
Reviewed by: Robin E. Mansell, Research Associate, Transnational Research Institute for Policy, Vancouver, British Columbia.

Slack's book presents the reader with a comprehensive analysis of the conceptual flaws and limitations of several dominant theoretical models used in analysis of the relations between technology and society. Her objective is to lay the groundwork for an alternative theoretical framework and to develop a basis for criticism and intervention. Part One develops some major criticisms of dominant theory that, while somewhat abbreviated, are succinct and accurate. Part Two elaborates on the concepts of causality that are embedded in different approaches to the relations between technology and society and concludes with a discussion of structural causality. Part Three develops an analysis of the history, significance and implications of U. S. Patent Law for the development of communication technologies. The theoretical model draws heavily on Althusser, is well developed and provides a good basis for evaluating the usefulness of this approach.

Slack argues that the test of a theoretical framework is its ability to provide explanations that yield productive tools for effective intervention. Technology Assessment, Alternative Technology and Luddism are found to fall in this respect. They are constrained by their foundation on concepts of causality that subsequently limit options for political action. "Technology Assessment" is criticized as a tool of legitimation. Both the "Technology Assessment" and "Alternative Technology" approaches are bound to a belief in the value of technical progress, but adherents to the latter consider that technology can be molded to serve positive social goals. The label "Luddism" is applied to all approaches to the relation between technology and society that exhibit a distrust of machines and capital and call for a complete rejection of technology.

It can be argued that the boundaries of this classification scheme are drawn too narrowly. But if one is willing to accept it, Slack defines simple causality as a linear relation in which technology causes effects in society. Effects are inherent in machines and their development is exogenous to the political and economic context. In contrast, a symptomatic view of causality is described as one that locates the emergence of technology within society, but considers effects only after the hardware or software has appeared. Finally,
expressive causality views technology directly with the essential characteristics of society, e.g., mechanization. In Slack's view, effective intervention is precluded by these causal models.

Slack's presentation of Althusserian theory and structural causality is readable and will engage even the most confirmed critics. Unlike most discussions that draw on Althusser's theoretical model, the theory is applied to the real world. It is not possible simply to dismiss this work on the grounds that the theory is elitist and unconcerned with practice. These criticisms must be shown to hold where the theory is applied to concrete analysis.

Accepting the economic level as determining, Slack argues that there are a myriad of secondary overdeterminations or contradictions at other levels. The task for research is to search for particularly dominant effective relationships between technology and society. Slack focuses on the legislative branch of the State and U.S. Patent Laws that subsume the process of technological invention within the capitalist relations of private property. She argues that this legal framework provides a means for the control of technology by monopoly capital and ensures that technology is shaped to meet the needs of capital. Useful details on the role of patent law in the development of the Bell Telephone System empire and other inventions are provided. Slack shows how the patent laws have been used to exercise exclusionary control over alternative technology developments and to force inventors in the non-monopoly capital sector to bear risks on behalf of large corporate enterprises.

The system of patenting both legitimatizes and is the result of an ideological system that enforces inherent individual property rights in invention. Slack argues that the further extension of patent laws (or copyright and trade secret laws) to include computer software would let "...the self-serving interests of capital define for us...how we communicate and the means of communicating...." (p. 123). Granting property rights in any invention is politically unacceptable because it functions to preclude the development of technologies by individuals that do not respond solely to the interests of the capitalist class.

An evaluation of this intervention strategy requires that we ask whether it results from an analysis that shows that patent laws are indeed a central factor that permits monopoly capital to control the form and uses of technology. Or is this intervention alternative the result of the rigidity of the theoretical framework? If the application of patent law is symptomatic of more fundamental forms of control that are not directly related to the laws that enforce property rights, then we would have grounds for questioning the viability of the theoretical framework.

There can be no doubt that patent law has been a significant instrument available to powerful corporate interests and has provided a means of controlling technology development that, on balance, supports
their interests. But the intervention process also requires economic resources that are largely controlled by monopoly capital. Markets for information and communication products are shaped increasingly by these powerful firms. In the case of the development of the American Telephone and Telegraph monopoly, it was not simply patent law that facilitated the emergence of a monopoly or resulted in a telephone system designed in large part to serve business interests, interconnection restrictions, predatory pricing, corporate takeover and collusion, and the recruiting of state regulation that excluded competition, etc., all contributed to the development of monopoly power in this industry.

Will a denial of patent protection to an inventor, individual or corporate, permit the development of technologies that are less subject to the control of monopoly capitalist interests? It seems that the theoretical basis for this analysis leads to a position that is difficult to defend in the face of reality. Patent law and the ideology it entails is not the key contradiction in the development of new communication technologies. Patent laws were designed to protect small inventors, to encourage invention and to limit the extent of monopoly. It is possible that the removal or absence of patent restrictions would make it easier for dominant political and economic institutions to exert control over the invention process. History has shown that these institutions and actors are extremely flexible. They have the resources to devise alternative methods of control. The Althusserian model with its emphasis on ideology has occluded analysis of the contradictory political and economic incentives embedded in institutional relations.

This volume will be helpful to those interested in the historical development and role of patent laws in the United States. It also will assist those who seek to elaborate an alternative theoretical framework for research within a society that is becoming concerned with information, its production, distribution, and accessibility. This may be true for those who continue to accept the rigid premises of Althusserian theory as well as those who seek further confirmation of its impractical idealism.