is called the "person" is being dangerously impaired.'[51] The problem with technology is, in short, that it dehumanizes (or de-personalizes): it substitutes its cold, abstract, calculating imperatives for genuine human needs (even if technology could serve such needs). From this perspective, it was only natural that the critique of technology associated itself with a humanistic philosophy in which 'man,' rather than impersonal abstractions, was the measure. From this vantage point, both the originality and ultimate strangeness of Foucault's attempt to critique technology's power effects without appealing to humanism – that is, to some conception of humanity's distinct nature, which is susceptible to degradation or alienation – comes to light.

Though Foucault was not especially interested in intellectuals who were studying the practical application of technology in the workplace, he was, nevertheless, as a result of his studies in philosophy during the 1950s, deeply versed in the contemporary thinkers who were developing a more philosophically sophisticated account of humanism, which to some extent formed the era's intellectual baseline. Postwar humanism found its most coherent champions in existentialism and the related school of phenomenology. These schools of thought converged around a specific theory of meaning. Put simply, they contended that to understand the world means to grasp how it appears (i.e. the way in which it becomes a phenomenon) to human consciousness. Consciousness, however, is never a clean slate; it is always directed to the world in a particular way (for instance, as imagination, memory, objectivity), a point that phenomenologists conceptualize with the term 'intentionality.' Meaning thus refers to the ways in which a consciousness that is always directed at the world interconnects with a world that is always presenting itself as phenomenon. Yet phenomenology's primary focus remains consciousness and the intentional states through which it constitutes the world as meaningful.

For all its novelty, this school of thought belongs to a philosophical tradition extending back to Descartes by way of Kant, which emphasizes the 'subject' (i.e. consciousness, as opposed to the objective world) as the ultimate source of knowledge, meaning, and value in the world. In this context, the subject refers not only to the individual consciousness, but to the general condition of subjectivity – a notion that Kant and the phenomenologists dubbed the 'transcendental subject.' In the existentialism of Jean-Paul Sartre, this insight had ethical implications as well: because the world has no intrinsic meaning other than the web of perceptions and choices that defines each person, the individual must be conceived as fully responsible for her existence. This subject-centered account of meaning was the implicit philosophical underpinning of the term 'humanism' as it was used in the postwar era.

It comes as no surprise that, through their focus on consciousness' meaning-endowing character, existentialism and phenomenology could fuel the ambient intellectual skepticism towards technology.[52] In his famous 1946 lecture, 'Existentialism is a Humanism,' Jean-Paul Sartre, implicitly contrasted technique and subjectivity in order to explain the central existentialist thesis that '*existence* comes before *essence*.' Consider, Sartre says, 'an article of manufacture' such as a paper-knife. It has been made by a craftsman who not only had a conception of the end result, but also 'the pre-existent technique of production which is a part of that conception and is, at bottom, a formula.' Because this manufactured object has a definite purpose and is producible in a specific way, we can say 'of the paper-knife that its essence – that is to say the sum of the formulae and the

qualities which made its production and its definition possible – precedes its existence.' Essence in this way is tied to 'viewing the world from a technical standpoint.' Consequently, the paper-knife does not properly 'exist,' at least not in the strong sense of the term. For Sartre, only human beings truly exist, for no higher concept or technical formula defines them. 'Man,' Sartre says, 'is nothing else but that which he makes of himself.' Some denounce the existentialists for embracing 'subjectivity.' 'But what do we mean to say by this,' Sartre rejoins, 'but that man is of a greater dignity than a stone or a table? For we mean to say that man primarily exists – that man is, before all else, something which propels itself towards a future and is aware that it is doing so.'[53] Sartre's conception of existence is thus grounded in an understanding of subjectivity that chafes at the notion that human being could ever be reduced to a technical formula. It may well be the case that manufactured goods, machines, or even social relationships can be essentially grasped in technical terms. If so, it is because they are tools of human action, the means by which human beings propel themselves into the future. When, however, they take precedence over human freedom, or human beings model themselves on their principles, humanity has accordingly sunk into inauthenticity.

  It is well known that Foucault defined his own intellectual enterprise against Sartre, phenomenology, and the headlock in which the 'philosophy of the subject' held contemporary thought. What I would like to suggest is that Foucault's critique of philosophical humanism also shaped his ambivalent attitude towards technology. At one level, Foucault's challenge to philosophical humanism, precisely because this position was so closely tied, for reasons explored above, to a broader intellectual skepticism towards technology, led him to adopt a more favorable opinion of technology – or at least a certain philosophical rhetoric about technology. This is evident in an interview Foucault gave in 1966, shortly after the publication of *The Order of Things*, his most pointed attack on philosophical humanism (which famously prophesized the 'death of man'). 'Our task,' he asserted (twice, in fact, in the same interview), 'is to emancipate ourselves definitively from humanism' and its 'chatty endeavors' – 'saving man, rediscovering man in man,' and so on.[54] The interviewer pointed out that Foucault's alternative to humanism – the analysis of 'systems,' 'anonymous thought' and 'knowledge without a subject' – seemed rather abstract by comparison. Foucault promptly responded: 'Abstract? This is how I would reply: it is humanism that is abstract! All these *cris de cœur*, all these claims on behalf of the human person and existence are abstract – that is to say, cut off from the scientific and technical world, which really is our true world.'[55] Foucault, in this way, clearly contrasted the 'scientific and technical character' of his examination of systems of thought to humanism's hackneyed paeans to 'man.' He continued, indirectly contrasting his position on technology to humanism's skeptical attitude:

> the effort undertaken by people of our generation is not to make claims for man *against* knowledge and *against* technique, but precisely to show that our thought, our life, our way of being, and even our most everyday ways of being belong to the same systematic organization and are thus subject to the *same* categories as the scientific and technical world.[56]

Foucault's philosophical assault on humanism, in short, went hand in hand with a rejection of the humanist critique of technology and, by the same token, an alliance of circumstance with the technical and scientific outlook (or at least, once again, to what 'technique' and 'science' might mean within the broader cultural and philosophical discourse).

Hence the fundamental ambivalence that characterizes Foucault's thinking about technology. On the one hand, Foucault accepted to a significant degree the postwar intellectual community's skepticism towards technology, particularly what Ellul had called 'human techniques,' that is, the use of technological methods for the governance of modern organizations. Foucault endorsed this common sense proposition of his time, even as he introduced a set of highly original concepts to explain it: the 'microphysics of power,' power-knowledge, discipline, panopticism, and '*le dispositif de la sexualité*.' On the other hand, Foucault, in rejecting philosophical humanism, in particular the claims that technology risks violating some fundamental human essence, simultaneously found himself drawn to the idea of technology as a kind of conceptual antidote to humanism's metaphysical platitudes. 'Technology' (or 'technique') implied in a number of ways a 'philosophy without the subject', the various forms of which Foucault experimented with at different stages of his career: it could refer to the impersonal, systemic, and integrated character of epistemological structures, thus emancipating the problem of knowledge from the analysis of consciousness; to the practical procedures by which power aspires to mold individual behavior, thus freeing power from questions of foundation and legitimacy; and, finally, to the practices, exercises, and routines by which one constitutes one's own selfhood, liberating, in this way, the concept of individuality from metaphysical notions of subjectivity and interiority. These two tendencies in Foucault's thought did not march in lockstep. The philosophical anti-humanism that informed his positive use of 'technology' had emerged by the mid-1960s, while his concern with oppressive 'power technologies' did not become explicit until his writings of the early 1970s (though it was certainly present implicitly in his earlier work). Yet while these tendencies represent distinct intellectual processes in Foucault's thought, in the sense that neither determined the other, the tension between them, as well as the resulting ambivalence, provides a prism for grasping Foucault's evolving understanding and use of 'technology' – to the detailed consideration of which we now turn.

1954–1960: The Critique of Technology in the Humanist Foucault

Foucault's most important pronouncements on 'technology' are – correctly, for the most part – associated with his political and 'genealogical' writings of the 1970s. The few scholars who have studied this question understandably assume that this is the moment when the philosopher first used the term. For instance, Jana Sawicki writes: 'The theme of technology first appears in Foucault's relatively recent [1975] history of punishment, *Discipline and Punish*.'[57] Yet in fact Foucault addressed the 'theme of technology' considerably earlier, notably in his largely forgotten first book, published in 1954. This initial stage of Foucault's career is, moreover, instructive: precisely because his distinctive philosophical voice had yet to develop fully, his youthful thought was far more symptomatic of the times than it would subsequently become. In particular, his earliest publications were steeped in the humanist discourse that he would soon rebuff. By the same token, they also partook in the era's pervasive intellectual skepticism about technology. In the period between 1954 and 1960, we see Foucault's thought when, like many others, he subscribed to a negative view of technology's social effects – yet before he endowed technology with a more positive sense for the purpose of critiquing humanism.

Foucault referred to the question of technology in his very first published work, a short book intended as an introduction for students entitled *Maladie mentale et personnalité* ('Mental Illness and Personality') published in 1954. Foucault wrote the volume when he was 27, at the behest of his teacher at the École Normale Supérieure, the

Marxist philosopher Louis Althusser.[58] At the time, Foucault had completed a diploma in psychopathology and, thanks to his training in experimental psychology, he was offered a teaching position at the University of Lille.[59] The book explores many of the themes that Foucault would develop at greater length in his doctoral thesis (madness, the asylum, psychology, etc.), albeit from a perspective that was deeply infused by Marxism and phenomenology in their most humanist forms. Towards the end of his life, Foucault recalled the intellectual climate in which the book appeared: 'I wrote it in a period when the different meanings of alienation, its sociological, historical, and psychiatric sense, merged with a phenomenological, Marxist, and psychiatric perspective.'[60]

The place of madness in human psychology leads Foucault, in an intriguing passage, to consider technology – specifically, the mechanization of modern society – as a possible explanation for mental illness (particularly schizophrenia). In their pathological universes, Foucault explains, the mentally ill seek escape into a private world of fantasy and delirium that ultimately reinforces the morbid constraints that enslave them. This paradox is ultimately a reflection of society's own contradictions. Foucault insists, though, mental illness is not simply an imaginary liberation from social constraints; it is also a way of being subject to them. Foucault points out that schizophrenia is often interpreted as a response to the increasingly technological character of modern life '[O]ne speaks frequently,' he writes,

> of contemporary schizophrenia, connected to the universe of the machine, and of the effacement of direct affective relationships between human beings. This connection is, undoubtedly, not false, and it is not by chance that the diseased world often assumes the appearance, these days, of a world in which mechanistic rationality excludes the joyous and continuous spontaneity of affective life. But it would be absurd to say that contemporary man mechanizes [*machinise*] his universe because he projects a schizophrenic universe in which he loses himself; [it would be just as] false to claim that he is schizophrenic because it is, for him, the only way to escape the constraints of his real universe.[61]

Invoking the language of Marxist humanism, Foucault contends that schizophrenia is neither a fantastic projection nor an escape from technology, but a psychological manifestation of the sociological problem of alienation, which itself is a consequence of the mechanization of the world.

This insight leads Foucault to advance a Marxist argument about the alienating effects of modern (i.e. capitalist) technology. 'In fact,' he writes, 'when man remains estranged from his own technique, when he can no longer recognize human or living meaning in the products of his activity, when economic and social determinants constrain him, while he is unable to find his home in this world, then he is living a conflict that makes the schizophrenic syndrome possible.' Foucault adds: 'The contemporary world makes schizophrenia possible, not because its techniques render it inhuman and abstract; but because man makes such use of his techniques that man can no longer recognize himself in them.'[62] In 1954, Foucault thus approached technology from the standpoint of a fairly conventional form of *marxisant* humanism, variations of which could be found in such contemporary writers as Friedmann, Crozier, Ellul, or Sartre (it is worth noting, too, that Foucault, like many postwar intellectuals, had joined the French Communist Party – albeit only briefly, between 1950 and 1952). The capitalist system, so the argument went, represents the alienation of human creative activity. Just as Marx had explained in the *Economic and Philosophical Manuscripts*, human labor becomes estranged from itself through the industrial process, as it is distilled into products that their creators no longer recognize as their own and in which they no longer find meaning. Consequently,

Foucault suggested, the psychological experience of alienation in schizophrenia was merely an extreme form of the social and economic experience of alienation inherent in capitalism, which manifested itself in the proliferation of technology. Indeed, the whole book is argued from the perspective of alienation, a concept that connects his views on madness to those on technology. In the conclusion, Foucault wrote that 'true psychology … like all sciences of man, must have as their goal to de-alienate him.'[63] Like many of his contemporaries, the young Foucault thus embraced the humanist position that the problem of technology was ultimately one of alienation.

Foucault's thinking about technology in the 1950s was not, however, confined to regurgitating the truisms about humanity and its alienated condition that were common currency among his contemporaries. Through his reflection on psychology as a 'technique,' he gradually began to conceptualize the position that would characterize his mature work and that would underwrite his distinctive ambivalence towards technology: specifically, an understanding of how psychology can become a technique of social control and how this development is related to a specific understanding of 'man.' Once he came to see the connection between psychology's oppressive embodiment of technique and its approach to studying human nature, the humanist theses he had defended in his first book lost their purchase.

As corollary, Foucault's studies and work in the field of psychology led him to doubt psychology's scientific status. It could be argued that the relativist views on science with which Foucault is associated originate less in an intention to cast doubt on the scientific enterprise in its totality than they do in a suspicion directed towards disciplines (of which psychology is the most striking example) that inhabit the border regions of scientific respectability. For instance psychology, Foucault maintained in the 1950s, is an inherently contradictory enterprise: it is constantly torn between the philosophical and hermeneutic task of interpreting human nature and a scientific aspiration to provide an objective description of human behavior and the operations of the mind. In a highly revealing but overlooked essay from 1957 entitled 'Scientific Research and Psychology,' Foucault illustrates this point with a telling anecdote. A renowned psychologist or 'white smock' (*blouse blanche*) asks a student (presumably Foucault) if he intends to study philosophical psychology in the style of Maurice Merleau-Ponty or Maurice Pradines, or scientific psychology in the tradition of Alfred Binet. From this remark, Foucault draws a perceptive conclusion: 'One of psychology's historical a prioris, in its current form, is this possibility of being, in a mode of exclusion, scientific or not.'[64] In other words, the question mark hovering over psychology's scientific status is constitutive of psychology as a field. Biologists, for instance, do not wring their hands over biology's status as a science when conducting their research. Psychologists, however, do. The problem, in a nutshell, is that applied psychology – i.e. psychological 'technique' – has no theory, while psychological research has no practice (or concrete applications). Foucault puts it as follows: 'the real practice of psychology – the one that is exercised or that should be exercised in the organization of work, in psychotherapeutic cures, or in education – rests on no theoretical foundation.' At the same time, 'the acquisition of the techniques that can guarantee concrete psychology a practical security and a theoretical justification does not by itself give access to a practice of psychology in which practice and research would be effectively tied.'[65] Lacking the status of a true science, there is no coherent relationship between psychology's theoretical and applied forms: psychological practice lacks a theory, while theoretical research in psychology finds no distinctive practical application.

It is, thus, the void lying at the heart of psychology – its tenuous scientific status – that allows it to become a technique of social control. In the 1950s, Foucault maintained,

psychology was assuming an increasingly technical character – witness, as he noted in 1957, the emergence of the profession of 'psychotechnician.'[66] Yet, psychological research finds itself in the ironic situation of organizing itself around a practical application that eludes it. Researchers in psychology feel compelled to demonstrate their field's 'positivity' precisely to the extent that they believe they must compensate for its lack of practical applicability. '*The non-existence of a psychological practice* that is autonomous and effective has become paradoxically *the condition of existence of psychological research* that is positive, scientific, and "efficient."'[67] Psychological research proves its validity 'in the deployment of techniques that mutually confirm one another and that are constructed like the imaginary architecture of a virtual practice.'[68]

Moreover, because psychology lacks an autonomous practice, it has to piggyback on practices that already exist, but which have no real need for psychological research to operate or to prosper. Foucault mentions 'psychometrics and the entire technique of tests,' a trend associated with the French psychologist Alfred Binet. Psychometric tests are designed solely to be used in concrete situations, yet they are only applied through 'extra-psychological practices,' which are ultimately driven by their own criteria. This can be seen in the relationship that clinical psychology aspires to have with medical practice: 'to bring to an already constituted practice technical perfections, the validity of which will be demonstrated by the fact that the medical clinic can completely do without them to achieve the same results.'[69] Psychological research, he adds, does not belong to a

> technical progress that gradually comes into its own light, it is the speculative back side of a practice that does not even acknowledge itself to be psychological. It can only present itself as the 'truth despite itself' of a practice; it demystifies [the practice]. But it merely borrows this truth from the reality of this practice, so that, consequently, [research] mystifies it.[70]

Psychology, for Foucault, thus amounts to a kind of intellectual confidence trick: its practical applications claims legitimacy from a theory that does not exist, while its theory justifies itself on the basis of practices that are not really its own. So what does this long digression on Foucault's early views on psychology have to do with his conception of technology (aside from a few passing references to 'psychological technique'?). In these writings, well before he had developed his most advanced philosophical positions (associated with the terms 'archaeology' and 'genealogy'), Foucault, by focusing specifically on the field of psychology, discovered a distinct relationship between a particular form of knowledge and a method of controlling human beings (which only later he would call a 'power technology'). Specifically, he argued that it was psychology's dubious claim to being a true science that led its practitioners to pursue techniques of social control: precisely because it lacks an autonomous application, psychological research is constantly striving to establish its empirical character and to prove its technical relevance.

The tension between psychology's problematic scientific status and its potential as a form of social control was particularly apparent, according to the young Foucault, in the case of '*la psychologie du travail*' or industrial psychology – the field that had caught the attention of Friedmann, Crozier, Ellul, and others. Like these observers, Foucault notes that industrial psychology provides counseling on such matters as career selection, while assisting workers in adapting to their jobs and work environment. Yet industrial psychology cannot overcome its mother discipline's fundamental void, which compels it to facilitate and streamline existing industrial practices rather than introducing a distinctive practice. Thus the industrial psychologist's desire to counsel workers and help them adjust to their workplace is ultimately subordinated to the constraints of an economic

context characterized by unemployment rates and a relatively low degree of worker specialization. In a situation in which these constraints did not exist – for instance, in an economy that had achieved full employment and demanded a high level of worker specialization – industrial psychology might well lay claim to being genuinely scientific. Where they do exist, industrial psychology can only serve as a mechanism of social control. Foucault explains:

> In psychology, when the conditions of a rational and scientific practice do not exist, science itself is compromised in its positivity; in periods of unemployment and overproduction, selection ceases to be a technique of integration to become a technique of exclusion and discrimination; in periods of economic crisis or of increases in the cost of labor, the adaptation of man to his profession becomes a technique that seeks to increase a company's profitability and to rationalize human labor as pure and simple production factor; in short, it ceases to be a psychological technique in order to become an economic technique.[71]

Foucault adds that the practical application of psychology is always directed at the obstacles faced by human organizations, rather than at positive or creative endeavors. In this context, he implicitly refers to the human relations movement, by way of its analysis of Taylorism's shortcomings. 'The psychology of the adaptation of man to work is born of forms of non-adaptation that followed the development of Taylorism in America and Europe.'[72] Psychology's lack of a characteristic practice had led it, Foucault implied, to make a Faustian pact with modern industrial system, where it gained stature only by enhancing capitalism's technical efficiency. Once again, Foucault's insight is that it is the discipline's own intellectual incoherence that explains how it became an incipient 'political technology.'

   The fact that psychology can be used as a straightforward technique of social control distinguishes it from more 'reputable' sciences. Thus Foucault contends: 'Whereas a physics or a biology that is determined by economic and social reasons remains a physics or a biology, psychological techniques, as a result of some of their conditions, lose their validity, their meaning, their psychological foundation; they disappear as applications of psychology and the psychology in the name of which they present themselves forms nothing but the mythology of their truth.' Foucault adds that whereas the 'techniques of physics, chemistry, and biology are *utilizable*,' the 'techniques of psychology are, like man himself, *alienable*.'[73] In short, Foucault draws an important distinction between the 'hard' sciences and psychology, as well as between their respective techniques: the former can be deployed for multiple ends without losing their scientific character, while the latter are susceptible to relinquishing, through technical application, their 'essence.'

   For Foucault, the fundamental problem with psychology, and the reason why it has 'alienated' itself in becoming primarily a technique of social control, lies in its wrongheaded and improper 'positivism': specifically, its view of human beings as measurable and objectively knowable rather than as intrinsically hermeneutic. Psychology's shortcomings ultimately derive from the fact that it seeks positive knowledge of a being – 'man' – that is not positively knowable. The very task of seeking positive knowledge of human beings is condemned to failure. Foucault concludes the 1957 essay with an exhortation for psychologists to abandon 'the myth of positivity' – the idea, that is, that the human being can be objectively known. Instead, psychology should return to its 'space inside man's negative dimensions' – the experiences of madness, death, and transgression that, Foucault, maintained, are psychology's 'original homeland.' In this way, Foucault had already begun to explore the idea that claims made in the name of 'man' – in this case,

positive knowledge of human beings – not only run into a dead-end, but ultimately authorize and enable the technical control of human existence. He had, in other words, begun to toy with the notion that positive knowledge of the human was restrictive rather than liberating – the idea that would receive its most elaborate formulation in 1966's *The Order of Things*. Only by abandoning the claim that there is an essential human being to be known could psychology, Foucault wagered, save itself from its deep complicity with the contemporary technological orientation.

Foucault began his early period by endorsing the views he later associated with post-war humanism. Mental illness, he suggested, was in part a reaction to the experience of living in a dehumanized, mechanistic world. However, he came to see psychology's complicity with oppressive 'human techniques' like those practiced by industrial psychologists as resulting from its positivist orientation towards the study of human beings. While this position did not entirely purge his thought of humanism – it was still possible for him to denounce contemporary psychology's positivistic conception of human being in the name of a more authentic humanism (grounded in hermeneutics or 'negativity') – it did lead Foucault to see the idea of 'man' as the source of psychology's problematic identity. In this way, the project of formulating a critique of techniques of social control that was not grounded in a conception of human nature had begun to emerge in Foucault's thought.

1961–1972: Technique between Knowledge and Power

In 1962, eight years after its first appearance, Foucault reissued his first book, *Maladie mentale et personnalité*, with significant revisions – so many, in fact that he even modified the title itself, calling it *Maladie mentale et psychologie* ('Mental Illness and Psychology'). In particular, Foucault dramatically altered the meaning of the passage (discussed above) addressing the relationship between psychology and technical society. Intriguingly, he excised almost all the references to 'technique' that had appeared in the 1954 edition (a fact that has, to my knowledge, not previously been noted).[74] For instance, in the earlier text, Foucault had written: 'when man remains alien to his own technique … he is living a conflict that makes possible the schizophrenic syndrome.'[75] In the 1962 edition, Foucault replaced 'technique' with 'language.' As a result, the corresponding passage reads: 'when man remains alien to what is happening in his *language* … then he is living in a culture that makes possible a pathological form like schizophrenia.'[76] Similarly, in the 1954 volume, Foucault had concluded: 'The contemporary world makes schizophrenia possible, not because its techniques render it inhuman and abstract; but because man makes such use of his techniques that man can no longer recognize himself in them.'[77] In the 1962 version, this passage becomes: 'The contemporary world makes schizophrenia possible, not because *events* render it inhuman and abstract; but because *our culture* proposes a reading of the world such that man can no longer recognize himself in it.'[78]

This abandonment of references to 'technique' in the new edition tracks Foucault's rejection of Marxism: he no longer considers technology and the modern productive system as the social basis for mental illness, but rather 'language' and 'culture.' These terms further indicate Foucault's growing interest in linguistics and structuralism, which would mark most of his work of the 1960s.[79] It was during this decade that Foucault's works earned him public recognition. Following the publication of *The Order of Things* in 1966, he was particularly associated with the rise of structuralism in French thought (despite the fact that Foucault himself never explicitly self-identified with it) and his

name was often mentioned in the same sentence as as that of contemporary thinkers such as Claude Lévi-Strauss, Roland Barthes, Jacques Lacan, and Louis Althusser. In most of his studies from this period, Foucault's earlier interest in techniques of social control yielded to an overwhelming emphasis on epistemology (resulting in the elaboration of his signature concepts of *savoir*, discourse, and episteme), even if the former was often implicit in the latter. In this context, the problem of 'human technique' fell provisionally (if incompletely) into abeyance. Even so, over the course of this period, Foucault managed not only to purge his thought of its remaining humanist residues, but also to develop an increasingly sophisticated account of the historical origins and epistemological underpinnings of humanism and the 'human sciences.' When he returned, in the early 1970s, to his earlier interest in 'political technologies,' he was able to do so without the humanist baggage that had saddled his earlier writings. The stage was set for Foucault's characteristic perspective on technology, in which deep skepticism about the application of technological principles to the management of society blends with a form of theoretical anti-humanism that, in certain circumstances, conceives human beings as analogous to technological phenomena.

In Foucault's magisterial doctoral dissertation, published in 1961 as *Histoire de la folie à l'âge classique* – later translated into English as *Madness and Civilization* – he developed, on a vast historical scale, some of the insights he had proposed in his 1957 article about the way in which psychological (or proto-psychological) practices constitute a technique of social control comparable with those witnessed in the forms of industrial psychology that had captured Foucault's attention in the late 1950s. *Madness and Civilization* is an exploration of the Western 'experience' of madness from the Middle Ages to the early nineteenth century. Over time, Foucault argues, human beings have lost the ability to 'listen' to madness – and specifically, to grasp its ontological significance. Foucault traces this story over roughly three epochs (an approach to chronology that would become a trademark of his work). During the medieval period, the mad, though marginalized, are taken very seriously from a theological perspective: they are seen as the incarnation of human finitude, living emblems of the ultimate frailty of the human condition. In the early modern period, however, the mad, along with the sick, the indigent, and other perceived menaces to the social order, were rounded up into the newly created the institution of the 'Hospital General.' Just as the mad were, institutionally, being lumped together with other disorderly elements, madness was, epistemologically, subsumed into the broad category of 'unreason,' a term denoting the stubborn refusal of the 'insane' to accept the strictures of logic and common sense. In the modern period (beginning in the eighteenth century), madness is finally pathologized: it becomes 'mental illness.' Institutionally, this shift is marked by the birth of the asylum. Madness ceases, in short, to have any 'meaning,' telling us something about who we are or the world in which we live. Its reality is purely positive.

In this narrative, Foucault uses 'technique' to describe the various therapeutic strategies used by psychologists and their forerunners to cure, control, and chastise the mad. Yet these techniques are always paired with a specific understanding of madness that prevails at a particular time. For instance, in the early modern age, techniques were devised to treat the mad as individuals who had made the perilous choice of 'unreason' over 'reason.' Consequently, the goal of these techniques was to persuade the mad of their errors, by coaxing them back to the real world. Summarizing Foucault's argument, Paul Rabinow and Hubert Dreyfus explain that the mad 'must be brought back to an affirmation of social standards by a series of techniques of retraining, consciousness alteration, and discipline of both the body and the psyche.'[80] Compared with the relative fluidity of the

Middle Ages, during which the mad, however stigmatized, roamed the cities and the countryside with relative freedom (a fact that Foucault brings to light in his virtuosic depiction of the 'ship of fools'), the seventeenth century is an era consumed with order and calculation. Foucault describes the 'correctional world' of internment that was generalized in this period as a 'social mechanism.'[81] It is precisely madness' disorder and illogic that offends the era's dominant sensibilities. In this period, two kinds of technique – 'two technical universes' – for treating madness prevailed: a 'technique of metaphors,' directed at madness conceived as passion, which sought to impact the soul by targeting parts of the body that were metaphorically related to it; and a 'technique of language,' aimed at madness conceived as delirium, which sought to cure the mad by showing them the error of their words.[82]

Techniques for curing the mad became even more sinister, however, in the late eighteenth century, when madness came to be seen not merely as 'unreason,' but 'mental illness.' The reason, Foucault argues, is that mental illness is a category that is directly related to the modern notion of 'man.' Extrapolating from the argument he made in the 1950s, Foucault contends that the construction of madness as mental illness, which represents the beginning of psychology, occurs when madness is grasped as an object of positive knowledge and that the content of this knowledge is considered 'man' himself. 'Positivism … will admit from the outset, as an objective truth, that the truth of madness is the reason of man, which completely reverses the classical conception, according to which the experience of unreason in madness contests everything in man that could be true.'[83] He adds that 'a three-term anthropological structure – man, his madness, and his truth – has replaced the binary structure of classical unreason (truth and error, world and fantasy, being and non-being, Day and Night).'[84] The distinctly modern outlook – which Foucault associates with Philippe Pinel, Samuel Tuke, and the birth of the asylum – seeks to cure mental illness by creating institutions that, rather than dispelling unreason, purport to confront the mad with their own inner truth. This conception of madness has its own characteristic techniques, even if it borrowed practices from earlier periods. Thus the shower was a 'privileged technique' in Pinel's arsenal of therapeutic practices, among other 'famous techniques used in asylums like Charenton at the end of the eighteenth and the beginning of the nineteenth centuries.' Whereas water had long been used to treat the mad, its goal was now 'to reduce the individual to his simplest possible expression,' offering him the possibility of a 'second birth.'[85]

This new conception of madness put older techniques to work for new ends. The classical idea that unreason could be cured through 'movement cures' took on a new meaning in the early nineteenth century with, for instance, Mason Cox's 'rotary machine,' in which the patient is suspended from a beam and spun around in circles. With this 'centrifugation' of madness, Foucault remarks, movement 'no long aims to restore the patient to truth of the external world, but only to produce a series of internal, purely mechanical and purely psychological effects …. In this reinterpretation of the old method, the organism is only brought into relationship with itself and its own nature, whereas in the initial version, what was to be restored was its relationship to the world, its essential bond to being and truth.' It is not surprising that in this context, a technique first designed to 'dispel error by restituting madness to the world's dazzling truth' is reduced, with the advent of psychology, to a method for 'regulating and punishing.'[86]

In *Madness and Civilization*, Foucault's emergent views on 'technique,' first developed in his articles from the 1950s, become apparent (even though the term itself is only used sporadically). He uses 'technique' to refer to a range of repressive medical and psychological practices – cold showers, the rotary machine – in a way that harks back to his

earlier suspicion of industrial psychology. Yet rather than denouncing the dehumanizing effects of such techniques, he argues that they become all the more insidious when madness becomes tied to a conception of 'man' – when the early modern idea of 'unreason,' which amounted to a negation of the rational truth of the world, gives way to the modern notion of mental illness, which is based on the positivist aspiration to capture the 'truth of man.' Technique is oppressive, but 'man' is in no way the cure.

In the three remaining books Foucault wrote during the 1960s, the notion of technology as a mechanism of social control fades away. His focus shifts to the historical study of systems of knowledge, a theme that was already present in his writings on psychology and madness. Thus his next major work, *The Birth of the Clinic*, published in 1963, represents, as Dreyfus and Rabinow observe, an 'extreme swing toward structuralism,' in its 'attempt to find the silent structure which sustains practices, discourses, perceptual experience (the gaze), as well as the knowing subject and its objects'[87] – structures, in short, that make meaning possible yet which themselves lack any inherent meaning. The name that Foucault gave to his philosophical project of tracing the evolution over time of knowledge structures was 'archaeology,' a term that appears in *The Birth of the Clinic*'s subtitle: 'An Archaeology of Medical Perception.'

In his archaeological phase, Foucault's concern with the overarching principles governing knowledge structures – and, specifically, the kinds of subject–object relations they create – offered technology little explanatory value. The story of knowledge is that of seismic epistemological shifts, not technical innovation, creative know-how, or fortuitous tinkering. The medicine practiced in the modern clinic is not simply an incremental improvement over its predecessors, but a wholesale rearrangement of knowledge and perception: 'The access of the medical gaze into the sick body was not the continuation of a movement of approach that had been developing in a more or less regular fashion since the day when the first doctor cast his somewhat unskilled gaze from afar on the body of the first patient; it was the result of a recasting at the level epistemic knowledge (*savoir*) itself, and not at the level of accumulated, refined, deepened, adjusted knowledge (*connaissances*).'[88] In this context, 'technique' simply refers to procedures by which the knowing subject apprehends the object of its knowledge. These techniques are thus contingent on a specific kind of *savoir* and the subject–object relations that it allows. For instance, anatamo-clinical knowledge, abandoning the view that disease is the accidental form of an essence manifesting itself in a particular body, grasps disease as a mutation of the organs that assumes a unique character in each patient. However, disease's pathological nature only becomes fully visible at death, when a body can be opened up and examined in an autopsy. 'Pathological anatomy' thus entails a 'technique of the corpse.'[89] Death 'is turned for the first time into a technical instrument that provides a grasp on the truth of life and the nature of illness.'[90] Medical knowledge has ceased to be a 'semiology' or a 'reading,' but a 'set of techniques that make it possible to constitute a *projective pathological anatomy*' – one that, as it were, tries to glimpse the corpse-to-be in the patient's all-too-living body.[91]

Yet while in *The Birth of the Clinic*, technique as social control gives way to technique as an instrument of *savoir*, one theme connects it with Foucault's earlier concerns: the claim that modern knowledge's most characteristic trait is its attempt to achieve positive knowledge of human beings. 'It is understandable, then,' Foucault writes, 'that medicine should have had such importance in the constitution of the new sciences of man – an importance that is not only methodological, but ontological, in that it concerns man's being as an object of positive knowledge.'[92] Foucault further argues that a major implication of this development is that human finitude itself becomes something

'positive': 'the anthropological structure that then appeared [once death became the lens through which disease was understood] played both the critical role of limit and the founding role of origin.'[93] In other words, the recognition of human existence's finite character becomes a precondition for positive knowledge (whereas Aristotelian forms, because they are eternal, give rise to speculative or exclusively theoretical reasoning).

At this point, Foucault intriguingly suggests that the positive value that modern *savoir* places on finitude explains the technological character of the contemporary world. He writes: 'medicine offers modern man the obstinate, yet reassuring face of his finitude; in it, death is endlessly repeated, but it is also exorcized; and although it ceaselessly reminds man of the limit that he bears within him, it also speaks to him of that technical world that is the armed, positive, full form of his finitude.'[94] These lines are cryptic and undeveloped, but Foucault appears to suggest that man's understanding of disease via death triggers the development of technologies for warding off death. In this way, Foucault returns to one of his original insights: there is a close connection between the construction of 'man' as a positive object of knowledge and the emergence of a 'technical world.'

Foucault's next major work,[95] *The Order of Things: An Archaeology of the Human Sciences*, published in 1966, is the masterpiece of his archaeological period. It is a continuation of *The Birth of the Clinic* in the primacy it accords to epistemic structures and in the relatively minor role it gives to 'technology.' In it, Foucault contends that *both* science and technology are determined by the objects and forms of subjectivity that *savoir* inaugurates and interrelates. 'It is fundamental modes of *savoir* that support, in their flawless unity, the secondary and derivative correlation of new sciences and techniques with hitherto inexistent objects.'[96] Rather than making technology subordinate to science, Foucault maintains that both science and technology are epistemologically contingent on *savoir*.

Above all, in *The Order of Things*, Foucault builds his entire thesis around one of the arguments that he had been consistently developing in his previous books: that modern knowledge is directed at positive knowledge of 'man.' The Renaissance and the classical age (i.e. the seventeenth century), he asserts, have much to say about 'man,' but they have no 'science of man' – in other words, they do not hold that there is a body of knowledge or mode of enquiry that is specifically predicated of human beings. The 'human sciences' only emerge in the modern age, when 'man' simultaneously becomes a subject and object of knowledge. It is striking that Foucault associates modernity not with the rise of the natural sciences and their technological applications, but rather with the epistemological birth of 'man' and the human sciences.

The episteme (the term which Foucault coins to refer to the 'historical a priori' or *savoir* prevailing at a particular epoch) that existed during seventeenth and early eighteenth century, which Foucault calls the classical episteme, is founded on a 'mathematization' of the universe – that is, the view that the world can be grasped through a universal science or *mathesis universalis*. Consequently, knowledge, in the classical episteme, is organized according to the twin principles of 'measurement' (unities between which relationships of equality and inequality exist) and 'order' (the arrangement of entities according to regular gradients of difference). Modernity entails, however, a 'retreat of the *mathesis*' and a 'de-mathematization' of the world.[97] Where the classical episteme is founded on the idea of a rationally organized universe, the modern episteme is premised on 'man' as an 'empirico-transcendental' being – that is, as a being that is both the subjective condition of all possible knowledge and the object of a distinctive form of positive knowledge.

Foucault thus breaks with the tradition of European thought that locates the essence of modernity in an objective, mathematized conception of the cosmos, such as Martin Heidegger's notion of the technological 'enframing' of being or Husserl's conception of a science that has lost its grounding in the human *Lebenswelt*. 'It is the retreat of *mathesis*,' Foucault observes, 'and not the advance of mathematics that has allowed man to constitute himself as an object of knowledge.'[98] Heidegger saw the rise of technology and the 'humanization' of the world as part of the same (negative) process.[99] Foucault, interestingly, distinguishes the two (to the extent, that is, that the mathematization of reality belongs to the story of technology's rise): 'the human' becomes the organizing principle of the modern episteme in that humanity is no longer seen as one reality among others that is subject to mathematical laws, but as a *sui generis* being that can be the object of its own positive knowledge (and, at the same time, the subjective condition of knowledge as such).[100] While the question of technology is almost completely absent from *The Order of Things* (even in the sense of an instrument of *savoir*, as in *The Birth of the Clinic*), it nonetheless impinges on the book's argument in several ways. First, Foucault suggests (like Heidegger) that if the modern world is technological, it is because it is 'all too human' rather than not enough. Second, by arguing that 'man' is a provisional and historically contingent effect of an episteme, Foucault completes his break with humanism.

In 1969's *The Archaeology of Knowledge*, the question of technique once again makes only a minor appearance. Foucault intended the book as a retroactive exposition of the methodology he had developed over the previous decade. Consequently, the *Archaeology* is primarily dedicated to explicating Foucault's concept of *savoir*. If 'discourse' refers to knowledge's linguistic conditions of possibility (the objects, utterances, concepts, and strategies that define a field of possible knowledge), *savoir* is what one can do with discourse – as Foucault puts it, 'that of which one can speak in a discursive practice.'[101] As such, *savoir* includes: a domain of objects, an array of subject positions, a system for coordinating and hierarchically organizing concepts and utterances, and a series of practical applications. As for science, it is something that happens to *savoir*. 'Sciences,' Foucault writes, 'appear in the element of a discursive formation and against the background of a *savoir*.'[102] In other words, before a proposition can be true or false (which is the province of science), it must be 'in the truth' (which is the realm of *savoir*).[103]

On the face of it, *savoir* appears to be a nearly Kantian epistemological position, in which historically situated discourse, rather than *a priori* forms of perception and understanding, defines the transcendental conditions of knowledge. *Savoir*, though, also has a pragmatic dimension, which has implicit implications for the understanding of technology. First, as Foucault repeatedly emphasizes, *savoir* arises not simply from discourse, but from 'discursive practices': it consists not of principles and theoretical positions, but of speech acts, utterances, regulated conduct, and strategic interventions. Second, *savoir* is not a purely ideational phenomenon that informs or is applied to practical activity. Practical activity and 'techniques,' Foucault contends, can in and of themselves be forms of *savoir*. The example he mentions is that of painting. Archaeology does not try to determine a painter's 'implicit philosophy' or 'worldview,' nor does it seek to identify what she may have 'borrowed' from science. Rather, archaeology would inquire if *savoir* not only infuses a painter's ideas and training, but also shapes 'the procedures, the techniques, and almost the very gesture of the painter.' 'One must show,' Foucault adds, 'that in at least one of its dimensions, [painting] is a discursive practice that is embodied in techniques and in effects.'[104] Thus even in the books where Foucault would appear to

give the greatest explanatory value to epistemology, he makes it clear that epistemology also informs practice: techniques are just as infused with *savoir* as science, even if the former consist of practical know-how rather than theoretical knowledge. Moreover, the theory of meaning laid out in the *Archaeology*, in which impersonal linguistic systems are presented as knowledge's conditions of possibility, definitively seals his break with humanist philosophies that emphasize the centrality of consciousness and its intentional states.

Only in the lectures that Foucault delivered between 1970 and 1971 at the Collège de France – his first course following his election to the country's most prestigious academic institution – did Foucault finally return to the theme of technology as a form of social control, which had been in abeyance from his work since *Madness and Civilization*. This occurred at the very moment when his archaeological methodology was evolving into the project he would name 'genealogy.'[105] The course deals with nothing less than the origin of the Western conception of truth – which, following Nietzsche, he calls the 'will to truth' – in ancient Greece. In this story, technology plays an unexpectedly important role. Compared with the heavy emphasis on epistemology in *The Order of Things* and *The Archaeology of Knowledge*, the 1970–1971 course is noteworthy for its attentiveness to the role of material and political factors in historical change (without ever quite assuming a Marxist character).

The West's distinctive conception of truth, Foucault demonstrates, is tied to a series of transformations that occurred in Greek society between roughly the eighth and sixth centuries BCE, many of which were technological. The Doric invasions, Foucault explains, triggered the development of 'techniques of iron,'[106] which were further spurred by colonization. As a result, a new kind of military force became possible, composed of soldiers holding shields in their right hands and a javelin or a sword in the other. Within city-states, these changes resulted in a dramatic change in the status of soldiers: the isolated warrior in his chariot gives way to an armed citizenry. With this new military technology, the actions of individual soldiers are closely synchronized: hoplites

> walk side by side, coordinate their movements, switch together from the javelin to the sword, escape leaves them with no protection. The reciprocity of service and assistance, the synchronization of movements, the spontaneous regulation of the whole to achieve ultimate harmony are all implied by the hoplite strategy.[107]

This passage remarkably presages Foucault's analysis of discipline, particularly his discussion of the role of early modern drill techniques in shaping a 'political technology of the body.'[108]

Through an historical investigation into Western ideas of truth – a theme closely tied to his archeological project – Foucault is led back to his former interest in technologies of social control. Technological change in ancient Greece not only had important consequences for the social distribution of knowledge, it also created new forms of social regulation, as his discussion of the hoplites attests. Yet he also suggests that technology not only caused these changes, but characterizes them: the world of iron tools, hoplites, a new artisan class, the *polis*, and Solon's laws was one in which technological values were gradually taking hold. In city-states inhabited by citizen-soldiers and artisan-merchants, values such as measurement (or '*mesure*,' which can also mean 'moderation') and order were on the rise.[109] The most important consequence of this transformation is the invention of a conception of truth in which knowledge depends on verifiable procedures and a concomitant notion of law. It displaced the paradigm of truth that had prevailed in the

Homeric age, which found its definitive expression in the juridical experience of the ordeal: rather than being generated by rational procedures of verification by an investigator who professes his disinterestedness, truth, in this model, was an event, an epiphany springing from a life-and-death struggle between two parties, the outcome of which was highly uncertain.

Foucault locates the decline of this older paradigm and the onset of the new dispensation in *Oedipus Rex*. The Theban king of Sophocles' play can be seen as a symbol of the decline of archaic knowledge and the rise of a new form of knowledge, which Foucault calls 'discovery' (*découverte*) or 'investigation' (*enquête*). The latter, which is illustrated in *Oedipus Rex* by the king's attempt to get to the bottom of the plague with which his city has been afflicted, is 'technical' in that it involves a deliberate employment of human art and skill. Foucault observes:

> Oedipus' τεχνή, we see, is not aligned with the knowledge of the gods, who fix the destiny of men in advance, but to the discovery of what has happened and what is happening. It does not listen to the words of the gods, which bind men once and for all: it brings its attention to those inequalities, those digressions, those ups and downs that make up Fortune.[110]

Oedipus is not a hero rendered ignorant by his hubris, as a certain interpretative tradition characterizes him, but the trailblazer of a new form of knowledge – one that is analytical, systematic, and 'technical.' With the 1970–1971 course, Foucault, after having completely extricated himself from philosophical humanism in his works from the 1960s, had returned once again to a consideration of the relationship between conceptions of truth and knowledge and techniques of social control. The stage was set for Foucault's most important engagement with technology, which would occur in his political texts of the 1970s.

1973–1979: Technologies of Power

In the wake of the massive student and worker strikes of May 1968, which challenged the status quo in seemingly every realm of French society, the question of the nature and functioning of authority became unavoidable, particularly for a philosopher like Foucault whose work, in examining the subtle domination at play in institutions and discourses, already seemed to offer implicit insight into the problem. Yet while both his scholarly work and political commitments (the 1970s was his most intense period of activism) were in many ways characteristic of the 'post-1968' contestation, Foucault proved highly original in the conception of power that he endorsed during these years. He rejected the view, embraced by many a leftist intellectual or student radical, that power is synonymous with repression – that power simply says 'no.' Steeped in the works of Friedrich Nietzsche, Foucault maintained that power was also (and perhaps primarily) a productive force: far from limiting and denying, power also shaped behavior, elicited action, and even created new ways of being a self. The traces of power, as it were, had to be discerned as much in its creative capacities as in its repressive character – not least because power could be resisted only with power. It was thus incumbent upon activists, Foucault believed, to acknowledge that power was not inherently 'bad' and that it was somehow neutralized when it was wielded for a good cause. All human relations, he ultimately maintained, were traversed by power dynamics.

In the early 1970s, Foucault experimented with the practical consequences of these ideas, notably in his work for the Prison Information Group (known by its French

acronym, GIP), which sought to unveil the power mechanisms at play in French prisons while simultaneously empowering prisoners. Thus with his Nietzschean understanding of power, Foucault found yet another way to break with humanism: whereas other prevalent ideologies, such as Marxism and psychoanalysis, implied that human beings (at least in a non-alienated condition) were naturally inclined to free themselves from power and that power is, in some sense, ultimately inhuman, Foucault embraced a conception of power that dispensed with such assumptions about human nature, and that even went so far as to contend that the belief in human nature was an effect of particular power relations.

The frequency with which Foucault spoke about 'technology' beginning in the early 1970s was a direct consequence of this new way of thinking about power, specifically as Foucault tried to understand the paradigmatic modern power formation that he called 'discipline.' Disciplinary power, which regiments the human body, is the phenomenon that would introduce the words 'technique' and 'technology' into Foucault's lexicon on a frequent and regular basis. Yet by this time, Foucault had also rejected and demytholo- gized (in his mind) the humanist account of subjectivity. Thus at the same time that Fou- cault's concern with analyzing technologies of power (in order to suggest how they might be resisted), he embraced a distinctly affirmative technological rhetoric, designed to avoid the pitfalls of philosophical humanism.[111]

Foucault's renewed interest in power techniques also involved a return to the topic he addressed in his first published work: psychology. Though Foucault's best-known discus- sion of 'power technologies' are found in *Discipline and Punish* (1975), the concept was first formulated as early as 1973 in his lecture course on 'psychiatric power' (when they are eventually published, the 1971–1972 and the 1972–1973 courses will indicate if these ideas had caught his attention even earlier).[112] Foucault conceptualized disciplinary power by distinguishing it from sovereignty, as he made clear in his November 14, 1973 lecture: 'Whereas sovereign power is expressed through the symbols of the dazzling force of the individual who holds it, disciplinary power is a discreet, distributed power; it is a power which functions through networks and the visibility of which is only found in the obedi- ence and submission of those on who it is silently exercised.' Disciplinary power, he adds, is 'anonymous, multiple, pale, colorless.'[113]

Two years before the publication of *Discipline and Punish*, he describes Jeremy Ben- tham's book *Panopticon* (published in 1791) as 'the most general political and technical formula of disciplinary power.'[114] Yet the main context in which Foucault begins to describe disciplinary power as a 'technique' or 'technology' concerns the way in which it constitutes the individual, by pinning down the human body and regulating it by invest- ing it with subjectivity. The major effect, he explains, of disciplinary power is 'the reor- ganization in depth of the relations between somatic singularity, the subject, and the individual.'[115] Whereas sovereign power is highly personalized, disciplinary power has the anonymity of a machine or a technical process: 'A disciplinary system is made so that it works by itself, and the person who is in charge of it, or its director, is not so much an individual as a function that is exercised by this and that person and that could be equally exercised by someone else, which is never the case in the individualization of sovereignty.'[116]

With sovereign power individualization occurs at the top (i.e. in the person of the king), whereas with disciplinary power it takes place at the base. Specifically, discipline makes bodies docile by submitting them to the regulation of an individual conscience – or, as Foucault puts it, in 'disciplinary power, … the subject-function is fitted exactly on the somatic singularity: the subject-function of disciplinary power is applied and brought to bear on the body, on its actions, place, movements, strength, the moments of its life,

and its discourses, on all of this.' We can thus say, Foucault concludes, that discipline is 'that technique of power by which the subject-function is exactly superimposed and fastened on the somatic singularity.'[117] On this basis, it is misleading to view individuality simply as a product of the capitalist economy and bourgeois politics. Foucault explains:

> I think we should … see the real constitution of the individual on the basis of a certain tech-nology of power. Discipline seems to me to be this technology, specific to the power that is born and develops from the classical age, and which, on the basis of this game of bodies, isolates and cuts out [i.e. delineates] what I think is an historically new element that we call the individual.'[118]

A passage in the 1973–1974 course reveals the various imperatives that informed Foucault's increasing use of 'technology' in this period. He uses the term simultaneously to critique the regimentation and normalization that characterizes disciplinary power and to sidestep assumptions about the natural or transcendental character of individuality implicit in humanist discourse. Foucault connects these ideas by claiming that, in the nineteenth century, the 'bourgeoisie' invoked, at a theoretical level, the juridical category of the contracting individual to assert its political legitimacy, while, at a practical level, employing disciplinary technology to create a form of individuality (or individuality *tout court*) consistent with the requirements of capitalist production:

> We could say, if you like, that there is a kind of juridico-disciplinary pincers of individualism. There is the juridical individual as he appears in these philosophical or juridical theories: the individual as abstract subject, defined by individual rights that no power can limit unless agreed by contract. And, beneath this, alongside it, there was the development of a whole disciplinary technology that produced the individual as an histori-cal reality, as an element of the productive forces, and as an element also of political forces. The individual is a subjected body held in a system of supervision and subjected to procedures of normalization.[119]

'Technology' is thus both a form of power that 'produces' individuals in ways that integrate them into political and economic structures by supervising, subjecting, and normalizing them, and a term that dispels the illusion of the 'the individual as abstract subject, defined by individual rights.'

This insight into political and economic relations has implications for *savoir* as well, notably in the way that it helps us to understand the human sciences (to which several of Foucault's books of the 1960s were devoted):

> The function of the discourse of the human sciences is precisely to twin, to couple this juridical individual and disciplinary individual, to make us believe that the real, natural, and concrete content of the juridical individual is the disciplinary individual cut out and constituted by political technology. Scratch the juridical individual, say the (psychological, sociological, and other) human sciences, and you will find a particular kind of man; and what in actual fact they give as man is the disciplinary individual. Conjointly, there is the humanist discourse that is the converse of the discourse of the human sciences, taking the opposite direction, which says: the disciplinary individual is an alienated, enslaved individ-ual, he is not an authentic individual; scratch him, or rather, restore to him the fullness of his rights, and you will find, as his original, living, and perennial form, the philosophico-juridical individual. This game between the juridical and the disciplinary individual under-lies, I believe, both the discourse of the human sciences and humanist discourse.[120]

Both the disciplined individual rationalized by the human sciences and the 'authentic' individual enshrined in legal discourse must, Foucault implies, be viewed with suspicion. Both justify in different ways the political technology that creates individuals. Yet the suspicion directed at each is of a different degree. The human sciences take the individual that is *actually* created by disciplinary power for real. Yet humanist discourse rests on a premise that Foucault, elsewhere in his work, made clear he considered fictitious: the belief in an essential human nature or a transcendental subject. Indeed, the 'humanist' position he criticizes in this passage is clearly reminiscent of his own position in 1954, when he wrote: 'when man remains alien to his own technique, when he can no longer recognize human or living meaning in the products of his activity, when economic and social determinants constrain him, while he is unable to find his home in this world, then he is living a conflict that makes possible the schizophrenic syndrome.'[121] Foucault sums up his new standpoint, in which the practical critique of disciplinary technology converges with his theoretical preference for the technological account of individuality, at the conclusion of his November 21, 1973 lecture: 'From this oscillation between the juridical individual – ideological instrument of the demand for power – and the disciplinary individual – real instrument of the physical exercise of power – from this oscillation between the power claimed and the power exercised, were born the illusion and reality of what we call Man.'[122]

During the 1970s, 'technology' takes on a neutral or even positive valence in Foucault's writing because it is instrumental to his project of elaborating Nietzschean, anti-humanist conception of power. The range of meanings associated with 'technology' proved essential, in Foucault's eyes, for emancipating oneself from the view that power alienates the 'the philosophico-juridical individual' from its 'original, living, and perennial form.' In the first place, to speak of a 'technology of power' is to call attention to the fact that power is not simply ideational, but an eminently concrete force that is primarily directed at human bodies. In an interview published in 1974, Foucault explained:

> Political power, before acting on ideology, on the consciousness of individuals, exerts itself in a much more physical way on their bodies. The way in which gestures, attitudes, usages, allotments in space, and modalities of housing are imposed – this physical, spatial distribution of people belongs, it seems to me, to a political technology of the body.[123]

This use of 'technology' draws on the semantic register to which the term belonged in French debates about Taylorism, Fordism, and industrial psychology in the 1940s and 1950s.

Moreover, conceiving power as a technology challenges the humanist assumptions lurking within Marxism. At Pomona College in May 1975, Foucault explained that, contrary to the Marxist view, according to which there is a one-way relationship between production and power (i.e. ownership of the means of production results in power), there are 'multiple relationships' between 'technologies of power and the development of productive forces.' The Marxist claim that man is an essentially productive being overlooks the fact that power mechanisms are required to render the body economically productive in the first place: 'Work is not man's essence,' he explains. 'If man works, it is because the human body is a productive force, it is because man is obliged to work. And he is obliged, because he is invested by political forces, because he is caught up in power mechanisms.'[124]

Not least, the notion of power as a technology allowed Foucault to explain how power is productive and creative (in the sense that it 'makes things happen' – activity,

behaviors, even ways of being a self) rather than merely repressive and prohibitive. In a lecture delivered in Brazil in 1976, he explained his project as developing 'an analysis of power that would not simply be a juridical, negative conception of power, but the conception of a technology of power' – which would 'emancipate itself from the primacy, the privilege of the rule and prohibition, which has, ultimately, reigned over ethnology from Durkheim to Lévi-Strauss.'[125] In these ways, the notion of technology – understood as processes that are directed at organizing the concrete behavior of human bodies and that, unlike legal norms, stimulate and incite rather than repress – fulfilled a 'positive' mission for Foucault, contributing to the elaboration of his anti-humanist account of power.

Yet at the same time, it is equally clear that Foucault also used 'technology' to refer to disconcerting forms of social control. In particular, he used the term technology to describe exertions of power that are based less on overt violence than on the subtle manipulation of human behavior – in which bodies are prodded in certain directions, molded according to particular norms, and forced to act in coordination with one another. From this perspective, the critical change in the history of punishment occurred when penal institutions became less concerned with punishing criminals than reforming them. In 1977, Foucault asserted: 'It is with the substitution of the crime for criminal [around 1880] that things pivoted and it became possible to think: "If one is dealing with a criminal, punishment no longer has any meaning, unless punishment is inscribed in a technology of human behavior."'[126] Often, this kind of power tries to remodel the individual in keeping with scientific conceptions of normality. Thus medicine,[127] Foucault explained to an Italian journal in 1977, 'distinguishes the normal from the abnormal… it gives itself, it seeks to give itself corrective means that are not exactly punitive means, but means for transforming the individual, an entire technology of the human being that is tied to it'[128] (Foucault's words here are reminiscent of Jacques Ellul's notion of 'human technique'). In this way, while 'technology' played a positive role in Foucault's elaboration of an anti-humanist account of power, he also used it in a distinctly more critical vein to describe practices of social control in modern society that have assumed a technical, rationalized character.

Foucault's most sustained and important development of his concept of 'political technology' is found in his 1975 history of the modern prison, *Discipline and Punish*. Though the body, Foucault contends in the opening chapter, has long been the object of historical study, it has rarely been noticed that it is 'directly involved in the political field' and that 'power relations have an immediate hold upon it.'[129] As if he were recalling his earlier interest in industrial psychology, Foucault acknowledges that it is usually economic forces that bring power relations to bear on the body: 'it is largely as a force of production,' he writes, 'that the body is invested with relations of power and domination.'[130] Yet the body can only become a productive force if it can be controlled: 'the body becomes a useful force only if it is both a productive body and a subjected body.'[131]

The context in which Foucault introduces his notion of 'political technology' sheds light on his understanding of the term. To speak about the power relations directed at the body as a 'technology' is to say that they are more practical than an ideology and more subtle than acts of violence. 'There may be,' Foucault writes, 'a "knowledge" of the body that is not exactly the science of its functioning, and a mastery of its forces that is more than the ability to conquer them: this knowledge and this mastery constitute what might be called the political technology of the body.'[132] Foucault further adds that such political technologies are rarely laid out systematically in discourse and that they are employed by

particular institutions without being the exclusive property of any. They constitute, Foucault concludes – launching one of his key concepts of the period – a 'microphysics of power'[133] in the way that they create the retail subjugation upon which larger institutions depend. In his idea of 'political technology of the body,' we once again see Foucault's ambivalent conception of technology clearly displayed. His theoretical anti-humanism is evident in his refusal to suggest that the political investment of the body might alienate it from its essential nature. Yet at the same time, he uses 'technology' to describe how the body is press-ganged into the service of modern social institutions.

Though the scope of the term is wide, Foucault specifically coined the term 'political technology' to describe the power form that he calls 'discipline.' Though, as we have seen, he initially conceptualized the notion of disciplinary power in his 1973–1974 lectures on psychiatry, he first explored it at length in *Discipline and Punish*. He defines disciplinary power in the following terms: 'These methods, which made possible the meticulous control of the operations of the body, which assured the constant subjection of its forces and imposed upon them a relation of docility-utility, might be called "disciplines."'[134] Discipline is a political technology of the human body in several respects. In the first place, it is productive, in the sense that it literally produces a particular kind of behavior. For instance, where they had once enacted a 'bodily rhetoric of honor,' by

> the late eighteenth century, the soldier has become something that can be made [*qui se fabrique* – literally, which can be manufactured]; out of formless clay, an inapt body, the machine required can be constructed; posture is gradually corrected; a calculated constraint runs slowly through each part of the body, mastering it, making it pliable, ready at all times, turning silently into the automatism of habit; in short, one has 'got rid of the peasant' and given him 'the air of a soldier' (ordinance of 20 March, 1764).[135]

Discipline marks the discovery of the body as 'an object and target of power' – a 'body that is manipulated, shaped, trained, which obeys, responds, becomes skilful and increases its forces.'[136] Discipline, moreover, considers the body as a kind of machine. Foucault considers La Mettrie's famous eighteenth-century treatise, *L'homme machine* – 'Man the Machine' – as exemplary of the new disciplinary outlook, in the way that it links an 'anatamo-metaphysical' conception of the soul as a material phenomena with a 'technico-political' insight of the body's malleability.[137]

The novelty of discipline, Foucault contends, lies not in the fact that the body has become a target of power (which has long been the case), but rather in the almost microscopic attention it gives to analyzing, controlling, and optimizing bodily gestures and movements in a relentless, continuous way. Discipline entails an 'infinitesimal power over the active body,' directed at 'the economy, the efficiency of movements, their internal organization,' and implying an 'uninterrupted, constant coercion' that supervises 'the processes of the activity rather than its result' and exercises a 'codification that partitions as closely as possible time, space, movement.'[138] Finally, in this period, these techniques are not the special preserve of particular institutions or cultures, but become 'general formulas of domination,' which can be applied in a wide range of contexts to achieve any number of ends.[139]

One of the 'general formulas of domination' that disciplinary power promotes is the aspiration to make the entire surface of society visible. The power technology that exemplifies this goal is the Panopticon, the model prison conceptualized by Jeremy Bentham that proved central to Foucault's argument in *Discipline and Punish*. Foucault first

became aware of the role that visibility played in modern institutions in his studies of hospital architecture in the second half of the eighteenth century, but it was reading Bentham's 1791 work *Panopticon* that made him see generalized surveillance as a central feature of modern forms of power. Foucault specifically and repeatedly describes the Panopticon as a technology. In this prison model (which Bentham was apparently introduced to by his brother, who had seen it applied to the dormitories of the École Militaire in Paris, which were designed in 1751), Bentham found a 'technology of power designed to solve the problems of surveillance.' Yet the utilitarian philosopher's ideas were less important in themselves than they were representative of a wholesale reorganization of power relations in the aftermath of the French Revolution, when the 'bourgeoisie' recognized that constitutions and legislatures were insufficient bases for its authority: 'it realizes that it has to invent a new technology ensuring the irrigation by effects of the whole social body, down to its finest particles.'[140]

In the chapter dedicated to presenting 'panopticism' as an exemplary form of disciplinary power, Foucault repeatedly uses language that describes it as a technology and a machine. The Panopticon has the impersonal and automatic character of a machine. Its 'architectural apparatus' is a 'machine for creating and sustaining a power relation independent of the person who exercises it.'[141] The Panopticon 'automatizes and disindividualizes power'[142]; it is 'a marvelous machine which, whatever use one may wish to it, produces homogeneous effects of power.'[143] Furthermore, through permanent visibility, it adopts a technological approach to the management of individuals. The Panopticon is a 'laboratory' that 'could be used as a machine to carry out experiments, to alter behavior, to train or correct individuals.'[144] It is a 'privileged place for experiments on men, and for analyzing with complete certainty the transformations that may be obtained from them.'[145] The Panopticon is, moreover, technical in the way that it has a 'generalizable model of functioning' – in its character as a 'figure of political technology that may and must be detached from any specific use.'[146] Finally, the Panopticon has all the efficiency of a well-functioning machine. 'Its strength is that it never intervenes, it is exercised spontaneously and without noise, it constitutes a mechanism whose effects follow one another.'[147]

> It can in fact be integrated into any function (education, medical treatment, production, punishment); it can increase the effect of this function by being linked closely with it; it can constitute a mixed mechanism in which relations of power (and of knowledge) may be precisely adjusted, in the smallest detail, to the processes that are to be supervised.'[148]

With the Panopticon, power itself is technologized:

> it arranges things in such a way that the exercise of power is not added on from the outside, like a rigid, heavy constraint, to the functions it invests, but is so subtly present in them as to increase their efficiency by itself increasing to its own points of contact. The panoptic mechanism is not simply a hinge, a point of exchange between a mechanism of power and a function; it is a way of making power relations function in a function, and of making a function function through these power relations.[149]

Yet discipline does not only manipulate bodies or control them through the panoptic machine. It also, according to Foucault, *creates* individuals. Or, to be precise, in controlling bodies, it creates individuality. The soul (a concept central to many conceptions of individuality) is, Foucault argues, the device by which the body is governed – a mechanism for regulating corporal movement in all its minutia. The soul is not, as Marxists

would have it, 'an illusion, or an ideological effect,' but a very real product of disciplinary power. True, it is not a 'substance,' as Christian theology would have it, but it is 'the element in which are articulated the effects of a certain type of power and the reference of a certain type of knowledge, the machinery by which the power relations give rise to a possible corpus of knowledge, and knowledge extends and reinforces the effects of this power.'[150] Many epistemological, psychological, and philosophical claims are premised on this soul: on 'this reality-reference, various concepts have been constructed and domains of analysis carved out: psyche, subjectivity, personality, consciousness, etc.,' as well as the 'moral claims of humanism.'[151] This soul is not a distortion of 'real man,' for the very idea of man is already in the grip of these power relations:

> The man described for us, whom we are invited to free, is already in himself the effect of a subjection much more profound than himself. A 'soul' inhabits him and brings him to existence, which is itself a factor in the mastery that power exercises over the body. The soul is the effect and instrument of a political anatomy; the soul is the prison of the body.[152]

In this passage, Foucault's deep-seated ambivalence towards technology is once again on display. On the one hand, technology is the essence of power in its most insidious forms – discipline as that which not only regiments and normalizes the body, pervading it so deeply that it creates, as an instrument of its power, the very facet of ourselves that we are inclined to consider most our own and the least tainted by domination – our self. On the other hand, the concept of technology has a liberating effect, in that it frees us from the humanist myth of a core self or transcendental subject. To speak of power as a technology is to engage in a critique of manipulative forms of social control while bracing oneself against humanism's comforting allure.

History of Sexuality: An Introduction, published in 1976, continues Foucault's examination of political technologies. The problem of discipline in this book is, however, somewhat marginalized by what he calls the 'incitement to discourse': the fact that, over the course of Western history, there has been such an accumulation of pressures and incentive to talk about sex – in a way that constitutes sex both as an object of knowledge (and, in particular, a key to deciphering the secret of our own self) and as target of power. Rather than examining disciplinary power's careful manipulations of the human body, Foucault now considers the way in which the very inducement to speak is itself a power effect. Though less saturated with technological metaphors than his discussion of the Panopticon, Foucault clearly presents the 'incitement to discourse' as another example of a power technology. He illustrates the imbrication of sex and power in his discussion of Denis Diderot's 1748 novel *The Indiscreet Jewels*, which tells the tale of a sultan with a magic ring that compels his wives' genitals to confess their sexual adventures. This ring is an appropriate metaphor for the incitement to discourse, as it, manipulates us into believing that we must speak about our own sexuality. Yet like the sultan's ring, the incitement to sexuality obscures its mechanisms: 'This magical ring, this jewel that is indiscreet in making others talk, but which talks so little about its own mechanism, is what must be made in turn loquacious: of it one must speak.'[153]

The central metaphor for conceptualizing the incitement to discourse in *History of Sexuality: An Introduction* – the functional equivalent to *Discipline and Punish's* Panopticon – is the *dispositif*, a term that is alternately translated as 'apparatus,' 'machinery,' or 'deployment.' According to the *Dictionnaire historique de la langue française, dispositif* originally designated the final words of a legal ruling, in which a court's decision was announced. The word subsequently entered military language, referring to 'the totality of

means arranged [*disposés*] consistent with a plan.' A usage from 1797, for instance, speaks of a '*dispositif de défense*.' Around 1860, the term acquired its most common contemporary sense: the 'way in which the organs of an apparatus are arranged [*disposés*].'[154] The word's etymology explains the host of English terms that are used to translate it, which evoke both its military connotation ('deployment') as well as its technical sense ('machinery,' 'apparatus').

These multiple meanings all harmonize, however, with Foucault's longstanding interest in procedures for the technical management of human beings. In *History of Sexuality: An Introduction*, Foucault uses *dispositif* to explain the way in which power can be simultaneously productive (in the way it creates sexuality by linking a range of discrete practices, bodily functions, and institutions) and constraining. It is precisely when we behave, act, think, speak, and know sexuality that we must realize that we are ensnared in the deployment of power, and not just when we are forced to repress our sexual urges or language. Just because this power form is creative does not mean that it is not manipulative; indeed, it is the essence of the *dispositif de sexualité* that the more creative it is, the more it manipulates us. To explain the *dispositif de sexualité*, Foucault contrasts it with its earlier and simpler alternative, the *dispositif d'alliance* ('the apparatus of alliances' or 'kinship'). By the latter, Foucault essentially refers to the social arrangements governing marriage, kinship relations, and inheritance. What intrigues him is how the *dispositif de sexualité* builds on the *dispositif d'alliance*, while rendering the latter's relatively straightforward regulation of sexual partners vastly more complex – creating, in the process, so many occasions for manipulation and control. 'The *dispositif de sexualité* functions by using mobile, polymorphic, and circumstantial power techniques.'[155] He adds: 'The *raison d'être* of the *dispositif de sexualité* is not to reproduce itself, but to proliferate, to innovate, to annex, to invent, to penetrate bodies in a more and more detailed way and to control populations more and more completely.'[156] Thus while it serves Foucault's point about power's creative character, the notion of a *dispositif* is consistent with his apprehensive attitude towards technology, as a process for arranging, rationalizing, and manipulating individuals and their bodies.

Once again, even as Foucault uses the notion of *dispositif* to call critical attention to the technology control of human life, technological references also assist him in his methodological goal – specifically, that of emancipating the concept of power from its juridical representation. This representation identifies power only with the capacity to say 'no,' to forbid, or to censure. It is rooted in 'juridical monarchy' and in the fact, as Foucault famously put it, that we have yet to 'cut off the king's head' in political thought. This model, though, cannot help us understand power in its most distinctive forms – be they the Panopticon or the *dispositif de sexualité* – in which power is creative, bottom-up, and capillary, rather than merely repressive, top-down, and arterial. Foucault explains: 'if it is true that the juridical served to represent in a way that was doubtless not exhaustive a power that is essentially centered on extraction and death, it is absolutely heterogeneous to new power procedures that operate *on the basis not of law but of technique*.'[157] We must try, he adds, 'to free ourselves from a juridical and negative representation of power' and to free ourselves from conceiving it in terms 'of law, prohibition, freedom, and sovereignty.' If we do, we may find that 'in modern societies, power has not, in fact, governed sexuality on the basis of law and sovereignty,' but through a 'veritable "technology" of sex, far more complex and above all much more positive than the sole effect of a "defense."'[158] A 'technological' conception of power (in relation to sexuality), rather than a juridical one, would thus

finally allow us to understand 'sex without the law and power without the king.'[159] The notion of *dispositif* is thus consistent with Foucault's thinking about technology throughout the 1970s: on the one hand, it refers to forms of social control (discipline, panopticism, the incitement to discourse) whose dangerous consequences must be submitted to critique; on the other, it is integral to defining a conception of power and its relationship to subjectivity that is shorn of any lingering residues of philosophical humanism and related metaphysical ideas (the integrity of the soul or self, the legal construction of power).[160]

The tension between Foucault's critique of 'power technologies' and his philosophical anti-humanism expressed itself in a curious if revealing way in 1979. The theme of his course at the Collège de France that year was 'The Birth of Biopolitics'; but whereas he had once used that neologism to refer to the intervention of power into 'life' (for example, public health policies or natalism), he now employed it to analyze free-market and neoliberal economics. The timing of Foucault's choice to lecture on this topic was itself significant, as it corresponds with the very beginnings of the 'neoliberal turn' in Western societies: Margaret Thatcher was months away from winning the UK's general election, and Ronald Reagan's electoral triumph would come soon thereafter; in France, prime minister Raymond Barre, an economist, was experimenting with liberal policies, while intellectuals disenchanted with the French left's statist tendencies rediscovered the virtues of political (and to a lesser extent economic) liberalism.

As I have argued elsewhere,[161] part of the reason Foucault found himself interested in – and perhaps even attracted to – neoliberal economists is that they embraced a 'thin' theory of human nature. This is apparent, for instance, in the Chicago School's conception of criminality: breaking with the tradition of seeing criminals as a particular type of human being (which thus exposed them to particular kinds of power technologies), economists like B.J. Eatherly and Mark Moore maintained (as Foucault understood them) that effective drug policies could dispense with notions of deviance or delinquency by regarding drug consumption as nothing more than a kind of behavior that, like most others, responded to market incentives and constraints. The Chicago School's view thus effectuated what Foucault called an 'anthropological erasure of the criminal.'[162] Foucault explains this reasoning in the following terms:

> We must be prepared to accept that, in any case, however pathological the subject may be at a certain level and when seen from a certain angle, he is nevertheless 'responsive' to some extent to possible gains and losses, which means that penal action must act on the interplay of gains and losses or, in other words, on the environment; we must act on the market milieu in which the individual makes his supply of crime and encounters a positive or negative demand.[163]

In assessing neoliberalism's potential as a model for governing societies, Foucault betrayed an intriguing ambivalence. On the one hand, he acknowledged that this conception of the individual as 'responsive' to market incentives and environmental triggers was giving rise, as he put it, to 'techniques of environmental technology or environmental psychology, which … are linked to neo-liberalism in the United States.'[164] On the other hand, he was intrigued by the alternative that neoliberalism presented to the 'disciplinary society' he had had relentlessly exposed in his previous work. Neoliberalism, Foucault argued, does not represent the 'project of an exhaustively disciplinary society,' nor one based on 'a mechanism of general normalization.' It is, moreover, a social model that optimizes 'system of difference' and tolerates 'minority practices.' Finally, economic

\liberalism represents an effort to 'disqualify the political sovereign,' and particularly the notion of 'the police state.'[165] In short, Foucault's anti-humanism appears to have led him to view neoliberalism as an interesting challenge or alternative to disciplinary society, precisely because it embraced only the thinnest conception of human nature and, as a result, embraced power technologies which, while undoubtedly deserving a critical eye, seem significantly less intrusive than the Panopticon and related techniques.

1980–1984: Technologies of the Self

The final – and in many ways unexpected – act of Foucault's career, before his untimely death in 1984, was his exploration of ancient arts of existence. By 1980, this theme had largely if not entirely replaced the study of power forms as his primary intellectual concern. Where he had until then used 'technology' to refer to systems of power, he now transposed the term onto his new interests, employing it to the way individuals perform and enact their subjectivity. Consequently, Foucault began to speak of 'technologies of the self' and 'techniques of existence,' while frequently invoking the Greek phrase *techne tou biou*. This development was not simply a shift in Foucault's interests, but also entailed a significant rethinking of his core beliefs – including his understanding of technology.

To grasp what Foucault meant by 'technologies of the self,' one must understand how this idea emerged out of his analysis of power technologies during the previous period. Students of Foucault generally recognize that a theoretical rupture of sorts occurred in the writing of the *History of Sexuality*. In the first volume (from 1976), Foucault considers sexuality, through the 'incitement of discourse' and the *dispositif de la sexualité*, as a technology of power. In volumes two and three (*The Use of Pleasure* and *The Care for the Self*, both of which appeared in 1984), he integrates sex into the broader problem of technologies of the self. While this account of Foucault's evolution is largely accurate, the later project nonetheless clearly has roots in the earlier one. In the first volume, Foucault acknowledged that a history of sexuality that went beyond the repression–liberation narrative would have to extend back much further: the 'techniques' (as he calls them) to be studied include the 'the penitential practices of medieval Christianity,' specifically 'mandatory confession' (required of the faithful beginning with the Lateran Council) and the 'method of asceticism.' Though he mentions them in the context of a study of the relationship between power and sexuality, these themes would prove central to his analysis of 'technologies of the self': he came to see asceticism (in the sense of *askesis*) as synonymous with a particular kind of self-fashioning or way of living, of which confession was a significant example – one that is the focus of the unpublished manuscript of the project's fourth volume, *The Confessions of the Flesh*.[166]

The idea of technologies of the self could emerge from that of technologies of power because Foucault had long seen the self as constituted by and through power relations. Yet instead of focusing on how the subject is constituted through power relations, his new ambition was to examine the way in which the subject is fashioned 'in the relationship of self with self and the forming of oneself as subject.'[167] Put differently, in both technologies of power and technologies of the self, the individual is the object of technical practices (such as subjecting behavior to norms, regulating movements, surveillance, etc.). Yet with technologies of power, these practices are ultimately exercised on individuals from outside; with technologies of the self, individuals make themselves the object of their own technical practices. Of course, in practice, technologies of power and the self often overlap and support one another. Foucault's insight that power is productive (and

not merely prohibitive) implies that in certain contexts, a technology of the self might well be an effect or a consequence of a power technology.

Conversely, the way one governs oneself (using techniques of existence) may impact one's capacity to govern others. In a 1983 interview, Foucault observed that 'techniques of the self' are 'frequently linked to the techniques for the direction of others. For example, if we take educational institutions, we realize that one is managing others and teaching them to manage themselves.'[168] This explains Foucault's observation to a Dutch interviewer in 1981: 'It is thus impossible to understand this profound relation with masturbation as sexuality's principal problem by saying that it is a prohibition. I believe that in this instance, we are dealing with a *technology of the self* [*une technologie du moi*]. The same is true of *homosexuality*.'[169] In other words, masturbation and homosexuality may be creations of the *dispositif de sexualité*, but they also establish a relationship with the self that has its own autonomy and distinctive techniques, which cannot be reduced to a simple interdiction. Moreover, even if technologies of the self may be elicited by power technologies, they nonetheless operate according to their own principles. In the same interview, Foucault, noting that 'discipline is not the only technique for controlling individuals,' observed that 'technologies of the self also differ, at least partially, from disciplines.'[170] It thus becomes clear that in his studies of selfhood, Foucault began to use 'technology' to refer to practices and even forms of control that lacked the oppressive character of those he had analyzed in the context of disciplinary institutions: rather than a regimentation of individual behavior, 'technology' could refer to a particular relationship one cultivated with oneself.

Hence the importance of Antiquity. In a quasi-Heideggerian gesture, Foucault's newfound interest in Greek and Hellenistic civilization entailed a reflection on the etymology of 'technology.' In 1982, Foucault expressed his interest in 'what the Greeks calls *technê*, that is, a practical rationality governed by a conscious goal.'[171] Research that he had intended as the background for a history of sexuality extending from the Middle Ages to the modern era brought to his attention this phenomenon: 'Reading Seneca, Plutarch, and all those people, I discovered that there were a very great number of problems or themes about the self, the ethics of the self, the technology of the self, and I had the idea of writing a book composed of a set of separate studies, papers about such and such aspects of ancient, pagan technology of the self.'[172]

In using the word 'technology' in an ancient and specifically Greek context, Foucault allows its background connotations to shift: by emphasizing the root '*technê*' – i.e. craft, craftsmanship, or art – Foucault uses 'technology' in a way that becomes virtually synonymous with 'aesthetics.' Technology ceases to imply an impersonal and systemic process for controlling individuals. Instead, it suggests a work of individual creativity, a process by which one treats one's life as a work of art. 'In antiquity,' he explains, 'this work on the self with its attendant austerity is not imposed on the individual by means of civil law or religious obligation, but is a choice about existence made by the individual. People decide for themselves whether or not to care for themselves.' One does this by acting in a way that endows one's life with particular values – by holding oneself up as an example for posterity, for instance, or having an exalted reputation. He adds: 'It was a question of making one's life into an object for a sort of knowledge, for a *technê* – for an art.'[173]

By rethinking technology in light of his newfound interest in antiquity and the self, Foucault managed, late in his career, to bring the ambivalent attitude towards technology that had characterized his thought throughout his career to a resolution of sorts. Previously, Foucault had elaborated a critique of the ways in which power technologies

ensnare the individual, while forbidding himself from falling back, in the process, on a humanistic philosophy of the subject. Yet this endeavor left open the question of what kind of individual, if not the subject in humanist terms, could escape from the grips of these power technologies – some kind of individual being, presumably, a necessary premise for any coherent critique of power's effects. Through his analysis of technologies of the self, Foucault fleshed out a conception of selfhood that, he believed, avoided the mystifications of humanism, yet without reducing subjectivity to a power effect (as he seemed to do in *Discipline and Punish*). The ancient technology of the self, he made clear, had little to do with the meaning-endowing consciousness of existentialism or phenomenology. As Foucault explained late in life, Sartre retreated from the idea, and its radical implications, that the self is 'something which is given to us,' when he links it to authenticity – 'the idea that we have to be ourselves – to be truly our true self.' To which Foucault adds: from 'the idea that the self is not given to us, I think that there is only one practical consequence: we have to create ourselves as a work of art' – in other words, to see our self as the outcome of a *technê*, a technology (or aesthetics) of existence.[174]

Thus Foucault's conception of the self did not represent a return to humanism, at least in the sense in which he always understood it (as a philosophical position which asserts the existence of a transcendental or intuitively meaningful subject, through which the world and experience are constituted). Like power and knowledge, the self is the contingent outcome of the dynamic interplay of forces, strategies, and technologies. If there is a paradox – which skeptics might consider a contradiction – in Foucault's views, it lies in the fact that Foucault seems to suggest that there is a self that can construct the self – while refusing to draw the conclusions from such reflexivity that one finds, say, in idealism or phenomenology. What is clear is that if Foucault does believe that there is a self that can fashion itself, he grants it little importance: this subjective substrate is neither, in his view, the expression of deep interiority, a unifying consciousness, nor evidence of a transcendental subject. It is simply a force that produces effects, and what we call the self should be seen as no more than particular configurations of these effects, shaped as they are by networks of power relations.

Foucault still, though, was intent on ensuring that this position not be seen as a renunciation of his earlier anti-humanism that, as willing as he now was to equate 'technology' with 'aesthetics,' he was prepared to let the term slide back to its connotation of 'technical production' when necessary. In an interview with the journal *Telos* published in 1983, Foucault was asked his views about the thesis, espoused by the Frankfurt School, that in modern times reason had bifurcated into a 'technical rationality' on the one hand and a more authentic, critical rationality on the other. To which the philosopher replied:

> I do not speak of the moment when rationality became technical. Currently, to give an example, I am studying the problem of techniques of the self in Hellenistic and Roman antiquity, in other words, how man, human life and the self were the objects of a certain number of *tekhnai* which, in their demanding rationality, were perfectly comparable to a production technique.[175]

To the end, Foucault's problem with technology was the role that it played in modern systems of control, and not with the philosophical or ethical problem of a 'dehumanization' of the modern world resulting from its mechanization.

Conclusion: Foucault between Modernism and Postmodernism

This essay has argued that Foucault's thought displays a sustained ambivalence towards the significance of technology, which can be understood if we see his confrontation with this question as lying at the crossroads between two imperatives: the need to critique modern 'technologies of power,' and a willingness to evoke the values associated with 'technology' to distance himself from philosophical humanism, particularly its conception of the self. In the course of this discussion, however, one term has been conspicuous in its absence: 'postmodernism.' Though Foucault rarely used the term – and never did so unprompted – this label (along with 'post-structuralism') is still commonly applied to him. What, if anything, are the implications of Foucault's views on technology for our understanding of him as perhaps the most prominent representative of postmodern thought? To this question – by way of conclusion – I will now turn.

In an important essay published in these pages, Paul Forman has argued that the relationship between science and technology lies at the heart of the difference between modernity and postmodernity. These two cultural moments, Forman contends, have antithetical conceptions of the relative priority of science and technology. Modernity – that is, 'the era emerging from the Enlightenment, the industrial revolution, and the formation of nation states'[176] – is characterized by the cultural primacy of science. In postmodernity, the onset of which Forman situates around 1980, science loses its predominance to technology. The cultural values of science were, in Forman's view, those of modernity itself. These include the inherent worth of knowledge for its own sake; 'disinterested *theoria*'; and, most importantly, what Forman calls 'methodism': that is, modernity's 'stress upon the proper method in all its doings, its insistence that the means are prior to the ends, that the end is justified, indeed sanctified, by the means and only by the means employed to attain it.'[177] By contrast, the primacy given to technology in postmodernity is indicative of the latter's broader cultural priorities: a pragmatic or utilitarian conception of knowledge; a rejection of the possibility of disinterestedness (and a concomitant devaluation of *theoria*, understood as the aspiration for objective truth); and the belief that ends always find a way of justifying the means. The postmodern conviction in the priority of ends is, moreover, tied to its cultural reductionism – the belief that all serious human commitments are the expression of incommensurable values, which no disinterested method – for instance, the scientific method – can plausibly adjudicate. Forman writes:

> That subordination of technology to science in modernity points, as it seems to me, to the foundational importance for the modern mind of means, of process, of procedure …. Today, however, in post-methodist postmodernity, the notion of a scientific method is regarded as naïve and out-dated because ends have regained the primacy that, prior to the Enlightenment, had been ascribed to them always and everywhere.[178]

By Forman's benchmark, then, is Foucault rightfully classified as a postmodernist? Forman suggests that he might be (notably by way of Heidegger[179]), but prefers to associate the term with lesser French thinkers of Foucault's generation, such as Jean-François Lyotard. It is, however, undeniable that crucial aspects of Foucault's thought are consonant with Forman's definition. Foucault deliberately called science's primacy into question when, in *The Archaeology of Knowledge*, he argued that science only exists on an epistemological terrain that has already been cleared by 'discursive practices,' which generate the objects, utterances, and concepts that must first exist for scientific claims to be 'in the truth.' Foucault, moreover, relentlessly challenged the pretense of

science – and indeed, any form of knowledge – to disinterestedness. In *Discipline and Punish*, he famously one-upped Francis Bacon, asserting that power and knowledge are functionally indistinguishable. There is no knowledge, he contended, 'that does not pre-suppose and constitute at the same time power relations.'[180] In his reflections on Nietz-sche, Foucault's most important interlocutor from the philosophical tradition, he went so far as to argue that the desire for knowledge is not philosophy's premise, but precisely an uncanny occurrence in human affairs that philosophy must try to explain. Foucault appre-ciated Nietzsche's aphorism: 'In some remote corner of the universe, poured out and glit-tering in innumerable solar systems, there once was a star on which clever animals invented knowledge. That was the haughtiest and most mendacious minute of "world his-tory."'[181] The point here is not simply that every claim to knowledge or scientific propo-sition is self-interested. It is rather that, as Nietzsche invites us to think, the desire for truth *is itself* an interest. That we should even care about truth in the first place cannot, from this standpoint, be taken for granted. In the late 1970s, Foucault addressed the debate that preoccupied several generations of revolutionaries: is Marxism a science? Foucault's response to those who would ask this question is telling: 'Well, precisely, what we reproach you for is making Marxism … a science. And if there is an objection to be made against Marxism, it's that it could effectively be a science.'[182]

Yet while such remarks would seem to land Foucault firmly in the postmodern camp, I would nevertheless argue that he is not rightfully described as a postmodernist, at least in the way Forman defines the terms. The critique of science not only precedes the advent of postmodernism; indeed, the questioning of science is in many ways consub-stantial with the development of science itself. It would be a mistake to dismiss any criti-cal discourse directed at science as either pre- or postmodern. Some of these discourses are distinctly modern. Foucault's thought falls into this category. While Foucault certainly sought to relativize science's truth claims, most often it was in the name of a higher-order level of theory – *savoir*, discourse, or episteme – rather than to reduce it to a purely utilitarian enterprise. The 'practice' involved in Foucault's notion of 'discursive practice' consists of defining theoretical objects and formulating concepts: with practice like this, who needs theory? What Foucault admired about his mentors like the philosophers of science Gaston Bachelard and Georges Canguilhem,[183] or the ethnologist Georges Dumézil, was their attention to the rigors of concepts and the systematic character of structures: for all his Nietzscheanism, Foucault never really denied *theoria* a primacy of sorts, at least in the history of thought.

The real object of Foucault's critique was always discourses with pretensions to being scientific, rather than established or hard sciences. One would be hard pressed to find a passage from Foucault where he calls into question, or even questions the disinterested-ness, of physics, chemistry, or geology. The targets of Foucault's critical theory were invariably sciences that lacked complete scientific credibility – and whose practitioners were typically haunted by this lack: psychology and psychiatry (most importantly), criminology, public health, political economy, sexology (his life-long interest in medicine is explained in many ways precisely by the fact that it lies at the intersection of biology and the 'sciences of man.') These shortcomings were always ultimately tied to their efforts to formulate a scientific – or, as Foucault liked to call it, a 'positive' – understand-ing of 'man' (almost all of Foucault's books engage with the question of the 'human sciences'), an endeavor that he believed was condemned to confusion and contradiction, which these pseudo-sciences would frequently seek to overcome in the most troubling ways.

Foucault was, however, mostly content to leave the hard sciences alone. In 1957, Foucault joked: 'It would be a surprising biologist who said: do you want to do *scientific* biological research, or not?'[184] Yet this question, which Foucault suggested would never trouble a biologist, was the constant torment of a psychologist. The issue, in many ways, is Foucault's modified Kantianism: while he would have been unlikely to assert that biology or physics represent the disinterested truth, he seems to recognize that they are the honest brokers of the episteme they have been dealt. This is why they pose no problem for him: what interested Foucault are those forms of knowledge that, in their aspiration to know human beings, show their fractures, inconsistencies, and insecurities. This, more than science *per se*, is the object of Foucault's critique.

Finally, as I have argued, far from attributing technology particular cultural value, Foucault devoted much of his intellectual energy to work that would make it possible to resist the technological manipulation of society that he believed increasingly characterized the modern world. In this respect, he built on a widespread skepticism towards technological society – one that has existed ever since William Blake denounced the 'satanic mill' and the German Romantics abhorred the 'machine state,' which was launched anew after the Second World War. Foucault's critique of the mechanization of social life and of 'technologies of power' (in psychiatric ward, prisons, schools, hospitals, and elsewhere) belongs to a well-established tradition that questioned the new forms of authority that emerged in Europe in the wake of the dissolution of traditional society (which appears in Foucault's thought in the form of sovereign power). It is consistent (if not identical), for instance, with Max Weber's apprehensions about the 'iron cage' of rational asceticism (which is 'bound to the technical and economic conditions of machine production which today determine the lives of all the individuals who are born into this mechanism') and the 'specialists without spirit' that it breeds.[185] The uniqueness of Foucault's position, as it has been argued here, is that he combined this almost conventional critique of the proliferation of technology in modern forms of social control with a sophisticated rejection of the humanist philosophy of the individual, which led him, at times, to describe individuality as the creation of technological practices.

Yet neither does this latter claim seem to be beyond the pale of modernity: the idea that individuality is, under certain conditions, constraining rather than autonomous has a long pedigree in modern thought. Foucault's goal is thus not, to quote Forman's characterization of postmodernity, to assert that 'technology is simply all there is … apart from our *de gustibus*, not-to-be-argued-with, ends';[186] rather, it is to continue the modern project of self-emancipation, including the definition of one's own ends (through 'technologies of the self'), over and against the constraints that technologies of power place upon such endeavors. Foucault is a critic of technology, albeit an ambivalent one. What better proof that the best-known postmodernist remained steadfast in his modernism?

Notes
1. Barthes, 'The new Citroen,' 88.
2. Macey, *The Lives of Michel Foucault*, 75.
3. See ibid and Eribon, *Michel Foucault*, 100.

4. I will speak of 'technology' (in quotation marks) when I am referring to the word and to the ways in which Foucault's uses it rather than to the 'thing' or phenomenon itself.
5. See Marx, 'Technology,' 567–569.
6. Foucault, 'Prisons et asiles dans le mécanisme du pouvoir,' 523. Unless otherwise indicated, all translations from the French are the author's own.
7. Foucault, 'Table ronde du 20 mai 1978,' 21.
8. Foucault, 'Les mailles du pouvoir,'183, 184.
9. The index to the French edition of *Dits et écrits*, which includes the vast majority of Foucault's occasional papers (academic and journalistic articles, introductions, etc.) and interviews, proved particularly useful in this respect. It tells us the following: in these publications, Foucault used the word 'technique' on a total of 134 pages or series of pages, including: eight times between 1954 and 1969; 12 between 1970 and 1975; 43 between 1976 and 1979; and 71 between 1980 and 1988. He employed the term 'technology' on a total of 61 pages or series of pages, including: none between 1954 and 1969; six times between 1970 and 1975; 27 between 1976 and 1979; and 28 between 1980 and 1988. All of these dates refer to publication dates: some of the pieces appearing between 1984 (the year Foucault died) and 1988 were composed at a considerably earlier date.
10. On this approach, see Quentin Skinner's important essay, 'Meaning and Understanding in the History of Ideas.'
11. Sawicki, 'Heidegger and Foucault,' 69.
12. Salomon, 'What is Technology?,' 113, 115.
13. *Dictionnaire historique de la langue française*, vol. 2, 2244, 2245.
14. Schatzberg, '*Technik* Comes to America,' 487.
15. Foucault 'La société disciplinaire en crise,' 532. Emphasis added.
16. Foucault, 'La poussière et le nuage,' 18. Emphasis added.
17. Ellul, *Technological Society*, 3. In a 'Statement from the Publisher' that appeared in the 1967 edition, Alfred A. Knopf explains that he decided to publish a translation of Ellul's book on the recommendation of Aldous Huxley and Columbia sociologist Robert K. Merton, thus committing his firm to a project that he 'soon began to call "Knopf's folly."'
18. Fourastié, *Le grand espoir du XXe siècle*, 217.
19. Bernanos, *La France contre les robots*, 219–220.
20. Duplessy, *La machine ou l'homme*, 48.
21. Marcel, *Les hommes contre l'humain*, 49.
22. Aron, *L'Opium des intellectuels*, 40.
23. Heidegger, 'The question concerning technology,' 308–341. Heidegger delivered this lecture to the Bavarian Academy of Fine Arts in 1953.
24. Judt, *Past Imperfect*, 196.
25. Ross, *Fast Cars, Clean Bodies*, 5.
26. Kuisel, *Seducing the French*, 105.
27. See Rioux, *La France de la IVe République*, vol. 2, 174.
28. See Gilpin, *France in the Age of the Scientific State*, and Kuisel, *Capitalism and the State in Modern France*, chs 7–9.
29. Hecht, *The Radiance of France*.
30. Ellul, *Technological Society*, 252.
31. Ibid., 282.
32. Foucault, 'Polemics, politics, and problematizations,' 383.
33. See Eribon, *Michel Foucault*, 158–159. Eribon notes that one reason Foucault was not named to the education ministry position was because of a whispering campaign directed against his homosexuality.
34. Ellul, *Technological Society*, 4.
35. Georges Friedmann, *Industrial Society*. Emphasis in the original.
36. Crozier, '"Human engineering,"' *Les temps modernes*, 49.
37. Ibid., 60.
38. Ellul, *Technological Society*, 339.
39. Aron, *Opium of the Intellectuals*, 307.
40. Friedman, *Industrial Society*, 399.
41. Foucault, *Discipline and Punish*, 29, 30.
42. Crozier, '"Human Engineering,"' 62.

43. Ellul, *Technological Society*, 355–356.
44. Foucault, *Discipline and Punish*, 184.
45. 'Les nouvelles techniques "humaines" du big business américain,' 46.
46. Ellul, *Technological Society*, 387.
47. Foucault, *Histoire de la sexualité*, vol. 1, 125.
48. There is, however, at least one connection worth mentioning between Foucault and Crozier. When Foucault died in 1984, his student, François Ewald, who was writing a dissertation on the history of insurance, needed a new advisor. He turned to Crozier to take Foucault's place. See my essay, 'Accidents happen.'
49. Ellul, *Technological Society*, 319–427.
50. Friedmann, 'Esquisse d'une psycho-sociologie du travail à la chaine,' 143,144.
51. Ellul, *Technological Society*, 393.
52. On anti-humanism in European thought, see Rabinbach, *In the Shadow of Catastrophe*, and Geroulanos, *An Atheism that is not Humanist*.
53. Sartre, 'Existentialism is a humanism.'
54. Foucault, 'Entretien avec Madeleine Chapsal,' 516.
55. Ibid., 515, 517.
56. Ibid., 518.
57. Ibid., 60.
58. Eribon, *Michel Foucault*, 90.
59. 'Chronologie,' 18–19.
60. Foucault, 'Interview de Michel Foucault,' 665.
61. Ibid, 89.
62. Foucault, *Maladie mentale et personnalité*, 88–89.
63. Ibid., 110.
64. Foucault, 'La recherche scientifique et la psychologie,' 138. This is, incidentally, the first time Foucault uses the modified Kantian notion of the 'historical a priori,' a term that he would later use, notably in *The Order of Things*, where it would be closely associated with Foucault's notion of *epistemes*.
65. Ibid., 147.
66. Ibid., 146.
67. Ibid., 148.
68. Ibid.
69. Ibid.
70. Ibid., 149.
71. Ibid., 151.
72. Ibid., 152.
73. Ibid.
74. The 'Chronologie' in *Dits et écrits* explains that Foucault rewrote the entire second part of the book. In the 1954 edition, it was called 'The real conditions of illness'; in 1962, he renamed it 'Madness and culture,' integrating into it the insights of *Madness and Civilization*. 'Chronologie,' 24.
75. Foucault, *Maladie mentale et personnalité*, 89.
76. Foucault, *Maladie mentale et psychologie*, 100. The current French edition lists 1954 as the original publication date, despite the fact it is in fact the 1962 re-editing of the original work. Emphasis added.
77. Foucault, *Maladie mentale et personnalité*, 89.
78. Foucault, *Maladie mentale et psychologie*, 100–101. Emphasis added.
79. See Dosse, *Histoire du structuralisme*, vol. 1, chs 18 and 34.
80. Dreyfus and Rabinow, *Michel Foucault*, 9.
81. Foucault, *L'histoire de la folie*, 92.
82. Ibid., 348.
83. Ibid., 496.
84. Ibid., 541.
85. Ibid., 338.
86. Ibid., 341–342.
87. Dreyfus and Rabinow, *Michel Foucault*, 15.
88. Foucault, *The Birth of the Clinic*, 137.

89. Ibid., 141.
90. Ibid., 144.
91. Ibid., 162.
92. Ibid., 197.
93. Ibid.
94. Ibid., 198.
95. In 1963 – the same year as *The Birth of the Clinic* – Foucault also published a book-length study of the proto-surrealist writer and poet Raymond Roussel. It is the only extended work of literary analysis in Foucault's *oeuvre*. The essay is a sustained reflection on the central place of language in modernity, particularly on the way in which language limits expression while simultaneously making meaning possible – a theme that would recur in several of Foucault's works, particularly *The Order of Things*. Though the question of technology is largely absent from the study (consistent with his work of this period), Foucault does, intriguingly, describe the rigid and often arbitrary rules of composition that Roussel imposed on himself – for instance, writing a poem that begins and ends with nearly homonymic yet semantically distinct verses ('*les lettres du blanc sur* les bandes *du vieux pillard*' and '*les lettres du blanc sur* les bandes *du vieux billard*') – as 'human machines' (22). Later, he refers to Roussel's composition technique – reference to which he often worked into his poems and stories themselves – as a 'wonderful tool for building words' (148). The technical character of Roussel's languages and the fact that it seeks to call attention to itself as language and to signal language's constraints and possibilities more than it appears to convey meaning seems to have attracted Foucault because of the alternative it presented to phenomenology and philosophical hermeneutics, with their emphasis on signification – the notion that language always contains a residue of signification that can be recovered by, say, a careful listener or close reader. Foucault, *Raymond Roussel*.
96. Foucault, *Les mots et les choses*, 265.
97. Ibid., 361.
98. Ibid.
99. In 'The question concerning technology,' Heidegger explains the relationship between technology and 'humanization' as a twofold process. First, when being becomes nothing but 'standing-reserve' (the 'essence' of technology, for Heidegger), man himself becomes 'nothing but the orderer of standing reserve,' which ultimately brings him to the point when 'he himself will have to be taken as standing-reserve.' In short, by making the world technological, man becomes a technology to man. Second, technology allows man to entertain the mythical belief that he 'is lord of the earth.' In this way,' Heidegger, says, 'the illusion comes to prevail that everything man encounters exists only insofar as it is his construct,' leading to the 'delusion' that 'man everywhere and always encounters only himself.' See 'The question concerning technology,' 332.
100. Indeed, in *The Order of Things*, Foucault suggests that Heidegger's own reflections on technology are precisely emblematic of the modern episteme, which, because it is concerned with the 'human,' participates in an 'analytic of finitude' (the contours of which he had already traced in *The Birth of the Clinic*). In the analytic of finitude, man is a being who is radically historical yet whose origin is necessarily elusive (contrary to the classical episteme, in which origins suggested both a chronological beginning and an essential nature), a condition that gives rise to one of the constitutive paradoxes of modern thought: 'in assigning itself the task of restoring the realm of the originary,' it 'no sooner discovers the retreat of the origin; and it proposes to itself to advance paradoxically in the direction in which this retreat is accomplished and grows incessantly deeper.' According to Foucault, Heidegger's philosophy exemplifies modern thought's 'great preoccupation with returning,' and specifically with the belief that an origin's very inaccessibility indicates a way that time might somehow be retrieved. This habit of thought is evident in Heidegger's belief that the meaning of being can be extracted from the very space 'where τεχνή has installed the domination of its will' (344–345). Rather than aligning himself with Heidegger's account of the technological character of the modern world or viewing his stance as radical, Foucault characterizes it as the quintessence of an episteme organized around the aporetic being that is 'man.' For a sustained treatment of Heidegger's impact on Foucault's thought, see Rayner, *Foucault's Heidegger*.
101. Foucault, *L'archéologie du savoir*, 238.
102. Ibid., 240.

103. Foucault, *L'ordre du discours*, 36. Foucault here is quoting his mentor, the philosopher of science Georges Canguilhem.
104. Foucault, *L'archéologie du savoir*, 253.
105. I analyze the slow-motion transition from archaeology to genealogy in the 1970–1971 course in my essay, 'The genealogy of genealogy.'
106. Foucault, *Leçons sur la volonté de savoir*, 117.
107. Ibid., 118.
108. Foucault, *Discipline and Punish*, 'Docile Bodies,' 135–169. A very similar idea was advanced in 1934 by the French sociologist and anthropologist Marcel Mauss, in his essay 'Body techniques.' Mauss speaks of 'techniques of the body' to refer to 'the ways in which from society to society men know how to use their bodies' (97). The notion that there is a technique to corporeal movements – evident, say, in swimming, obstetrics, child-rearing, or sleep – and that these are socially transmitted (with major differences relating to period, culture, gender, and age) would seem to anticipate Foucault's notion of a 'political technology of the body,' and, in particular, his later notion of 'techniques of the self.' However, Mauss says little about 'body techniques' as a form of social control. Moreover, Foucault, to my knowledge, had nothing to say about Mauss and never references his article.
109. Interestingly, '*ordre*' and '*mesure*' were the same traits that Foucault associated with the classical episteme in *The Order of Things*.
110. Foucault, *Leçons sur la volonté de savoir*, 242.
111. An important influence on Foucault's thinking in this period, who may also have played a significant role in his use of 'technology,' is the philosopher Gilles Deleuze. Foucault had long admired Deleuze's work and recognized in it the voice of a fellow Nietzschean. Yet Foucault reserved particular admiration for the volume Deleuze published in 1972 with the dissident psychoanalyst Félix Guattari entitled *The Anti-Oedipus: Capitalism and Schizophrenia*, which became one of the most discussed theoretical works of the decade. It is difficult to sum up the main argument of this frenzied, irreverent, and often comical tome, which takes up Nietzsche's injunction to 'philosophize with a hammer' by concocting unconventional and non-intuitive concepts drawing on a broad and eclectic array of sources (Marx, Freud, Kant, Antonin Artaud, Samuel Beckett, and Henry Miller, to name a few). The book's primary goal is to propose a theory of desire and of a society that is emancipated from the constraints of the Freudian Oedipus complex, which, Deleuze and Guattari suggests, restricts the libido's chaotic energies to a tight circuit of family relationships: self (or 'subject'), mother, and father. Contrary to traditional psychoanalysis, Deleuze and Guattari conceive of libidinal energy as a genuinely productive, creative, and liberating force, which constructs its own reality even as it dispenses with restrictions inherent in the notion of the 'subject.' Central to this vision is their (characteristically elusive) notion of 'desiring machines' – nodes of libidinal energy, defined by their 'intensity' rather than their content, which plug into one another in polyvalent ways, inventing, in the process, new circuits of libidinal energy. Whatever one makes of the coherence of these arguments, this much can be said with certainty: first, in Deleuze and Guattari, the use of technological metaphors ('desiring machines') is specifically tied to a critique of the notions of the individual and the subject, as conceived by Western philosophy and psychoanalysis; second, Foucault heartily approved the enterprise. In the enthusiastic preface he wrote for the American edition of the book, he described one of the volume's lessons as follows: 'do not demand of politics that it restore the "rights" of the individual as philosophy has defined them. The individual is the product of power. What is needed is to "de-individualize" through the multiplication and displacement of various agencies.' Foucault, 'Préface,' 135–136.
112. The 1971–1972 course is entitled 'Penal Theory and Institutions' and the 1972–1973 course 'The Punitive Society.'
113. Foucault, *Psychiatric Power*, 22.
114. Ibid., 41.
115. Ibid., 54.
116. Ibid., 55.
117. Ibid.
118. Ibid., 57.
119. Ibid.
120. Ibid., 57–58.

121. Foucault, *Maladie mentale et personnalité*, 89.
122. Foucault, *Psychiatric Power*, 58.
123. Foucault, 'Prisons et asiles dans le mécanisme du pouvoir,' 523. Foucault notes that this phenomenon was previously understudied and that he was pleased to discover it – thought he also remarks that he was intrigued to learn, upon arriving in California, that others were already thinking about power in these terms.
124. Foucault, 'Dialogue sur le pouvoir,' 470.
125. Foucault, 'Les mailles du pouvoir,' 184.
126. Foucault, 'L'angoisse de juger,' 290.
127. Foucault frequently cites modern medical practices as a prime example of political technologies. In a lecture delivered in Rio in 1974, he states: 'Modern medicine is social medicine, the foundation of which is a certain technology of the social body.' Foucault, 'La naissance de la médecine sociale,' 209. He adds, in a related lecture: 'The reorganization of naval and military hospitals was not based on medical technique, but essentially on a technology that one could characterize as political, namely, discipline.' Foucault, 'L'incorporation de l'hôpital dans la technologie moderne,' 514. In the same lecture, he speaks of the 'hospital technology' (*technologie hospitalière*) in which individuals and populations are simultaneously 'objects of knowledge and of medical interpretation.' Ibid., 521. Foucault contributed an essay to a volume published in 1976 by a number of his students on the origins of the modern hospital – entitled, significantly, *Les machines à guérir*, or 'machines for healing' – in which he remarks: 'The hospital tends to become an essential element in medical technology.' Foucault, 'La politique de la santé au XVIIIe siècle,' 26.
128. Foucault, 'Le pouvoir, une bête magnifique,' 374.
129. Foucault, *Discipline and Punish*, 25.
130. Ibid., 26.
131. Ibid.
132. Ibid.
133. Ibid.
134. Ibid., 137.
135. Ibid., 135.
136. Ibid., 136.
137. Ibid.
138. Ibid., 137.
139. Ibid.
140. Foucault, 'The eye of power,'148, 156.
141. Foucault, *Discipline and Punish*, 201.
142. Ibid., 202.
143. Ibid.
144. Ibid., 203
145. Ibid., 204.
146. Ibid., 205.
147. Ibid., 206.
148. Ibid.
149. Ibid., 206–207.
150. Ibid., 29.
151. Ibid., 29–30.
152. Ibid., 30.
153. Foucault, *La volonté de savoir*, 104.
154. *Dictionnaire historique de la langue française*, vol. 2, 657.
155. Foucault, *La volonté de savoir*, 140.
156. Ibid., 141.
157. Ibid, 117–118. Emphasis added.
158. Ibid., 119.
159. Ibid., 120.
160. Foucault continued to use the phrase 'power technology' even when his focus shifted from the individualizing power techniques he associated with disciplinary to the practices of population management associated with his concepts of 'biopower,' 'governmentality,' and 'pastoral power.' In 1976, for instance, he observed: 'There have been two major revolutions in

the technology of power: the discovery of discipline and the discovery of regulation, the perfecting of an anatomo-politics and the perfecting of a biopolitcs.' Foucault, 'Les mailles du pouvoir,' 194. In 1979, he described liberalism as a 'technology of *frugal government*' and spoke more generally of the 'liberal technology of government.' Foucault, 'Naissance de la biopolitique,' 823. The same year, he said Western societies were unique in having developed 'a strange technology of power treating the vast majority of men as a flock with a handful of shepherds [*pasteurs*].' Foucault, '"Omnes et singulatim": vers une critique de la raison politique,' 139.

161. Behrent, 'Liberalism without humanism.'
162. Foucault, *The Birth of Biopolitics*, 258.
163. Ibid., 259.
164. Ibid.
165. Ibid., 259–260, 283–284.
166. Though largely complete by the time Foucault died in the summer of 1984, the terms of Foucault's estate, which forbid posthumous publication, mean that the manuscript is inaccessible to scholars and the public and that there are as of yet no plans for it to appear in print.
167. Foucault, *The History of Sexuality*, vol. 2, 6.
168. Foucault, 'On the genealogy of ethics,' 369–370.
169. Foucault, 'Interview de Michel Foucault,' 660.
170. Ibid., 662.
171. Foucault, 'Espace, savoir, et pouvoir,' 285.
172. Foucault, 'On the genealogy of ethics,' 342.
173. Ibid., 361, 362.
174. Ibid., 351.
175. Foucault, 'Structuralism et poststructuralisme,' 440–441. In the translation of this interview by Jeremy Harding that appears in *Michel Foucault: Politics, Philosophy, Culture. Interviews and Other Writings, 1977–1984* under the title 'Critical theory/intellectual history,' '*rationalité technicienne*' is translated as 'instrumental rationality' (27–28).
176. Forman, 'The primacy of science in modernity,' 16.
177. Ibid., 13, 70.
178. Ibid., 3.
179. Ibid., 9.
180. Foucault, *Discipline and Punish*, 27.
181. Nietzsche, 'On truth and lie in an extra-moral sense,' 42. Foucault quotes and discusses this passage in 'Leçon sur Nietzsche: Comment penser l'histoire de la vérité avec Nietzsche sans s'appuyer sur la vérité,' in *Leçons sur la volonté de savoir*, 195–213.
182. Foucault, '*Il faut défendre la société*,' 11.
183. On the connection between Foucault and the French epistemological tradition, see Gutting, *Michel Foucault's Archaeology of Scientific Reason*, especially ch. 1.
184. Foucault, 'La recherche scientifique et la psychologie,' 139. Emphasis added.
185. Weber, *The Protestant Ethic*, 181, 182.
186. Forman, 'The primacy of science in modernity,' 72.

References

NB: Because this essay focuses on Foucault's evolution as a thinker, the parenthetical dates given for Foucault's occasional writings (interviews, lectures, etc.) indicate when they were delivered or held (where this is known), rather than when they were first published.

Aron, Raymond. *L'Opium des intellectuels*. Paris: Calmann-Lévy, 1955.

Barthes, Roland. 'The new Citroen.' In Mythologies. Trans. Annette Lavers, 88–90. London: Paladin, 1972 (1957).

Behrent, Michael C. 'Accidents happen: François Ewald, the anti-revolutionary Foucault, and the intellectual politics of the French welfare state.' *Journal of Modern History* 82, no. 3 (2010): 585–624.

Behrent, Michael C. 'The genealogy of genealogy: Foucault's 1970–1971 course on The Will to Know.' *Foucault Studies* 13 (2012): 157–178. Accessible at http://rauli.cbs.dk/index.php/foucault-studies/article/view/3526/3827.

Behrent, Michael C. 'Liberalism without humanism: Michel Foucault and the free-market creed, 1976–1979.' *Modern Intellectual History* 6, no. 3 (2009): 539–68.

Bell, Daniel. *The End of Ideology: On the Exhaustion of Political Ideas in the Fifties*. Glencoe, IL: The Free Press, 1960.

Bernanos, Georges. *La France contre les robots*. Paris: Robert Laffont, 1947.

'Chronologie' [of Michel Foucault's life]. In *Dits et écrits*, vol. 1, *1954–1969*, Ed. Daniel Defert, François Ewald and Jacques Lagrange, 13–64. Paris: Gallimard, 1994.

Crozier, Michel. 'Human Engineering.' *Les temps modernes* 69 (1951): 44–75.

Deleuze, Gilles, and Félix Guattari. *L'anti-œdipe, Capitalisme et schizophrénie*. Paris: Editions de Minuit, 1972.

Dictionnaire historique de la langue française. Ed. Alain Rey. 3rd ed. 2 vols. Paris: Dictionnaires Le Robert, 2000.

Dosse, François. *Histoire du structuralisme*. 2 vols. Paris: La Découverte, 1992.

Dreyfus, Hubert, and Paul Rabinow. *Michel Foucault: Beyond Structuralism and Hermeneutics*. Chicago, IL: University of Chicago Press, 1982.

Duplessy, Lucien. *La machine ou l'homme*. Paris: Editions du Vieux Colombier, 1947.

Ellul, Jacques. *The Technological Society*. Trans. John Wilkinson. New York: Alfred A. Knopf, 1964, 1967 (1954).

Eribon, Didier. *Michel Foucault (1926–1984)*. Paris: Flammarion, 1991.

Forman, Paul. 'The primacy of science in modernity, of technology in postmodernity, and of ideology in the history of technology.' *History and Technology* 23, nos. 1–2 (2007): 1–152.

Foucault, Michel. 'L'angoisse de juger', interview with Robert Badinter and J. Laplanche (1977). In *Dits et écrits*, vol. 3, *1976–1979*, Ed. François Ewald Defert and Jacques Lagrange, 282–297. Paris: Gallimard, 1994.

Foucault, Michel. *L'archéologie du savoir*. Paris: Gallimard, 1969.

Foucault, Michel. *The Birth of the Clinic: An Archaeology of Medical Perception*. Trans. A.M. Sheridan Smith. New York: Vintage Books, 1975 (1963).

Foucault, Michel. *The Birth of Biopolitics: Lectures at the Collège de France, 1978–1979*. Trans. Graham Burchell. New York: Picador, 2008 [2004].

Foucault, Michel. 'Critical theory/intellectual history.' Trans. Jeremy Harding. In *Michel Foucault: Politics, Philosophy, Culture. Interviews and Other Writings, 1977–1984*, 17–46. London: Routledge, 1988.

Foucault, Michel. 'Dialogue sur le pouvoir.' Trans. F. Durand-Bogeart (1975). In *Dits et écrits*, vol. 3, *1976–1979*, 464–477.

Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. Trans. Alan Sheridan. New York: Vintage Books, 1977 (1975).

Foucault, Michel. 'Entretien avec Madeleine Chapsal' (1966). In *Dits et écrits*, vol. 1, *1954–1969*, 513–518.

Foucault, Michel. 'Espace, savoir, et pouvoir' (1982). Interview with Rabinow, originally published in *Skyline*. Trans. F. Durand-Bogaert. In *Dits et écrits*, vol. 4, *1980–1988*. Ed. François Ewald Defert and Jacques Lagrange, 270–85. Paris: Gallimard, 1994.

Foucault, Michel. 'The eye of power', interview with Jean-Pierre Barou and Michelle Perrot. In Power-Knowledge: *Selected Interviews and Writings, 1972–1977*. Ed. Colin Gordon, 146–65. New York: Pantheon Books, 1980.

Foucault, Michel. *L'histoire de la folie à la l'âge classique* ((1961)). Paris: Gallimard, 1972.

Foucault, Michel. *Histoire de la sexualité, La volonté de savoir*, vol. 1. Paris: Gallimard, 1976.

Foucault, Michel. *The History of Sexuality*, vol. 2, *The Use of Pleasure*. Trans. Robert Hurley. New York: Vintage Books, 1986 (1984).

Foucault, Michel. '*Il faut défendre la société.' Cours au Collège de France, 1975–1976*. Paris: Gallimard/Seuil, 1997.

Foucault, Michel. 'L'incorporation de l'hôpital dans la technologie moderne' (1974). Trans. D. Reynie. In *Dits et écrits*, vol. 3, *1976–1979*, 508–531.

Foucault, Michel. 'Interview de Michel Foucault' (1981) interview with J. François and J. de Wit for *Krisis: Tijdschrift voor filosofie*. Trans. H. Merlin de Caluwé. In *Dits et écrits*, vol. 4, 1980–1988, 656–667.

Foucault, Michel. *Leçons sur la volonté de savoir. Cours au Collège de France (1970–1971)*. Paris: Gallimard/Seuil, 2011.

Foucault, Michel. 'Les mailles du pouvoir' (1976). Trans. P. W. Prado. In *Dits et écrits*, vol. 4, *1980–1988*.

Foucault, Michel. *Maladie mentale et personnalité*. Paris: Presses universitaires de France, 1954.

Foucault, Michel. *Maladie mentale et psychologie* ((1962)). Paris: Presses universitaires de France, 2010.

Foucault, Michel. *Les mots et les choses, Une archéologie des sciences humaines*. Paris: Gallimard, 1966.

Foucault, Michel. 'Naissance de la biopolitique' (1979). In *Dits et écrits*, vol. 3, *1976–1979*, 818–825.

Foucault, Michel. 'La naissance de la médecine sociale' (1974). Trans. D. Reynie. In *Dits et écrits*, vol. 3, *1976–1979*, 207–228.

Foucault, Michel. '"Omnes et singulatim": vers une critique de la raison politique' (1979). In *Dits et écrits*, vol. 4, *1980–1988*, 134–161.

Foucault, Michel. 'On the genealogy of ethics: An overview of work in progress' (1983). Interview with Rabinow and Dreyfus. In *The Foucault Reader*, Ed. Paul Rabinow, 340–372. New York: Pantheon Books, 1984.

Foucault, Michel. *L'ordre du discours*. Paris: Gallimard, 1971.

Foucault, Michel. 'Polemics, politics, and problematizations' (1984). Interview with Rabinow. In *The Foucault Reader*, 381–390.

Foucault, Michel. 'La politique de la santé au XVIIIe siècle' (1976). In *Dits et écrits*, vol. 3, *1976–1979*, 13–27.

Foucault, Michel. 'La poussière et le nuage' (1980). In *Dits et écrits*, vol. 4, *1980–1988*, 10–19.

Foucault, Michel. 'Le pouvoir, une bête magnifique.' Interview with M. Osorio (1977). In *Dits et écrits*, vol. 3, *1976–1979*, 368–382.

Foucault, Michel. 'Préface'(to the American edition of Deleuze and Guattari's L'anti-œdipe). In *Dits et écrits*, vol. 3, *1976–1979*, 133–136.

Foucault, Michel. 'Prisons et asiles dans le mécanisme du pouvoir' (1974). Interview with M. D'Eramo. Trans. A. Ghizzardi. In *Dits et écrits*, vol. 2, *1970–1975*. Ed. François Ewald Defert and Jacques Lagrange, 521–525. Paris: Gallimard, 1994.

Foucault, Michel. *Psychiatric Power: Lectures at the Collège de France, 1973–1974. Trans. Graham Burchell*. New York: Picador, 2008.

Foucault, Michel. *Raymond Roussel*. Paris: Gallimard, 1963.

Foucault, Michel. 'La recherche scientifique et la psychologie' (1957). In *Dits et écrits*, vol. 1, *1954–1969*, 137–158.

Foucault, Michel. 'La société disciplinaire en crise' (1978). Interview–lecture delivered in Japan. In *Dits et écrits*, vol. 3, *1976–1979*, 532–534.

Foucault, Michel. 'Structuralisme et poststructuralisme' (1983). Interview with Gérard Raulet. Originally published in Telos. In *Dits et écrits*, vol. 4, *1980–1988*, 431–457.

Foucault, Michel. 'Table ronde du 20 mai 1978' (1978). In *Dits et écrits*, vol. 4, *1980–1988*, 20–34.

Fourastié, Jean. *Le grand espoir du XXe siècle: progrès technique, progrès économique, progrès social*. Paris: Presses universitaires de France, 1949.

Friedmann, Georges. *Industrial Society: The Emergence of the Human Problems of Automation* ((1947)). Glencoe, IL: The Free Press, 1955.

Friedmann, Georges. 'Esquisse d'une psycho-sociologie du travail à la chaine.' *Journal de psychologie normale et pathologique* 41 (1948): 127–44.

Geroulanos, Stefanos. *An Atheism that is not Humanist Emerges in French Thought*. Stanford, CA: Stanford University Press, 2010.

Gilpin, Robert. *France in the Age of the Scientific State*. Princeton, NJ: Princeton University Press, 1968.

Gutting, Gary. *Michel Foucault's Archaeology of Scientific Reason*. Cambridge: Cambridge University Press, 1989.

Hecht, Gabrielle. *The Radiance of France: Nuclear Power and National Identity after World War II*. Cambridge, MA: The MIT Press, 1998.

Heidegger, Martin. 'The question concerning technology.' In *Basic Writings*. Ed. David Farrell Krell, 311–341. San Francisco, CA: Harper San Francisco, 1993.

'"Human Engineering": Les nouvelles techniques "humaines" du big business américain' (editorial introduction to article by Michel Crozier). *Les temps modernes* 69 (1951): 44–48.

Judt, Tony. *Past Imperfect: French Intellectuals, 1944–1956*. Berkeley, CA: University of California Press, 1992.

Kuisel, Richard F. *Capitalism and the State in Modern France: Renovation and Economic Management in the Twentieth Century*. Cambridge: Cambridge University Press, 1981.

Kuisel, Richard F. *Seducing the French: The Dilemma of Americanization*. Berkeley, CA: University of California Press, 1993.

Macey, David. *The Lives of Michel Foucault*. New York: Pantheon Books, 1993.

Marcel, Gabriel. *Les hommes contre l'humain*. Paris: Fayard/Vieux Colombier, 1951.

Marx, Leo. 'Technology: The emergence of a hazardous concept.' *Technology and Culture* 53, no. 1 (2010): 561–577.

Mauss, Marcel. 'Body techniques.' In *Sociology and Psychology: Essays*. Trans. Ben Brewster, 95–123. London: Routledge & Kegan Paul, 1979.

Nietzsche, Friedrich. 'On truth and lie in an extra-moral sense.' In *The Portable Nietzsche*, Ed. and Trans. Walter Arnould Kaufmann, 42–47. New York: Penguin Books, 1982.

Rabinbach, Anson. *In the Shadow of Catastrophe: German Intellectuals between Apocalypse and Enlightenment*. Berkeley, CA: University of California Press, 1997.

Rayner, Timothy. *Foucault's Heidegger: Philosophy and Transformative Experience*. New York: Continuum, 2007.

Rioux, Jean-Pierre. *La France de la IVe République*, vol. 2, *L'expansion et l'impuissance, 1952–1958*. Paris: Seuil, 1983.

Ross, Kristin. *Fast Cars, Clean Bodies: Decolonization and the Reordering of French Culture*. Cambridge, MA: MIT Press, 1995.

Salomon, Jean-Jacques. 'What is technology? The issue of its origins and definitions.' *History and Technology* 1 (1984): 113–56.

Sartre, Jean-Paul. 'Existentialism is a humanism' (1946). Trans. Philip Mairet. In *Existentialism from Dostoyevsky to Sartre*. Ed. Walter Kaufman, 287–311. New York. Meridian, 1989.

Sawicki, Jana. 'Heidegger and Foucault: Escaping technological nihilism.' In *Foucault and Heidegger: Critical Encounters*, Ed. Alan Milchman and Alan Rosenberg, 55–73. Minneapolis, MN: University of Minnesota Press, 2003.

Schatzberg, Eric. '*Technik* comes to America: Changing meanings of technology before 1930.' *Technology and Culture* 47, no. 3 (2006): 486–512.

Skinner, Quentin. 'Meaning and understanding in the history of ideas.' *History and Theory* 8, no. 1 (1969): 3–53.

Weber, Max. *The Protestant Ethic and the Spirit of Capitalism*. Trans. Talcott Parsons. London: Routledge, 1992 (1905).