

# Some Notes on Norbert Wiener's Views of Secrecy in Science, Intellectual Property, and the Value of Information

## I. Excerpts from *Dark Hero of the Information Age*.

### Wiener's views on secrecy in science & intellectual property.

Wiener had other reservations about the direction of postwar science. He cursed the continuing secrecy imposed on basic science by military and government funders. He deplored the emerging alliance of science, industry and the military, with its proprietary controls over the new technologies the government and its corporate partners were jointly developing and putting into production. Scientists had accepted strict measures of secrecy and tight restraints on their choice of work, and on their movements at home and abroad, for the sake of the war. "We had expected that after this war—as, after all, before—we should return to the free spirit of communication, intranational and international, which is the very life of science," he lamented. But now he found that "whether we wished it or not, we were to be the custodians of secrets on which the whole national life might depend. At no time in the foreseeable future could we again do our research as free men. Those who had gained rank and power over us during the war were most loath to relinquish any part of the prestige they had obtained." (p.238)

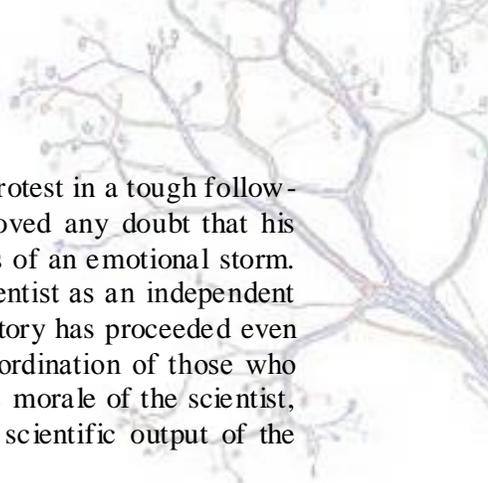
He felt compelled to actively oppose the military enterprise that, he believed, threatened the souls of scientists and posed grave perils to the world.

"I thus decided that I would have to turn from a position of the greatest secrecy to a position of the greatest publicity, and bring to the attention of all the possibilities and dangers of the new developments."

He was not the first prominent scientist to forswear atomic weapons and warfare, but Wiener was the first scientist associated with the new communication and control technologies who publicly refused to cooperate with the government and its agents on a project ostensibly in the nation's defense.

In his first public statement on the approaching automated society, Wiener tried to be even-handed. "It may very well be a good thing for humanity to have the machine remove from it the need of menial and disagreeable tasks, or it may not. I do not know." But he did know that "it cannot be good for these new potentialities to be assessed in the terms of the market, of the money they save." To head off the human impact he saw coming, Wiener proposed a simple, common sense solution that would become his hallmark: "The answer, of course, is to have a society based on human values other than buying or selling....To arrive at this society, we need a good deal of planning and a good deal of struggle." (p.239)

His vow of noncooperation touched off heated debate in the inner circles of American science, but



Wiener would not call off his rebellion. Two years later, he stepped up his protest in a tough follow-up piece in *The Bulletin of the Atomic Scientists*. His new statement removed any doubt that his earlier action was taken from a firm moral conviction, and not in the throes of an emotional storm. “In the first place, it is clear that the degradation of the position of the scientist as an independent worker and thinker to that of a morally irresponsible stooge in a science-factory has proceeded even more rapidly and devastatingly than I had expected,” he wrote. “This subordination of those who ought to think to those who have the administrative power is ruinous for the morale of the scientist, and quite to the same extent it is ruinous to the quality of the objective scientific output of the country.”

He renewed his pledge and strengthened it:

In view of this, I still see no reason to turn over to any person, whether he be an army officer or the kept scientist of a great corporation, any results which I obtain if I think they are not going to be used for the best interests of science and of humanity.... (p.243)

## Wiener's views on intellectual property and the value of information.

Wiener stressed the social dimensions of cybernetics. He described communication as the “cement” of society “which binds its fabric together,” and he offered his lay audience a novel definition of the new stuff of information that was beginning to appear everywhere in society. For Wiener, information was not a string of digitized bits, as Shannon defined it, or anything and everything, as Weaver portrayed it, but a process with a purpose:

The process of receiving and of using information is the process of our adjusting to the [circumstances] of [our] environment, and of our living effectively within that environment. The needs and the complexity of modern life make greater demands on this process of information than ever before, and our press...our scientific laboratories, our universities, our libraries...are obliged to meet the needs of this process or fail in their purpose.~

Wiener's definition of information was revolutionary in the scientific sense, but more revolutionary were his thoughts on the economic value of information, and on its nature as a commodity which differed greatly from conventional, matter-and-energy commodities. He questioned the wisdom of applying traditional market values to the realm of information and communication, as many new technology industries were doing. Speaking directly to his American audience, he believed it was important to point out that the mechanism of the market alone “does not represent a universal basis of human values.”~ His problem with the market approach was not a criticism of any social or economic theory but, to the contrary, the recognition of a new economic reality unique to the nature of information itself; and he was convinced that the market approach inevitably “leads to the misunderstanding and the mistreatment of information and its associated concepts.”~

Indeed, Wiener was the first information-age forerunner to consider information, not as a tangible good to be bought and sold, but as “content”~—whether that content was an ephemeral commodity like the news, a body of scientific knowledge, or the living substance of everyday experience human beings extracted from the world around them. To his mind, the value of that information, or any technology associated with it, was tied to its value for human survival, and to its real potential to inform and improve the lives of people and societies. While not averse to commercial enterprise, he viewed the exploitation of information to the detriment of those human values as a threat to the wealth of nations, to their security, and to their very survival, and he called for the “unhampered exchange”~ of knowledge and information in every form. (pp.248-249)

## II. Quotes from Norbert Wiener's writings and speeches.

*"Information is information, not matter or energy. No materialism which does not admit this can survive at the present day."* • —*Cybernetics*

*"The fate of information...is to become something which can be bought or sold....It is not my business to cavil whether this mercantile attitude is moral or immoral, crass or subtle. It is my business to show that it leads to the misunderstanding and the mistreatment of information and its associated concepts."* • —*The Human Use of Human Beings*

*"We have a good deal of experience as to how the industrialists regard a new industrial potential... They have very few inhibitions when it comes to taking all the profit out of an industry that there is to be taken, and then letting the public pick up the pieces."* • —*The Human Use of Human Beings*

*"Such companies as IBM, RCA, Bell Labs, should not be represented at [the computing] meeting since if they fully appreciated the tremendous economic consequences involved in the development of computing machines as control devices they would undertake research immediately, inspired chiefly by the profit motive."* • —*Norbert Wiener, 1945*

### Wiener Sources:

[*Cyb*] Wiener, Norbert, *Cybernetics: Or Control and Communication in the Animal and the Machine*. Cambridge: The Technology Press and New York: John Wiley & Sons; Paris: Hermann et Cie., 1948; 2nd ed., 1961.

[*HUHB*] Wiener, Norbert, *The Human Use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin, 1950a; 2nd ed., 1954; New York: Avon Books, 1967; New York: Da Capo Press, 1988.

[*IAM*] Wiener, Norbert, *I Am a Mathematician: The Later Life of a Prodigy*. New York: Doubleday, 1956; Cambridge: MIT Press, 1964.

### Notes

~ "We had expected that after this war": *IAM*, 306-307.

~ "I thus decided that I would have to turn": *IAM*, 308

~ "It may very well be a good thing for humanity": *Cybernetics*, 28.

~ "In the first place, it is clear": "A Rebellious Scientist After Two Years." *Bull. of Atomic Scientists*, 4: 11, Nov 1948.

~ "The process of receiving and of using information": *HUHB*, 27.

~ "does not represent a universal basis of human values": *HUHB*, 154.

~ "leads to the misunderstanding and the mistreatment of information": *HUHB*, 155.

~ "content": *HUHB*, 26.

~ "unhampered exchange": *HUHB*, 166.

~ "Information is information": *Cybernetics* p.132.

~ "The fate of information": *HUHB*, pp. 154-155.

~ "We have a good deal of experience as to how the industrialists": *HUHB*, pp. 218-219.

~ "Such companies as IBM, RCA, Bell Labs": Memorandum to MIT President James J. Killian, Jr., 10.26.44.