

## POSITIVE SOCIAL SCIENCE

The words *positive*, *positivism*, *positive science*, and *positive social science* have meant many different things to many different people. In the context of French social thought, the words *positive science* were first uttered, it seems, by Madame de Staël (1766–1817), the eccentric thinker, writer, socialite, and associate of Romantic and scientific utopians of the late eighteenth and early nineteenth century (Gordon 1991, p. 271). Like others in her circle, Madame de Staël was enthusiastic about the role that scientific method could play in advancing human progress toward the goals of spiritual and material perfection. Historians of ideas typically end their trace of positive *social science* with the originators of modern sociology, that is, with Henri Saint Simon (1760–1825) and his disciple, Auguste Comte (1798–1857). Thus the linguistic turn from positive science to positive social science. There is of course some controversy over the “origins of sociology” question—for example, a case can be made for the claim that Aristotle (384–322 BCE) was the founder of sociology (and, for that matter, of economics, too)—but these claims are not a concern here.

Still, historically and methodologically speaking, positive social science is a difficult notion to define precisely. One way to define it is to name what its diverse advocates claim it is not: positive social science is not old school metaphysics, and it is not a normative branch of science, such as welfare economics or applied ethics. Against the speculative metaphysics of Plato (427–347 BCE) and Immanuel Kant (1724–1804), for example, and against the value judgments of moralists such as Jean-Jacques Rousseau (1712–1778) and Comte and the contemporary philosopher John Rawls (1921–2002), positive social scientists are united in their attempt to understand and explain the sensory world in objective, logical, factual, and value-neutral observational terms. The positive social scientist seeks a view from nowhere, or from God’s eyes. He does not necessarily do the empirical, factual side of the homework on his subject; he need only claim to believe that his logic speaks to the factual and logical as ultimate arbiters of objective inquiry. Since the late nineteenth century, most adherents to positive social science have dropped the historical belief in “progress” toward “perfection” by discontinuous stages or constant evolution, the inheritance of Comte and de Staël. After the publication of *Grammar of Science* (1892) by Karl Pearson (1857–1936), and especially after the 1929 publication of *Wissenschaftliche Weltauffassung: Der Wiener Kreis* (A Scientific Conception of the World: The Vienna Circle), the manifesto of the so-called Vienna Circle, the aims of positive social science entailed a set of beliefs and an argu-

mentative style more than it did a historical explanation or perfectionist state to be aimed for.

If positive social science ever had a firm philosophical grounding, the grounding was provided not by the so-called *wertfrei* (value-free) social science of the economic sociologist Max Weber (1864–1920) but rather by a series of philosophical arguments commonly referred to as *logical positivism*. Initially a loosely knit group of philosophers, physicists, economists, sociologists, and mathematicians, the logical positivists were directly associated with or otherwise allied with the Vienna Circle. A goal of the logical positivists, early and late, was to firmly lodge the “fact/value dichotomy” into the minds of working scientists, a dichotomy first brought to the attention of philosophers by Kant and to social scientists by David Hume (1711–1776). Logical positivists tended to conflate the analytic/synthetic argument of Kant with the ought/is argument of Hume. Despite or perhaps because of their struggle to construct a “unified science,” the positivists did not much quibble over their own ambiguities.

Ever since a simple faith in positivism has faded, social scientists have typically stuck to a Humean argument. Hume, many interpreters have said, suggests in Book III, Part 1, of his *Treatise of Human Nature* (1739) that one cannot derive *ought* propositions from *is* propositions. He is commonly understood to have argued that value judgments cannot be derived from factual observations. Facts and values are distinct entities, most of his interpreters have held, making a kind of fork between data and judgment. Since the 1920s the vast majority of economists, political scientists, and psychologists have taken Hume’s fork as dogma. A similar influence of the fact/value dichotomy on medical and biological research has not gone unnoticed (by contrast, anthropologists and sociologists have long raised objections to it).

Logical positivists took Hume’s fork to be the whole scientific meal, a belief that rapidly entered the mainstream of social scientific thought. Only scientific statements were to be accepted as “cognitively meaningful.” And only axiomatic and value-neutral statements about the facts of the world would count as science. Value judgments—especially judgments of an ethical kind—were said to be the province of preachers and poets, objectively speaking, “meaningless,” no guide to social or economic policy.

Often it is not obvious how one can push values entirely aside so that objective facts are the only entities revealed. Take, for example, the sentence “Iraq does not have weapons of mass destruction.” At one level of reading, it is a straightforward factual claim—true, false, or uncertain. Iraq is a nation, nations engage in both self-defense and aggressive war, weapons of mass destruction have been used in war by other nations, and many nations

agree on what counts as a weapon of mass destruction: these are facts. Presumably one could assemble a team of social, physical, and life scientists, trained in best-practice census tabulation, sampling theory, and experimental and analytical methods, such that—conditional on Iraqi government cooperation or military force—one could arrive at a correct answer to the central factual claim: Iraq does not have weapons of mass destruction.

But the interdependence of facts and values can be illustrated by a single change in subject-object relation. Suppose the original sentence is changed to “The United States does not have weapons of mass destruction” (a change in subject) or “Iraq does not have balloons for school decoration” (a change in object). Changing the subject from Iraq to “the United States” or the object from weapons of mass destruction to “balloons for school decoration” involves not merely a change in the facts of the subject and object, but a thorough-going change of perspective, driven not by the raw facts—however defined—but by value judgments largely or entirely embodied by the original sentence. Some officials of the U.S. government, including some high-ranking scientists, obviously do not care about, or are not troubled by, the fact that the U.S. government has weapons of mass destruction. “The United States does not have weapons of mass destruction” is not a factual statement that can elicit a similarly massive sacrifice of money, time, capital, and human lives. A change in object brings one to a similar conclusion. “Iraq does not have balloons for school decoration” is a claim that could presumably be answered by the same team of scientists, statisticians, and military personnel. But the U.S. government does not value the answer to the latter claim; it will not sacrifice many resources to discover the truth about balloons.

Fact statements and value statements are interdependent in science because human motives generate the questions and methods of science. This is not a bad thing to admit for either science or society—on the contrary, it is probably an advantage. Free and public deliberation over the values and interests of science and society is, for instance, an alternative to despotism and mass ignorance. And the expansion of free and democratic alternatives tends, social scientists agree, to increase human well-being. Opinions differ on the 2003 U.S.-led invasion of Iraq. For example, some say the loss to the world of being *wrong* about the original claim may be so large that any scientific and military investigation should receive funding until surety on the issue is achieved. But even then one is not armed with reasons sufficient to justify allegiance to the factual side of the alleged fact/value dichotomy. Different opinions on facts and values prevail over most public matters. For example, many public institutions, from elementary schooling to space exploration, persist with mass approval, despite a wide variance of professional

economic opinion. To put it another way, who would spend billions of dollars trying to discover whether another nation has balloons to decorate their schools? Only a fact-crazed scientist, lacking a rhetoric of values.

At still another level of reading—as seen from the values-only side—the fact/value dichotomy remains dubious. Suppose the original sentence is changed to “According to the United States government, Iraq should not have weapons of mass destruction.” The new sentence directly appeals to a value judgment. Notice it does not say exactly from whom the value judgment is coming (only “the government”). And it does not say who the speaker of the sentence is. But the word *should* has replaced the word *does*, signaling, it seems, an abandonment of facts and a decisive move over to the values side of things. But there are at least two objections one can raise to such a conclusion: (1) The author of the original sentence and her readers were never on the facts-only side of things, as the argument above suggests, in the first place; and (2) The sentence “According to the United States government, Iraq should not have weapons ...”, if taken in the same spirit as the supposedly facts-only claim (“Iraq does not have weapons ...”), must entail a moral commitment to change the situation (that is, the situation implied by the fact that Iraq has the weapons, if they do). But if the U.S. government is to change the situation, as indeed it endeavored to do when it sought to determine factually whether Iraq had the weapons, it must commence with the same or similar scientific investigation and, perhaps, military force, as in the previous case. The decision of a scientist engaged in free inquiry is not a decision to speak about facts as against values, or positive science as against normative science; it is a decision to choose transparency over opacity. Status quo belief induces most to choose the latter. Yet by 1974 one scholar counted “two score and more of [philosopher and scientist] witnesses *against* the fact-value split” (Booth 1974, p. 207; emphasis added).

The philosopher and logician Hilary Putnam (2002) has taken the argument a step further, showing that even if one insists that *is* and *should* or *is* and *ought* are radically distinct, and that *ought* propositions cannot be derived from *is* propositions, as some scientists maintain in, for example, the case of weapons of mass destruction, there are still further “value judgments” of an aesthetic type that permeate the most factual sounding research claims. (Putnam’s observation is not original, but it is nowadays rare; one can find a similar link between aesthetic qualities of science and normative judgment in Aristotle’s *Rhetoric*.) Scientists value, for example, “coherence,” “simplicity,” and “consistency” in their models and facts (and again Putnam is hardly the first scholar to say so; cf. Burke 1950). Aesthetic values are always at play in science and

are, as any scientist who has received a referee report can attest, constantly being judged by “positive” scientists.

It has been a long time since any respectable historian or philosopher of science believed that logical positivism succeeded in its goal to speak in a circumscribed, fact-and-logic only language. Today, very few philosophers adhere to the fact/value dichotomy, though, to repeat, social scientists cling to it.

### POSITIVE SOCIAL SCIENCE AND NOVELTY IN ECONOMICS

Still, many novel ideas in economics have emerged despite the strange faith. Before the publication of Milton Friedman's (1912–2006) *Essays in Positive Economics* (1953), the Dutch economist Jan Tinbergen (1903–1994) and the American economist Lawrence Klein were inspired by visions of positive science to build multiequation econometric models of the Dutch and U.S. economies. The facts of these economies could be revealed through logical (that is, model-based) relations widely held by economists. Both models failed at the level of macroprediction. But for their remarkable technical achievements, both Tinbergen and Klein were awarded (in 1969 and 1980, respectively) the Nobel Prize in Economic Sciences.

Following the work on the theory of human capital by the economist and 1992 Nobel laureate Gary S. Becker, first developed in the 1950s and 1960s, positive economists and sociologists have developed new methods for examining the extent of racial and gender discrimination in labor markets. Becker has argued that competition and the pursuit of profit will drive racist and sexist employers out of business. In statistical regression analyses, researchers after Becker have attempted to show the quantitative influence of race and gender by holding constant a host of independent variables—education level, family structure, labor force attachment, and so forth—such that race and gender are the only variables left in the model to “explain” black-white, male-female, or white-male/black-female differences in wages and occupational attainment.

That an adherence to positive social science and the fact/value dichotomy is coincident with some novel ideas in social science research does not demonstrate the fact or value of positive social science, however circumscribed. Indeed, both the Tinbergen-Klein and Becker research programs have been criticized on “value-laden” grounds: new classical and rational-expectations macroeconomists object that Tinbergen's and Klein's Keynesian models of agent behavior are not “consistent” with rational choice theory (consistency being a value judgment), and a wide range of economic sociologists working in the tradition of W. E. B. Du Bois (1868–1963) and St. Clair Drake

(1911–1990) reply that Becker's independent variables are themselves the products of racial and gender discrimination (O'Connor et al. 2001), a value judgment masquerading in the econometrics as mere data.

**SEE ALSO** *Friedman, Milton; Methodology; Normative Social Science; Positivism; Social Science, Value Free*

### BIBLIOGRAPHY

- Ayer, A. J. 1936. *Language, Truth, and Logic*. London: Gollancz.
- Becker, Gary S. [1957] 1971. *The Economics of Discrimination*. 2nd ed. Chicago: University of Chicago Press.
- Booth, Wayne C. 1974. *Modern Dogma and the Rhetoric of Assent*. Chicago: University of Chicago Press.
- Brown, Richard H. 1989. *Social Science as Civic Discourse: Essays on the Invention, Legitimation, and Uses of Social Theory*. Chicago: University of Chicago Press.
- Burke, Kenneth. 1945. *A Grammar of Motives*. New York: Prentice Hall.
- Burke, Kenneth. 1950. *A Rhetoric of Motives*. New York: Prentice Hall.
- Friedman, Milton. 1953. *Essays in Positive Economics*. Chicago: University of Chicago Press.
- Gordon, Scott. 1991. *The History and Philosophy of Social Science*. London: Routledge.
- Hands, D. Wade. 2001. *Reflection without Rules: Economic Methodology and Contemporary Science Theory*. Cambridge, U.K.: Cambridge University Press.
- Hirsch, Abraham, and Neil De Marchi. 1990. *Milton Friedman: Economics in Theory and Practice*. Ann Arbor: University of Michigan Press.
- Kuhn, Thomas S. 1970. Postscript-1969. In *The Structure of Scientific Revolutions*, 174–210. 2nd ed. Chicago: University of Chicago Press.
- O'Connor, Alice, Chris Tilly, and Lawrence Bobo, eds. 2001. *Urban Inequality: Evidence from Four Cities*. New York: Sage.
- Popper, Karl R. 1959. *The Logic of Scientific Discovery*. London: Routledge.
- Putnam, Hilary. 2002. *The Collapse of the Fact/Value Dichotomy, and Other Essays*. Cambridge, MA: Harvard University Press.
- Shapin, Steven. 1994. *A Social History of Truth: Civility and Science in Seventeenth-Century England*. Chicago: University of Chicago Press.
- Wittgenstein, Ludwig. 1922. *Tractatus Logico-Philosophicus*. Trans. D. F. Pears and B. F. McGuinness. London: Routledge.

**Stephen Ziliak**

## POSITIVISM

There are two uses of the term *positivism* in the social sciences, one derived from sociology, the other from