Technological politics and the political history of African-Americans

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TECHNOLOGICAL POLITICS AND
THE POLITICAL HISTORY OF AFRICAN AMERICANS

A DISSERTATION
SUBMITTED TO THE FACULTY OF CLARK ATLANTA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

BY
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ABSTRACT

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TECHNOLOGICAL POLITICS AND  
THE POLITICAL HISTORY OF AFRICAN AMERICANS

Advisor: Dr. William H. Boone  
Dissertation dated July, 1995

This dissertation is a critical study of technopolitical issues in the history of African American people. Langdon Winner's theory of technopolitics was used to facilitate the analysis of large scale technologies and their compatibility with various political ends. I contextualized the central technopolitical issues within the major epochs of African American political history: the Atlantic slave trade, the African artisans of antebellum America, and the American Industrial Age.

Throughout this study I have sought to correct negative stereotypes and to show how "technological gauges" were employed to belittle people of African descent. This research also has shown that the mainstream notion that Africans had no part in the history of technology is false.

1
This study identifies and analyses specific technologies that played a major role in the political affairs of Africans and African Americans. Those technologies included nautical devices, fort construction, and automatic guns in Africa, and hoes, plows, tractors, cotton gins, and the mechanical cotton pickers in America. The findings of this study suggested that African Americans have been disengaged and victimized by western technologies. This dissertation proposes how to overcome the oppressive uses of technology.
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## TABLE OF CONTENTS

ACKNOWLEDGMENTS .................................................................................................................. II

LIST OF TABLES ......................................................................................................................... IV

INTRODUCTION .......................................................................................................................... 1

CHAPTER

1. TECHNO-POLITICS AND THE EUROPEAN IMAGE OF AFRICA .............................................. 26

2. TECHNO-POLITICS AND THE MILITARY CONQUEST OF AFRICA ........................................... 63

3. THE TECHNOLOGICAL POLITICS OF ENSLAVEMENT IN AMERICA .................................. 105

4. AFRICAN AMERICANS AND THE INDUSTRIAL AGE ................................................................ 170

5. CONCLUSION ......................................................................................................................... 252

BIBLIOGRAPHY .......................................................................................................................... 263
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Percentage of African Americans in Eight Crafts in the South, 1890-1920</td>
<td>210</td>
</tr>
<tr>
<td>II. Increase in Number of African Americans in Four Crafts in Five Northern Cities, 1910-1920</td>
<td>213</td>
</tr>
<tr>
<td>III. Strikes in Which African Americans Were Used as Strikebreakers, 1916-1934</td>
<td>224</td>
</tr>
<tr>
<td>IV. Per Capita Income For African Americans, by Region, 1920</td>
<td>227</td>
</tr>
<tr>
<td>V. Percentage Distribution of African Americans by Occupation and Sex: 1940 and 1944</td>
<td>229</td>
</tr>
<tr>
<td>VI. Percentage Distribution of Employed Afro-Americans by Industry and Sex: 1940 and 1944</td>
<td>230</td>
</tr>
</tbody>
</table>
INTRODUCTION

The human being has been defined as *homo faber*, or the tool maker. The utility and value attached to tools or technology affect our life choices and our quality of life. Modern technology--nuclear energy, spacecrafts and computers, wonder drugs, and the latest surgical techniques--impact on society in important ways. Its impact causes changes in social institutions and individual lifestyles; it generates challenges to our values and beliefs; and it creates problems and opportunities for our economic and political systems.

Technology, has been an implicit theme of political thought:

...the industrial revolution and the rise of industrial society, the ascendancy of the middle class, the possibility of utopia, the misery of the working class and the necessity of revolution, the rise of the new elite, the social and psychological turmoil involved in rapid change, alienation, nationalism, imperialism, leisure, and the possibility of ecological disaster.1

The recent intensification of technological issues, particularly as they relate to unemployment resulting from automation and technological displacement, has renewed the need to focus on the role of technology. Though some change
is evident, the subject of techno-politics is not a privileged discourse within the academy. Heretofore, no major political theorist has considered techno-politics and the political history of African Americans. This study will attempt to fill this critical gap.

**Significance of the Study**

The significance of this study is that it is the first full-length project that explores systematically the impact of Western technology on African peoples. It is a dissertation for our time, because it addresses the political history of contemporary structural changes in the American national economy; it is an analysis that is directly relevant for discerning the current shift from the industrial age to the information age. Moreover, this techno-political discourse is necessary for understanding and explaining new forms of racism which are largely fueled by massive unemployment resulting from technological displacement.

**Review of the Relevant Literature**

The study of technology intersects with so many currents of thoughts and disciplines that the literature has become boundless. The study of technology, however, has been the primary concern of historians and only more recently
philosophers and political theorists. Historians were interested in American inventiveness as compared to that of Europeans. They tended to focus on artifacts which reflected strong symbolic values—the steamboat and the "American System" of manufacturing (Taylorism, Fordism, skyscrapers, etc). The representative texts of this school are Brooke Hindle's *Technology in Early America: Needs and Opportunities for Study* (1966), John Oliver's *History of American Technology* (1956), Eugene Ferguson's *Bibliography of the History of Technology* (1968) and the *Early Engineering Reminiscences* of George Escol Sellers, 1815-1840 (1965), Louis C. Hunters' *Steamboats on the Western Rivers* (1949), Bruce Sinclair's *Early Research at the Franklin Institute* (1966), Leo Marx's *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964), Carl W. Condit's *American Building Art: the Twentieth Century* (1961), and Herbert J. Muller's *Children of Frankenstein. A Primer on Modern Technology and Human Values* (1970).

In 1979, the first volume on the philosophy of technology was published in the Boston Philosophy of Science Series, *Technics and Praxis*. The series, influenced by the work of Martin Heidegger, represented the beginning of a new subfield within the discipline of philosophy, the philosophy of technology. In Europe, on the other hand, according to Don Ihde, there had been a much longer tradition. The first book using the title *Technik-Philosophies* had been published in
1877 by the Neo-Hegelian Ernst Kapp. Furthermore, Friedrich Rapp, author of the *Analytic Philosophy of Technology* (1981), had formed the important German Philosophy of Technology Society. American philosophers later joined the Germans by forming The Society for Philosophy and Technology (1983). Incidentally, this group has now expanded to encompass a wider international circle and still meets on alternate years.

Currently, the theories and literature in technological politics, also known as techno-politics, are vast, scattered, and of uneven quality. In the main, however, are the works of Karl Marx, and more recently the works of Sidney Willhelm and Langdon Winner. Writers of color who implicitly focused on the impact of technology on African Americans include W. E. B. DuBois, Charles S. Johnson, Carter G. Woodson, Walter Rodney, Benjamin Quarles, S.E. Anderson and Eric Williams. The most representative texts in political science in recent history have been written by Langdon Winner, currently a professor of political science at Rensselaer Polytechnic Institute. His *Autonomous Technology: Technics Out of Control as a Theme in Political Thought* (1977) and *The Whale and the Reactor- A Search for Limits in An Age of High Technology* (1986), define and establish the new paradigm of technological politics. I will elaborate on his theory later, but for now we will overview the salient techno-political theory of the aforementioned authors. We shall also be concerned with their positions on people of African descent.
The Techno-Political Theory Of Karl Marx

Karl Marx was a careful observer of technology's historical importance and its political consequences. He devoted much time and effort to analyzing the distinct characteristics of technologies and their dialectic or inner logic. Moreover, his writing is permeated with technical jargon that relates to technology: instruments of production (technology), means of labor (tools), object of labor (raw material), and technical means (instruments or machines). Furthermore, his famous Capital, Volume I, lays the foundation for modern techno-political concerns by analyzing the labor process, surplus value, exchange value, valorization, deskilling, and the transformation from handicrafts to manufacturing and finally, large-scale industry. Marx even made a detailed analysis in Capital of the production of paper, pins, needles, locomotives and steam engines.²

Technology is also central to Marx's theory of the identity of human beings. Technology, for Marx, is what mediates between human beings and their relationship with the physical world. Through the process of mastering the physical world, humans are transformed and realized: "By thus acting on the external world and changing it, he [human beings] at the same time changes his own nature."³ And human nature is uniquely ranked above other species:
A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labor process, we get a result that already existed in the imagination of the labor at the commencement.\(^4\)

Along with defining humans as \textit{homo faber}, Marx advanced the notion that the history of technology is based on social factors and should be studied as a collective phenomenon:

A critical history of technology would show how little any of the inventions of the eighteenth century are the work of a single individual.\textellipsis\ Technology discloses man's mode of dealing with nature, the process of production by which he sustains his life, and thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them (my emphasis).\(^5\)

Marx's method, historical materialism, according to Nathan Rosenberg, emphasized the interaction and conflict of social classes and institutions, not individuals. Thus technological inventions, no less than other socioeconomic activities, were best analyzed as social processes rather than as inspired flashes of individual genius.\(^6\)

The crux of Marx's critique was an attempt to understand the nature of class struggle during the period of industrial capitalism. Marx applauded the technological advancements of bourgeois capitalism, while condemning its exploitation of
workers. He appreciated the scale of production and the possibilities of freedom and material abundance:

...It [the bourgeoisie] has accomplished wonders far surpassing Egyptian pyramids, Roman aqueducts, and Gothic cathedrals...

The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal production forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground -- what earlier century had even a presentiment that such production forces slumbered in the lap of social labor?

Conversely, he dreaded the resulting exploitation of labor. Peasants were removed from farmland and displaced by machines. Subsequently, the peasant population was forced into cities where they were further exploited as "appendages of machines" in factories and as a "reserve army of labor."

Nevertheless, the proletariat had revolutionary potential because of the socialization process in the workplace. In this new industrial society, the proletariat's exposure to the new technological environment held revolutionary possibilities for the following reasons:

They are more numerous than the members of any other class; they have acquired a certain discipline and capacity for organization by virtue of their function in production; they occupy a strategic role in society and can paralyze the economy by general strikes; the conflicts between all other groups can be composed without altering property relations,
whereas the conflict between the workers and
the owners of the instruments of production is
endemic and breaks out again and again in
acute form.8

The struggle between worker and technology for Marx is a
form of class struggle. For example, Marx noted that workers
directly attacked machines in early England:

As early as 1663, London workers tore down the new
mechanical sawmills that threatened their livelihood.
In 1676, ribbon workers smashed their machines. In
1710, rioters protected the newly introduced stocking
frames. Later, John Kay, the inventor of the flying
shuttle used in the textile mills, saw his home wrecked
by an infuriated mob and ultimately fled England
altogether. The most publicized examples came in 1811
when machine wreckers calling themselves Luddites
destroyed their textile machines in Nottingham.9

But the struggle, according to MacKenzie's interpretation of
Marx, is two-sided:

Capital uses machinery not only strategically...but
also for precise tactical purposes. Where workers'
(expecially skilled workers) militancy poses a threat
to valorization, capital can counter by promoting the
invention and employment of machinery to undermine
workers' power.10

Thus Marx suggested:

It would be possible to write a whole history
of the inventions made since 1830 for the sole
purpose of providing capital with weapons
against working-class revolt.11

Capitalism also attacked workers through deskilling, or
the elimination of skilled labor. Marx was not only concerned
with the change in "long wave" modes of production from
agriculture to industry, but he was a close observer of intricate changes during the transformation from handicraft to manufacturing, and later to large-scale industry. Throughout these transformations labor was deskillled (and was largely replaced by poor working conditions, the exploitation of women and children, and the imposition of discipline by extending work hours and modifying wages).

Here, Marx defines machines as "a mechanism that, after being set in motion, performs with its tools the same operations as the worker formerly did with similar tools."\(^1\) The aim of production, writes Andrew Feenburg, was to simplify tasks into mechanical routines that can be quickly learned.\(^2\) In the end, the mechanization of the labor process left the artisans exposed to larger forces that eventually would subjugate them:

The special skill of each individual machine-operator (and craftsman), who has now been deprived of all significance, vanishes as an infinitesimal quantity in the face of science, the gigantic natural forces, and the mass of social labor embodied in the system of machinery, which, together with these three forces, constitutes the power of the master."\(^3\)

What I have briefly outlined are the salient points of Marx's theory of techno-politics. Techno-political concepts were explicit in his conceptual framework and formed an intricate part of his analysis. Indeed, Marx suggested that an epoch is defined by its technology: "The handmill gives you
society with the feudal lord; the steam-mill, society with the industrial capitalist.15

Marxism remains very relevant to the study of technopolitics, however, there are shortcomings of this philosophy when it is applied to African Americans. Marxists, by privileging class analysis above all else, have difficulty conceptualizing ethnic strife. Donald MacKenzie notes this impracticality in the essay "Marx and the Machine":

Here we come to an area where Marx's account clearly requires modification. The social relations of production within which technology develops are not simply between worker and capitalist, but between worker and worker. Crucially, they include relations between men workers and women workers, between older workers and younger workers, and, sometimes at least, between workers divided by ethnicity (my emphasis).16

Later, the role of ethnicity and the emergence of European technology was partly accounted for in Eric William's Capitalism and Slavery and Walter Rodney's How Europe Underdeveloped Africa, two primary texts in our analysis. Furthermore, Carlos Moore's Were Marx and Engels White Racists? critiques the superficial analysis in the writings of Karl Marx on the European enslavement of Africans. He argues that Marx, by reducing slavery to economic categories, does not give proper ethical treatment to the question.17 Slaves are simply economic units, and the system of slavery is merely another stage of development. Despite these shortcomings,
Marxism in general remains highly relevant; it only needs Afro-centric modification.

AFRICAN AMERICANS IN TECHNO-POLITICAL DISCOURSE

Most scholars have treated the techno-politics of African Americans as a sub-text of history. Historians were mainly concerned with documenting the exclusion of Africans and African Americans in the history of technology. They have chronicled the African history of tool making, language, metallurgy, medicine, mathematics, architecture, etc. In the African diaspora, they have documented the scientific and technological inventions of hundreds of African Americans. The inventors names include: Benjamin Banneker, James Forten, Norbert Rillieux, Andrew Jackson Beard, Jan Earnest Matzeliger, Lewis H. Latimer, Granville T. Woods, Elijah McCoy, Daniel Hale Williams, Sarah Boone, George Washington Carver, and Katherine C.G. Johnson, to mention a few. There are several good works on this topic: Louis Haber's, Black Pioneers of Science and Invention (1970), James Michael Brodie's, Created Equal- The Lives and Ideas of Black American Innovators (1993), Hattie Carwell's, Blacks in Science- Astrophysicist to Zoologist (1977) and Ivan Van Sertima's, Blacks in Science- Ancient and Modern (1983). Researchers have also documented the hostile political conditions under which many of these inventors worked.
In addition to collecting general information on African American inventors, historians were also interested in the techno-politics of the legal restraints on enslaved inventors. They have discovered and noted several such inventors who had problems securing patents: Onesimus, Ned (some of whose last names unknown), Jo Anderson, Wilcie Elfe, Anthony Weston, Henry Boyd, and Benjamin Bradley. Portia P. James' *The Real McCoy* analyzes, among other things, the chain of events that led to the passing of the *Confederate Patent Act of 1861*. This law essentially stated that any invention of an enslaved person was owned by the master. This law stood until the end of the American Civil War and the passage of the Thirteenth and Fourteenth Amendments. It is therefore no wonder that historians speculate that Eli Whitney's idea for the cotton gin (which paradoxically intensified slavery) came from slaves working on the plantation of General Nathaniel Greene, and that Cyrus McCormick's harvester was primarily inspired by his enslaved assistant, Joe Anderson.¹⁹

Another major theme of historical literature was the rise and decline of African American artisans. In *The Negro-American Artisan*, published by Atlanta University Publications in 1912, W.E.B. DuBois reviewed the "industrial history of Africans." He suggested that there was a continuity between the African artisan and the enslaved artisan in America. He also gave particular attention to the plight of the enslaved artisans. The skilled slave was greatly valued: "He
would always sell for from two to three times as much in the market as the unskilled slaveman." In addition, large plantations always had an enslaved African carpenter, a blacksmith, and a brick and stone mason. Furthermore, DuBois noted that the largest mansions of the South were built by African craftsmen:

One only needs to go down South and examine hundreds of old southern mansions and the splendid old church edifices, still intact, to be convinced of the fact of the cleverness of the Negro artisan, who constructed nine-tenths of them, and many of them still provoke the admiration of all who see them....

Eventually, however, "Negro artisans" were displaced. According to the historian Benjamin Quarles, "at the close of the Civil War, five out of every six artisans in the South were Negroes, [but] by the turn of the century the skilled Negro worker probably numbered not more than 5 percent of the total." A study conducted by the federal government in 1865 indicated that 100,000 of the South's 120,000 skilled artisans were African American. An important techno-political question is how and why these African artisans were deskillled and eliminated.

S.E. Anderson's "Science, Technology and Black Liberation" (1974) is the seminal essay that characterizes current African American alienation from modern technology. He starts from the premise that technology is "a necessary political agent for the development of monopoly capitalism and