

## When Culture Met Science: Revisiting “A Humanistic Perspective of Science and Society”<sup>3</sup>

Mary Chayko  
College of Saint Elizabeth

When Sal Restivo and Michael Zenzen developed their “Humanistic Perspective of Science and Society,” the sociology of science was dominated by Robert Merton’s view of science as an autonomous, self-affirming social system. Directly challenging this view, Restivo and Zenzen proposed an alternative and more humanistic way to think about science, calling for the study of the social and cultural conditions in which scientific knowledge is produced and for its humane and ethical applications. They put forth an argument not only wide in scope and ambition but prescient as well, for it provided and continues to provide an excellent foundation for understanding a number of still-unresolved debates between science and sociology.

Several of these debates—flat-out battles, really—between scientists and sociologists of scientific knowledge (SSK) had just begun to percolate around the time of the publication of this article. Sociologists of science, in an effort to examine more fully the social conditions that influence the production of scientific knowledge, were putting forth the notion that a set of scientific ideas do not necessarily reflect objective “fact” or “truth” but, rather, are simply the products of a particular belief system—a culturally influenced system of ideas which might not hold or be considered scientifically valid in another belief system. Scientific laws, they pointed out, and the scientific method itself, were cultural creations, subject to change or to widely differing interpretation in a different time or place (Collins 1998, 1982; Barnes, Bloor and Henry 1996). Many scientists, of course, took issue with some (or all) of this (Gross and Levitt 1994). They stated firmly that scientific laws can and do hold across cultures and domains if they have been properly and reliably proven. This dispute was popularly referred to as the “science wars” (a rather unfortunate term, given the meaning and specter of actual human war), inspiring strong reactions and harsh words from many in the sociology and scientific communities (it even inspired a “hoax” article by physicist Alan Sokol which inflamed tempers further; see Sokol 1996a and b).

In the wake of all of this debate, however, a middle ground began to emerge. The role of cultural factors in influencing scientific production and the sociological underpinnings of such processes as the formulation of theories and the interpretation of data became increasingly visible and appreciated (see Labinger and Collins 2001, Mermin 1997 and Schweber 1997). Today, sociology has become a critical contributor to the understanding of such issues as the appropriate uses of biotechnology, ecological and environmental

<sup>3</sup>This paper originally appeared in *Humanity & Society* Volume 27, Number 3, 2003.

challenges, the trajectories and treatment of diseases, the phenomena of synchrony, the conceptualization of consciousness, mind and “reality,” and the global impact of a variety of technologies. And it is in this interdisciplinary spirit that “A Humanistic Perspective of Science and Society” has so much to say and so much to offer.

Restivo and Zenzen’s article helps us to understand just how culture and society belong in and must be brought into scientific investigations. Impressively broad in its scope and logical in its construction, it argues for the development of an interdependent academic and human community that operate in harmony with the laws of the physical/natural world and with social/cultural laws, with both sets of findings unified in a kind of meta-analysis dedicated expressly toward “enhancing the conditions of human living” (1978: 212). Implicitly rejecting extreme positions that the authors believe result in the hierarchical and subversive separation of people from one another, they describe exactly how this harmony can be achieved: by identifying the set of physical laws that constrain us, imagining the full complement of options available to us and then creating the conditions in which both scientific and cultural laws are most humanely realized. “It is possible,” Restivo and Zenzen explain, “to think about, propose, and create alternative natures inside and outside the laboratory, all of them consistent with a set of simple and beautiful laws” (1978: 214). These “simple, beautiful” laws must be identified and tested, yet always respected: they should be used to create a harmonious and ethical (as opposed to a politicized or commercialized) future which enhances individual and societal potentials. The agenda outlined in the article leaves plenty of work to go around, plenty for scholars in all disciplines to do, scorning interdisciplinary conflict in favor of cooperation and collaboration.

Restivo and Zenzen give a wealth of examples and suggestions for how a more humane future might be collaboratively imagined and realized. They discuss the roles played by cognition, love, consciousness, communication, and human relatedness, among other components of life, fluidly and thoughtfully. They tackle, for example, the tricky concept of “reality” and the way in which it is “lawful, but indeterminate”—subject to a series of physical laws which are never entirely discoverable by scientists but are legitimately and satisfactorily approximated nonetheless. Reality, in their capable hands, is described as only “conditionally comprehensible”: a province of both the physical and social worlds, too wide-ranging for any one discipline to colonize, yet too complex and important to conceptually (lazily?) dismiss. It is an appropriate way of considering a concept that has always begged for adequate definition while veering dangerously toward the indefinable. Fluently addressing this and other critical issues in which sociology and science both have a stake, Restivo and Zenzen demonstrate that there are many aspects of life which cut across the sociological, philosophical, and physical/natural realms, and that understandings gained in one area need not supplant or threaten that in another. Thus, the mounting of an overly rigorous defense (and defensiveness) regarding the boundaries of a given discipline is counterproductive to amassing and using knowledge intelligently and humanely. We are in this together.

The authors recommend we move from embracing a strictly scientific worldview to a more explicitly humanistic worldview encompassing wholism, a term used in both micro- and macro-physics to indicate the centrality of a consistent, self-determining structure within a boundless larger system (or universe) of which it is a part. They connect this idea to the Bohmian notion of holonomy which holds that the universe is an ever-unfolding infinity of interrelated things and processes (Restivo and Zenzen 1978: 223–224; Bohm 1971, 1973; see also Capra 2002). With the adoption and application of a worldview which embraces wholism and holonomy, knowledge generated in any field can be seen as part of a

connected whole which can (indeed, must) be coordinated with that in other fields and used for the benefit of all in the human community. To achieve this, they believe, is to achieve true wisdom in any field and to find liberation from polemical or oppressive thinking and behavior. To fail to do this, to settle for “science-as-it-is,” is to further our alienation from one another and the world around us (Restivo and Zenzen 1978: 211; Marx 1956, 1973); to further the “fragmentation of human lives” (Restivo and Zenzen 1978: 231).

Since academic disciplines will probably always be, to some extent, in competition over turfs, definitions, and funding dollars, the lessons of Restivo and Zenzen remain fresh and compelling and well worth revisiting. They point the way toward a sociologically sensitive, humanistic science and a scientifically sensitive, humanistic sociology—and they make the convincing case that the sum of these is much greater than what either part could accomplish alone. The implications of their argument venture far beyond the bounded “worlds” of physical science and sociology and into the realms of philosophy and psychology; all the sciences, social sciences, arts and humanities; and, indeed, all arenas for study and thought. In short, this article serves as a valuable resource for how to approach any endeavor humanistically—to remain engaged in “the continuing struggle to discover reasoned and humane ways of living in and thinking about our world” (1978: 232). For these far-reaching reasons, “A Humanistic Perspective on Science and Society” remains endlessly vital and timely, and richly deserving of this opportunity for a re-reading.

## References

- Barnes, B., D. Bloor and J. Henry (eds). 1992. *Scientific Knowledge: A Sociological Analysis*. London: Athlone Press.
- Bohm, D. 1971. “Quantum Theory as an Indication of a New Order in Physics. Part A. The Development of New Orders as Shown Through the History of Physics.” *Foundations of Physics*. 1:4:359–381.
- \_\_\_\_\_. 1973. “Quantum Theory as an Indication of a New Order in Physics. Part B. Implicate and Explicate Order in Physical Law.” *Foundations of Physics*. 3:2:139–168.
- Capra, F. 2002. *The Hidden Connections: Integrating the Biological, Cognitive, and Social Dimensions of Life Into a Science of Sustainability*. New York: Doubleday.
- Collins, H.M. 1982. *The Sociology of Scientific Knowledge: A Sourcebook*. Bath: Bath University Press.
- \_\_\_\_\_. 1998. “The Meaning of Data: Open and Closed Evidential Cultures in the Search for Gravitational Waves.” *American Journal of Sociology*. 104:2:293–491.
- Gross, P.R. and N. Levitt. 1994. *Higher Superstition: The Academic Left and Its Quarrels With Science*. Baltimore, MD: Johns Hopkins University Press.
- Labinger, J. and Collins, H. 2001. *The One Culture: A Conversation About Science*. Chicago: University of Chicago Press.
- Marx, K. 1956. *Economic and Philosophic Manuscripts of 1844*. Moscow: Foreign Languages Publishing House.
- \_\_\_\_\_. 1973. *Grundrisse*. New York: Vintage Press.
- Mermin, N. D. 1997. “Reference Frame.” *Physics Today*. October. 50:11.
- Merton, R.K. 1973. *The Sociology of Science*. Chicago: University of Chicago Press.
- Restivo, S. and Zenzen, M. 1978. “A Humanistic Perspective on Science and Society.” *Humanity and Society*. 2:4:211–136.
- Schweber, S.S. 1997. “Reference Frame.” *Physics Today*. March. 50: 73.
- Sokol, A. 1996a. “A Physicist Experiments With Cultural Studies.” *Lingua Franca*. May/June. 62–64.
- \_\_\_\_\_. 1996b. “Transgressing the Boundaries: Hermeneutics of Quantum Gravity.” *Social Text*. 46/47. 217–256.