

Mechanical Dreams: Technology and Culture in Interwar France

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Current scholarship in the social and cultural history of technology centers upon four major areas, among which there is little integration. The history of technological change in the workplace has raised significant issues about how workers respond to changes in the labor process. Recent literature on the “industrial revolution in the home” and on domestic consumerism indicate the changes in familial relations associated with domestic technologies. Finally, research on the history of professional engineering has shown how a specific professional ideology among engineers emerged. The older work of David Landes and more recently, of Thomas Hughes and Alfred Chandler, have given valuable insights into the economic and managerial dynamics behind technological innovation, but none of these studies address the formation of popular consciousness, and structural-functional studies of firms or sectors overstate managerial rationality. Recent work on images of technology in popular culture implicitly take an correspondence theory of the formation of consciousness, assuming that such images are in essence impressed into popular consciousness by mass media. Victoria de Grazia has discerned a “culture of consent” based in leisure activity, but only Michael Burawoy’s work on shop-floor politics has shown how an ideology centered on the benefits of technological change fosters a culture of consent.

The most pressing task for social historians of technology is to tie mass production with mass consumption, material culture with market society in the twentieth century, and to investigate the construction of consciousness. Political-economic concepts can elucidate managerial strategies, yet the crucial integrative factor in my analysis will be what I term the culture of high technology. In that ideology, the gospel of growth was used to encourage class cooperation in the place of class conflict, with the promise that the degradation of labor which often occurs under

conditions of mass production would be compensated by a richer life at home. This implied a re-invention of the family. Workplace conflict would be sublimated by marketplace satisfaction, yet this process was predicated upon redefinition of technology as a decontextualized and autonomous liberator from want and drudgery.

The study shall give rise to a vision of, as it were, the marriage of the engineer and the housewife, of the gospel of growth and the manual worker. I intend to investigate how technological change in the workplace reinforced existing hierarchies, and how domestic consumerism strengthened gender roles within the family. New material cultural artifacts evoked a deceptive—sometimes real, often illusory—sense of power among disempowered people. An analysis of the sign systems associated with technological artifacts and the meanings ascribed to them will form the foundation for a study of popular consciousness. I will symmetrically study the interaction between managers and workers in the workplace and between women and men in the home with respect to managerial rationalization and domestic consumerism. My study will investigate how a technologist ideology in interwar France was promulgated through international expositions, trade shows, and the like, and how managers, workers, and their respective organizations began to reframe their programs and demands according to emerging ideas of economic cooperation and technologically-based growth. I will also study the extent and result of the diffusion of domestic consumer technologies. This work will require on the extremes economics and semiotics, the former to gauge the constraints and incentives for technological change at home and at work, and the latter to decode the meaning of technological symbols and artifacts.

I have chosen to study the technological culture of consent in interwar France because the images of technological change belied material stasis. Modernist

managers, unions, and marketing people arrived at a consensus on the benefits of industrial cooperation and growth by the late 1920s, many factories saw the successful introduction of Taylorism and popular magazines were rife with advertisements for trade fairs and consumer goods, but consumer culture and workplace rationalization remained anemic. By the late 1930s, a frustrated consumerism among rank and file workers and a belief in the necessity for technological progress led to the escapist cult of the weekend on the one side, and moves for statist technological directivism on the other, two of the dominant themes in postwar French social history and political economy.

The methodology I shall employ in this study will include the techniques of technology analysis, semiotics, political economy, and now-classic approaches to social and popular cultural history. To a limited extent my research will follow a methodology akin to that of non-linear science—the chaotic nature of evidence and phenomena (particularly in efforts to author a ‘total history’) dictate limited *a priori* hypotheses and similarly limited predictability. Sources will be disparate, and not only is causation difficult to ascertain in cultural studies, the positivist frames of social science give little succor to those seeking unpredictable outcomes. To use a metaphor of non-linear science, I shall tease a sense of coherence from observed phenomena rather than pursue the chimera of prematurely closed causal models.

At the extremes, I must investigate the financial accessibility of and economic incentives for industrial rationalization and domestic consumerism on one end and the socio-political impact of technological imagery on the other. I shall first develop a set parallel microeconomic maps (*models* is too presumptive) of selected Paris-Region industrial firms. Evidence will be gleaned from corporate records and the archives of the manufacturers’ trade associations.¹ These

¹ The specific firms to be studied will be chosen according to the accessibility of records, many of which are held in the City of Paris and National

maps will reflect the net discounted present-value benefits of introducing new production technologies and techniques, and will equally shed light upon managerial conceptions of such benefits. Similarly, using the techniques of retrospective familial budget analysis, I shall ‘map’ the budgetary constraints of French industrial working class households. In this context, it will be necessary to explain why women’s labor force participation dropped sharply after 1919. The observations of the Fourastiés—that few working class families could afford large expenditures on domestic technologies, and that most increases in income were allocated to enhancing diets—will help to guide my empirical analyses, as will those of Catholic social agencies and their journal for women, *Mon chez moi*, as well as those of the appliance trade association.

Having defined the ‘objective’ range of the possible for the diffusion of new industrial and domestic technologies and techniques, research will turn toward studying the concrete extent of the diffusion. This can be accomplished empirically by a similar set of records and methods to those noted above, with a concentration on trade association literature. With the material cultural, economic, and artifactual terrain of this study defined, the methodology will then turn to the social, cultural, and imagined world of interwar French technics, indeed, to the veritable reinvention of work and the family.

The discourse of unions and workers on this issue can be retraced by a study of the archives of the now-unified Confédération Générale de Travail² (for the unions) and the

Archives Once-private, now nationalized firms often offer greater access to researchers than do typical private firms. Within the former subset, I shall select firms which would have faced substantial cost savings from the introduction of Taylorist methods, in particular, those which were assembly- or machining-intensive. Three firms in particular stand out, the Compagnie Générale des Equipements Téléphoniques, the turboalternator division of Compagnie Générale de l’Electricité (for which there is an internal corporate history), and the Compagnie des Equipements de Télégraphie Sans Fil.

² In an earlier project, I used the archives of the Confédération Générale de Travail-Fédération

records at the Archives Nationales and City of Paris (for the rank and file). Defining the linguistic and political territory of the debate on taylorism will allow me to formulate the bases upon which working class consent (or resignation) to taylorism developed. Part of this will involve tracing *en micro* the paths of discourse among managers, unions, and workers, and understanding the processes through which statements by each of the parties had divergent meanings ascribed to them by the other actors. Presumably, there was a process of meaning-adjustment and translation at each stage of communication among the relevant parties. In studying the process of communication and meaning-adjustment, I shall strive for a Geertzian 'thick description' of the process of myth construction as it pertains to manufacturing visions of possible futures and to facilitating consent toward the 'necessary' in the present.

The promulgation-reception-translation-consent/resistance framework proposed for the production side will be echoed in studying domestic consumerism. This method is more complex on the consumption side, given the evidentiary *mutisme* of consumers and the denser and more imagematic language of the promulgators. A neo-classic economic framework would compel the researcher to define limitatively a successful promulgation of domestic technics by an analysis of sales volumes and income constraints. Such an approach is essential as a starting point and it shall be utilized, yet it gives no detailed sense of the meaning adjustment and assimilation process involved in the construction of consumer culture. At first blush, the definition of specific time paths for specific artifacts can be achieved by observing the timing of advertising campaigns and trade shows, followed by studies of purchases. Further and more significantly, the language and symbols of such campaigns must be decoded in the

context of culturally available meanings as a way to show what cultural visions were being marketed. The derived messages can then be placed against the objective and subjective cultural terrain of consumers. That cultural frame of consumers can be defined by a study of labor's language of economic and social goals in their struggles, expressed by unions and in labor records, as well as by the more empirical approaches discussed above. In addition, the structures of domestic gendering can be defined through a study of secondary sources and a reading of consumerist images and language. By this method, the promulgation-reception-translation-consent process can be thickly described on the consumption side. Sources for defining the cultural language of the promulgators of consumer technics include the archives of the annual *Salons des Arts Ménagers* (home shows), as well as the advertisements and marketing records of manufacturers and trade associations.³

All of the above methods will be applied to changes over two decades with an added recognition of the vastly different economic and social conditions of the 1920s and 1930s. I shall be particularly attentive to how the real and imagined crisis of the 1930s reshaped visions of what was possible in the realms of productive and consumerist technics. Assuming that managers, workers, and consumers constructed personal and common narratives as a way to lend coherence to the symbols of productivism and consumerism over time, we cannot, however, presume that such narratives reached the point of meaning-closure in the period under examination. Given a short time frame and vast economic changes, the satisfaction of cultural and material aspirations similarly re-

Nationale de l'Énergie (at Pantin). The archives of the metalworking and electrical construction federations are now on deposit, with limited access, at the new Confédération Générale de Travail archives in Montreuil.

³ Access to the records of appliance manufacturers will be more difficult, given the fact that few such firms have entered the public sector. Thompson-Brandt remains an exception, though its consumer goods subsidiary remains in the private sector. Trade association records as well as those of the utilities (which dominated the marketing of large appliances) are far more accessible. The trade association-related firm, Hydrodynamica, located in Geneva, has a rich collection of electrical appliance advertisements.

mained impossible. On that assumption, I will therefore seek evidence of frustration, expressed through worker indiscipline and indifference, as well as more generalized revolts against work and consumerism. In addition, assuming that increased political and social agitation reflect a rejection of the productivist-consumerist cultural paradigm, the insurgency of the late 1930s can be viewed as a reassertion of the traditional politics of class, albeit on a different mental and cultural basis.

This project will contribute significantly to my goals as a scholar and teacher, for it will lend critical understanding to the relationships between technology and culture. The interactive, non-linear framework I shall develop to explain how technological choices structure culture and how culture contextualizes ways of making technological choices shall provide a new framework for teaching the history of technology. Students will be able to see more clearly that inventions are not 'discovered,' but developed as mirrors of their cultural, social, economic, and political contexts. Indeed, they will be able to look beyond the commonly cited causes of technological and social change and begin to discover the interactive roles of artifacts, perceptions, and illusions. In addition, should I develop a broad and generalizable 'map' which explains the formation of consciousness and the framing of purposive action, other scholars will be able to extend such techniques to other historiographic terrains. Not only will this project explore the ways that one can span techniques, from economics to semiotics, it will help to develop tools for applying narrativist tools for analyzing conscious and unconscious purposive action. At the very least, this project will help form the bedrock for further studies of a currently neglected field, twentieth century French social and technological history.

The research I pursued in my doctoral training allowed me to develop expertise in the history of the workplace and of technological and economic change in the twentieth century. My dissertation (now a forthcoming book) examined Electricité de

France (EDF), 1946-1970, the state-owned, nationwide power system. In that study, I opened new territory in the analysis of twentieth century social, technological, and political-economic history. I showed how state intervention in the economy, a long-standing demand of the left, buttressed the existing political-economic order by having the public assume many of the costs of the infrastructure necessary for advanced capitalism and by protecting the strengthening economic order from popular criticism by creating new modes for legitimating power. While trying to explain in human terms why and how a 'socialist' firm became a pillar of advanced capitalism, I had to go beyond structuralist state theory and search for causes in social, cultural, and ideological phenomena. I ultimately argue that a culture of high technology tied goals of economic growth to class cooperation and technocratic rule, and thereby validated the new order and created a new form of popular consent.

As a recognized and reputable researcher in the history of technology, I foresee few problems pursuing this research to a successful conclusion. The ultimate product of this research will be a book-length manuscript.

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