Social Science Research Needs and New Information Technologies

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Four critical concerns for the development of a social research agenda on advanced information technology are (a) defining a theoretically and comparatively driven research program, (b) initially emphasizing exploratory and descriptive research, (c) treating technologies as both dependent and independent variables in a social context, and (d) avoiding reductionism. Some guidance on each of these concerns is offered.

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In the development of a national social science research agenda for the relationship of advanced information technology to culture and society, there are several questions and concerns that must be kept in mind. A few of these are offered here as guidance for the social science community as it develops this agenda.

The social science community should define a theoretically and comparatively driven research program rather than one driven by policy concerns or a particular technology. It is vital to be clear about the goals of such a program and what it seeks to account for. A clearly defined, middle range approach is needed. To cast the net too widely is to diffuse energy and mix unrelated phenomena. Yet, to restrict it too narrowly just to current policy and legal definitions (e.g., the National Information Infrastructure) is much too narrow. There are other sources for applied and policy research. Any National Science Foundation efforts should focus on the advancement of knowledge at a more general level. Policy issues and technologies change much more rapidly than do the fundamental social scientific questions. We need to ask *why* in addition to *how*. The why refers to both social science causation and values.

I have found it most helpful to define my research interests around the broad term of *new information technologies.* This involves an interest in causes, forms, processes, and consequences. The focus is on the merging of computer and telephone technologies as broadly defined. A key interest is in communication and information creation, analysis, and transfer. Central analytic elements, which are variables transcending these technologies, involve (a) relatively inexpensive, mediated interactions that are almost instantaneous regardless of location; (b) interactions on a vast, complex, horizontal networked scale; and (c) interactions that can be freeze-dried, altered, and combined for future use. I think that from this set of characteristics flow many of the most interesting aspects such as the implications for the meaning of community, borders and boundaries, property, work, stratification, civility, deviance, crime, and law and social control.

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Initial efforts should emphasize exploratory and descriptive research. The focus should be on developing data pools that inform us of how, where, and by whom the various technologies are being used. It is premature to develop and apply highly sophisticated theoretical models. We need to develop middle-range concepts and approaches and descriptive information on patterns of use, attitudes, and experiences before raising the level of abstraction. The research must, of course, be guided by theoretically derived questions.

We should recognize that although technologies have consequences, at times they must also be treated as dependent variables whose prior correlates we wish to understand. Here we ask, what is associated with technical innovation and how is its production organized? What factors are associated with the development of various kinds of innovation? What patterns of diffusion and adoption can be identified? Of all the problems and solutions that might be identified, which ones appear and what social factors effect this? What social and cultural interests shape technological development? What kinds of problems are defined and what types of design solution are offered? A more difficult but very important question to ask is, What does not appear that might be expected to appear under different social conditions? A related approach is comparative with respect to other closely related technologies such as the telegraph, telephone, radio, and television or more distant technologies such as the railroad, automobile, and airplane.

Finally, social researchers must avoid reductionism. In considering social science research on a topic so enshrouded in entrepreneurial concerns and exaggerated claims, it is important not to get caught up in either technological determinism or reductionism. Neither the millennium nor the apocalypse is around the corner (actually, the millennium is – but one of a different sort). Technology must be viewed as both effect and cause. All of the standard questions from sociology, anthropology, political science, psychology, geography, and economics can be applied to this set of human activities. The intersection of social science, ethics, and values seems particularly ripe for inquiry.

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