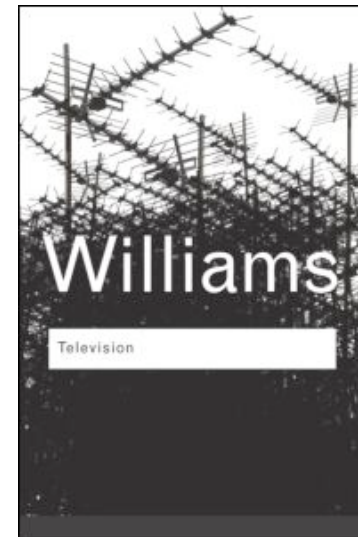


Technological determinism is the claim that "[N]ew technologies are discovered, by an essentially internal process of research and development, which then sets the conditions for social change and progress. Progress, in particular, is the history of these inventions, which 'created the modern world' The effects of the technologies, whether direct or indirect, foreseen or unforeseen, are as it were the rest of history." **Raymond Williams, *Television, Technology, and Cultural Form***



"Printing, gunpowder and the compass ... whence have followed innumerable changes, in so much that no empire, no sect, no star seems to have exerted greater power and influence in human affairs than these mechanical discoveries." **Francis Bacon, *Novum Organum*, 1620**

*"He who first shortened the labor of copyists by device of movable types was disbanding hired armies, and cashiering most kings and senates, and creating a whole new democratic world: he had invented the art of printing."* **Thomas Carlyle, *Sartor Resartus*, 1833**

- "[M]en make cloth, linen, or silk materials in definite relations of production. ... these definite social relations are just as much produced by men as linen, flax, etc. Social relations are closely bound up with productive forces. In acquiring new productive forces men change their mode of production; and in changing their mode of production, in changing the way of earning their living, they change all their social relations. The hand-mill gives you society with the feudal lord; the steam-mill society with the industrial capitalist." **Karl Marx, *The Poverty of Philosophy*, 1847**

"After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western World is imploding, .... after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time ... **we approach the final phase of the extensions of man--the technological simulation of consciousness.**" Marshall McLuhan, *Understanding Media, 1964*



"Engineers and managers engaged in prediction prefer the extrapolation of trends to the formulation of complex scenarios .... factors influencing the growth ... were, by implication projected into the future."

"History, of course, raises grave doubts about such extrapolations, but the study of history is not required of engineers and managers." --Hughes, *Networks of Power*, 1983

**HUGHES, *NETWORKS OF POWER***

- Finally, the bourgeoisie learned how to gain possession even of the trade unions—i.e., the organizations of the working class itself; and it made use of them on a large scale, particularly in Great Britain, to discipline the workers. It domesticated the leaders, and with their help inoculated the workers with the fiction of the necessity for peaceful organic labor, for a faultless attitude to their duties, and for a strict execution of the laws of the bourgeois State. The crown of all this work is Taylorism, in which the elements of the scientific organization of the process of production are combined with the most concentrated methods of the system of sweating. (p. 146) Under capitalism, the system of piece-work and of grading, the application of the Taylor system, etc., have as their object to increase the exploitation of the workers by the squeezing-out of surplus value. Under Socialist production, piece-work, bonuses, etc., have as their problem to increase the volume of social product, and consequently to raise the general well-being. Those workers who do more for the general interest than others receive the right to a greater quantity of the social product than the lazy, the careless, and the disorganizers. (p. 149)-**Leon Trotsky as quoted in Antonio Gramsci's *Prison Notebooks***