Systematics as Cyberscience: Computers, Change, and Continuity in Science


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I was drawn to Christine Hine’s Systematics as Cyberscience: Computers, Change, and Continuity in Science because the synopsis of the book suggested it was a study of the ways that biologists working in this field have engaged with new technologies as the field sustained its heritage and changed to accommodate new possibilities. While some information about research techniques and practices was included, I was disappointed to find that the book’s concern was not with the practices that advance the field but, rather, the dynamics of the community as its tools change. More to the point, as topics captured my imagination, I was intrigued by her discussion of the idea that virtual settings are both cultural sites in their own right and cultural artifacts subject to ongoing processes of interpretation. I also was fascinated by her discussions on how balancing historical approaches with the introduction of cyberspace created a need to seek a balance between automation and expertise. I was quite taken with the sections that detailed the difference between material and virtual samples, although I would have liked more information on this topic. The paragraphs where she mentioned what systematists do and/or compared their goals with those of other branches of science (e.g., genetics) were particularly informative. Indeed, these comparative sections convinced me that the writing would have communicated better to generalists had Hine introduced the field initially and stressed scientific practices more than the sociological aspects of the field. Similarly, a different approach to the examination of the use of computers in science as a topic in policy circles, including the appeal of efficiency, data sharing and collaboration within the debates, might have served her better.

As an outsider, I was left with many questions and disappointed to find that parts of the book I found most informative were outside the scope of the study. Some of my questions were as well. For example, I wondered about the connections between systematics and evolutionary theory.

To my mind, the book’s overall organization undermined the depth of its research and background. Hine opens with a quite interesting vignette of her personal history to explain what led her to write what she sees as a somewhat idiosyncratic ethnographic study. I was actually quite enthusiastic about what would follow because she clearly articulated her fascination with the field and that she had looked at it from the inside, as an undergraduate, before stepping into the ethnographic role and adopting a sociological perspective. Her second chapter was intended to flesh out what claims are made for ICTs in science and how we think about technologies more broadly, particularly in terms of policy. Although I assume this discussion was intended to show a broader connectivity among fields, it did not accomplish this goal because the discussion came off more as a literature review intended to place her study within the sociological arena. She really does not offer an in-depth introduction...
to what "systematics" is until the third chapter (on p. 64). By the time the "introduction" showed up, I had already gone on-line to clarify the term.

The end result is that Hine's interest in showing connectivity within the systematics community was so narrowly presented that the book seems to obscure the actual research within the field. She also seemed to assume the reader was totally naive of the entry of ICIIs into science as a whole. However, it was the narrowly defined assumptions that were perhaps the most striking aspect of this book. These assumptions made the carefully written text seem more academically correct than scientifically robust in a substantive way. Paragraph after paragraph was filled with details and references explaining what was to come and where related discussion could be found; yet the totality seemed to lack a core. For example, while Hine states that science is not a singular pursuit in terms of how researchers address systematics and stresses the value in connective research, she writes with a surprising disregard for how much of the "sociology of systematics" as she presents it is a part of all sciences today. For example, she repeatedly refers to the systematics e-mail list, TAXACON, as if it is unique and unusual. I am on many e-mail discussion lists, for all kinds of fields, so I can say that the types of discussion she relates are common as practitioners confront various types of problems/projects. She writes as if unaware that all fields have lists like TAXACON.

Surely, this is not the case! While I recognize that academic studies earn their credibility by focusing in on narrowly defined parameters, in this case, the "narrowing" process undermined what the book could have accomplished.

That a great deal of debate about the impact of the new technologies on systematics research has taken place on mailing lists (in this case TAXACON) strikes me as less "important" than the scientific ramifications of these debates in a larger sense.

In summary, as noted above, I was drawn to the book because it was billed as a study of the ways that biologists working in this field have engaged with new technology. I thought an in-depth account of how one of the oldest branches of science has transformed itself into one of the newest and became a cyberscience would educate me more about systematist practices. Hine's use of an ethnographic approach successfully conveys that a virtual culture in systematics has emerged and indicates that this new culture is entwined with the field's existing practices and priorities. The sociological aspect of the work might appeal more to specialist readers in this discipline. Similarly, her choice to examine the policy perspectives on systematics rather than its scientific practices might appeal to others. I, however, found that the book was less effective in conveying how the contemporary outcomes are thoroughly rooted in the heritage of the discipline than in conveying the conversations among practitioners, institutions and others involved in fact-finding. While Hine does convincingly argue that we need to take account of the many complex and conflicting pressures navigated by contemporary scientists if we are to understand the impact of information and communication technology in science, her presentation only touches upon the relationship between systematists and contemporary efforts to explain the Earth's biodiversity. Still, because she does convey that results of technological developments are rarely unambiguous and that they are highly discipline-specific, the book did capture enough about the "systematist" experience to give me new insights about the sciences of systematics. I am eager to learn more.