

Project Description

Introduction

The world today is awash in change as digital technologies are reshaping the landscape of a fading industrial era (e.g. Castells 1996, 1997, 1998). In the past century, it has largely been through a quantitative natural science model that scientists have analyzed changing social structures (e.g. Nachmias and Nachmias 1987; Kuhn 1962) as well as culture (Merton 1973; Znaniecki 1934). But some prominent thinkers (e.g. Touraine 1988) have claimed that the post-industrial era requires social scientists to emphasize field work and qualitative methods to make sense of this latest "great transformation" (Polanyi 1944).

This proposal argues that there is a need for the academy to both update and re-think field research. We use the term "field research" in its "Chicago School" sense that Robert Park told his students to get out of the library and out into the streets and "write down what you see, hear, and know" (Anderson 1923). We include ethnography, in-person interviews, collaborative research, and other types of scientific observation of people in social interaction. The Kenneth B. Clark Center proposes to establish a web-based infrastructure to advance the practice of field research. We address two general problems:

First, field research needs updating. Researchers are either reluctant to use digital technology, or use it only in modest ways. The world wide web is often seen as merely a computer-based way to reproduce printed material and store it digitally, or to communicate by email. The web is not often understood as an interactive tool which can transform relationships between scientists and between the public and the academy. Social scientists have not seen the potential for the web to radically alter the entire process of collecting, analyzing, archiving, and disseminating data.

Second, field research needs rethinking. Postmodern challenges to representation and the nature of science have shaken the foundations of social inquiry (Graff 1979; Fish 1994; Calhoun 1995; Touraine 1995; Rosenau 1992; Dickens and Fontana 1994). The very possibility of acquiring knowledge through the application of scientific techniques has been questioned (e.g. Clifford and Marcus 1986). New qualitative paradigms of research (Lincoln and Guba 1985) have been formulated, for example, those which substitute a "text" for empirical reality (Denzin 1994). Field research today is having a severe identity crisis.

One reason for this quandary is that the scientific community has paid relatively little attention to training in field research. No infrastructure exists to experiment with

new and web-based methodologies and techniques which could effectively integrate quantitative and qualitative data. Nor are there any national centers which could train a new generation of field researchers. No intellectual center exists to reexamine the role of field research and add to theory.

We propose to create a web-based infrastructure for field research composed of:

- **A virtual concentration of outstanding field researchers who will train and mentor younger social scientists, and debate issues of vital concern to the discipline.** UIC's Kenneth B. Clark Center has already begun organizing seminars with the top field researchers in the country. This proposal would allow us 1. to train and mentor a new generation of field researchers using both traditional and web-based techniques, 2. to build a digital archive of training materials, and 3. to address the future of field research.
- **A "digital library of field research" which will archive historic and contemporary qualitative material and link them to quantitative data sets.** The digital library will archive historic and contemporary textual, photographic, and video documents, including the highly significant documents of the early Chicago School. It will develop a common electronic "interface" for qualitative documents that allow the aggregation of qualitative data into searchable electronic files. It will provide the basis for the integration of quantitative and qualitative materials through GIS software and other means. The digital library will also give researchers the capacity to revolutionize the use of "personal documents," giving voice to the "research subject" in new ways.
- **A pilot multi-city study of the "digital divide" which can be used as a template for how to do field research in the information era.** Researchers in four cities will be linked by videoconferencing and data visualization techniques to conduct a preliminary investigation into the impact of the digital divide in different types of neighborhoods. This study will be designed as a template for how to go beyond the case study method in field research and effectively utilize the web. The digital library will be used as a focal point for the organization, analysis, and dissemination of the comparative studies. Links to public libraries and other neighborhood units will provide web-based feed-back mechanisms to residents, local officials, and the public. The study will also confront issues of privacy and confidentiality implicit in widespread use of the web.
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In confessional style (Van Maanen 1988), the authors of this proposal admit from the start that we do not have all the answers. We think much will be learned in the process of building the Clark Center as the hub of a national infrastructure for field research. Neither do we know where a vigorous theoretical debate will lead. We do know, how-

ever, what the necessary components of an infrastructure should be, how to organize them, and at least some of the right questions for debate.

This proposal first expands on the rationale for the project, then explains the three basic components of a national infrastructure for field research. We will show how we intend to use NSF funds to build a web-based scaffolding around the current projects of the Clark Center.

Rationale for A National Infrastructure for Field Research

There are four reasons to build a national infrastructure to promote field research.

First, the practice of field studies has not advanced much from its early 20th century roots. Many researchers still take field notes on paper and sort by cards, rather than using data bases or hyper-text retrieval programs like Folioviews™ or Nudist™. Even when text-retrieval programs are use they are seldom integrated with the world wide web. Despite scattered and isolated attempts like the International Visual Sociology Association or the on-line forum in *Qualitative Sociology* (<http://www.qualitative-research.net>), the web and field research are comparative strangers. Field workers have not taken advantage of ArcView™, MapInfo™ or other GIS systems, which are adaptable for qualitative investigation. Field data are overwhelmingly case studies, which are typically not comparable between sites. Quantitative data is often tacked onto to qualitative studies, not conceptually integrated.

Second, the web can revolutionize the training of field research. There has been a comparative lack of academic attention to training in field research techniques. Additionally, there are too few minority and female social scientists engaged in field work in poor, minority communities. While there are some departments in a few universities which specialize in qualitative methods, there are no national centers specializing in field work training and development similar to the University of Michigan's quantitative Institute for Social Research (ISR).

Developing a national field work training institute modeled after traditional institutes like ISR, however, would be shortsighted. The world wide web has transformed education everywhere and thoughtful use of the web is absolutely indispensable for the reorganization of field work training. Twentieth century models of training centers physically rooted in one city are obsolete: the integration of web-based and in-person training is a 21st century requirement.

Third, there is a need to face new theoretical challenges. The issues raised by postmodern critiques are important. Can field research "represent" the voice of the powerless? How can field researchers enable those lacking in power to speak in their own voice? Can reflexivity compensate for the different social position of the researcher and

"research subject?" What is the role of the "author" in reporting research and what is the meaning of social responsibility in research? Can knowledge be meaningfully compared across sites? A few forums have aired these and similar issues, but there exists no national platform for a sustained debate.

The world wide web also presents new challenges to field research. For example, confidentiality becomes a much more serious question when field notes, photographs, and other data can be easily posted on the web. This issue needs careful investigation.

Fourth, the information era has raised new questions which are not easily answerable by quantitative methods alone. Field research traditionally has been at its best in identifying new issues which are not easily quantifiable (e.g. Whyte 1984; Hagedorn 1990). Among the most important contemporary issues is the need for field work to describe and analyze the urban informal economy.

The informal economy is not often recognized as a major issue for social science. But some argue (e.g. de Soto 1990; Portes et al. 1989) that in the information era informal economic activity is not just a temporary phenomenon (e.g. Valentine 1978), but plays a key structural role in Third World countries and First World cities (Sassen 1991). Most estimates of the US informal or "underground" economy run in the billions (e.g. Pozo 1996), yet those figures lack precision (Feige 1996; Franks 1994; Reuter 1996). Informal labor markets, drug markets, and other underground goods and services have not been adequately described, thus making it difficult for scientists to make sense of existing official data. We have little if no data on the informal economic activities of women whose welfare benefits have ended (Eden and Lein 1997).

Further, vast differences in the informal economy exist between cities, and between neighborhoods within cities, but the bases of those differences are not well understood (e.g. Stepick 1989). Informal drug markets apparently play a major role in homicide rates (Blumstein and Rosenfeld 1999; Goldstein 1985; Goldstein et al. 1997) but we don't understand why declines occur in some cities, but not others (Hagedorn and Goldstein 1999). The new economy has organized informal economic activity in a functional way in areas adjacent to development (Sassen 1991; 2000), but allowed more violent, survival-based underground markets to thrive in "socially excluded" areas (Castells 1998; Hagedorn 1998b; Venkatesh 1996; 2000).

This uneven development of the new economy, sometimes called the "digital divide," may have vast implications for social theory and public policy in the 21st century. But without good field work, these crucial issues can not be well understood.

Next, we present the three central components of a national infrastructure for field research.

I. A Virtual and Physical Concentration of Field Researchers

The first essential element of an infrastructure is personnel. The center needs to be the physical home to a cadre of experienced field researchers. It also needs to be the hub for a network of many of the top field researchers in the country. But more importantly, it needs to have both a standard and a web-based strategy to train and mentor young social scientists and develop new, web-based pedagogical techniques.

The program of the newly founded Clark Center at UIC includes the promotion of field research in Chicago. The working core of the Clark Center includes a cadre of respected field researchers and social scientists from several disciplines, including Paul Goldstein, Darnell Hawkins, Lisa Sanchez, Beth Richie, David Perry, Bill Ayers, Ralph Cintron and John Hagedorn (representing Public Health, Sociology, Political Science, Anthropology, English, Women's Studies, African American Studies, Urban Studies, Education and Social Welfare). A series of field work seminars have already begun, aimed at promoting field work and training graduate students and junior faculty.

At the Clark Center founding, April 26, 2000, Joan W. Moore was the keynote speaker and she focused on lessons from three decades of her field work and collaborative methodology. We've reprinted her address and other materials from the event on our web page (see <http://www.uic.edu/orgs/kbc/FieldR.html>). On October 16 and 17, 2000, a two day seminar on field work by Elijah Anderson, one of the nation's preeminent ethnographers, will continue our training and promotion of field work. Anderson will be joined at his public lecture by noted ethnographer Mitchell Duneier as a respondent. Anderson will also facilitate four smaller seminars on specific topics. In November, Jim Short will speak on his gang research in the 1960s in Chicago, as part of the Clark Center's Chicago Gang History Project (<http://www.uic.edu/orgs/kbc/ChiHistory.html>). Short, Duneier, and Moore, Sudhir Venkatesh, Diego Vigil, Eloise Dunlap, Ric Curtis, Laura Fishman, Jeff Fagan, and many others have agreed to do seminars and participate in the promotion of field research through the Clark Center.

This proposal adds to our existing program by building a national scaffolding for the promotion of field research. Chicago, the historic home of field research, is the natural physical home for such a center. We intend to run a steady flow of different kinds of seminars with prominent field researchers. *But we do not intend this to be just some well-funded speaker series.* Rather, we propose to record these seminars in various ways in order to build a digital archive of materials on qualitative research and establish the Clark Center as an intellectual center in the field.

Our plan is to first document the seminars by transcribing text, video-taping key sessions, and/or editing some of the video of seminars for posting key portions on the web as streaming video. Topics will be picked for importance of debates in the disciplines, but also to fill pedagogical needs. The existence of a variety of audio and video tapes of field work seminars in a variety of web-based formats and posting the text of key presentations will be an invaluable aid to the teaching of field methods. Video-conferencing software will allow us to run some seminars in several cities simultaneously.

Second, we intend to use a small pot of money to compensate senior field researchers to work in an on-going way with graduate students and junior faculty. A suitable mentor for field research, particularly with minority students, has not always been available at a specific university. But through the web and video-conferencing we can link mentors with students and break through some of the isolation felt by minority and/or female students. We can also add experienced field researchers as mentors and thesis committee members through regular web-based contact and video-conferencing or streaming video. We intend to publicize the availability of mentors through professional associations and at professional meetings. The availability of a pool of field researchers to aid graduate students in itself is bound to promote field research theses and upgrade their quality.

Third, we intend to use the seminars to debate topics of methodological and theoretical interest in the field. For example, at UIC a concentration of postmodernists around Stanley Fish, Dean of the College of Letters and Science, will add to the attractiveness of UIC's Clark Center as a place for academic debate on postmodern critiques.

The capacity of the web to make raw data available can be a great boon to researchers, but raises new questions of confidentiality. For example, posting raw data on research cites on the web needs to be carefully checked for breaches of confidentiality. Publishing extended segments of even edited transcripts may aid other researchers, but could lead to the inadvertent identification of respondents. We intend to organize and archive forums on confidentiality and the web as part of our seminar series. Lisa Sanchez will be in charge of setting up the field research seminars.

It could be that the field research seminars will evolve into the qualitative analog of the University of Michigan's quantitative, summer Institute for Social Research (ISR). Whether the center evolves as a physical summer institute or becomes more web-based—or both—is not yet clear.

Like many other elements of this proposal, we: 1. Have already begun work on what we propose here; 2. Will be able to expand and improve our existing efforts through the NSF funds; and 3. Expect to experiment with different methods, techniques, and concepts as we go.

II. A Digital Library of Field Research

The second element of an infrastructure is the construction of a "digital library" as a central archive and organizer of the process of field research. As with the other components in this proposal, we have already begun work on building a modest version of what we propose. We candidly admit we don't really know yet what a "digital library of field research" will finally look like. But we have the right people with the right methodological and technological skills, and the right physical location (Chicago). Most importantly, we know the three central questions which need to be solved:

1. How can qualitative datasets be archived and made useful and accesible on the web?

To answer this question we need to a. compile a sufficient quantity of important qualitative data sets; and b. create an electronic interface through which researchers can use and compare these data sets.

a. **Compiling Qualitative Data Sets.** The University of Illinois-Chicago currently has the rights to the entire "Chicago School" textual and photographic archives. These are the founding texts of U.S. field research. The PI for this proposal is co-PI on a National Endowment for the Humanities proposal to further explore these vast data sets through a history of Hull House, which is physically located on UIC's campus. The great Chicago School works, like Zorbaugh's *The Gold Coast and the Slum (1929)*, have been digitized and are awaiting use by hyper-text minded scholars. More importantly, unpublished manuscripts are being scanned and digitized, including interview transcripts and other contextual material. This is an unparalleled opportunity for social science.

The seminars run by the Clark Center described above will result in a steady stream of the top field researchers in the country coming through UIC. One topic of conversation will be how to mine the field notes, transcripts, and contextual material of current research. We expect these discussions to lead to the inclusion in the digital archive of major contemporary data sets. We note, however, that confidentiality is a serious issue. A researcher will make a data set available only if it is either in the public domain already, or if s/he sees advantages in how the data set can be analyzed. This leads us to how qualitative data sets can be more easily analyzed.

b. **Creating an Electronic Interface.** There are two ways to make qualitative data sets comparable and available. One way is to license off-the-shelf software, such as FolioViews™ or Nudist™, load transcripts and pictures into an "info-base" (Folioview's term) and make the data sets available on the web for downloading and/or on-line analysis. This would mean taking existing textual, photographic, audio, and video data and converting it into the commercial format. Then remote clients could read a data base, or

more importantly, aggregate them for comparative analysis. Comparing Zorbaugh's and Thrasher's texts, for example, might yield new insights impossible to conceive using traditional techniques.

The second way to make qualitative data sets comparable and available is to design software which uses natural language queries, rather than the hypertext boolean searches used by commercial software. This solution has the advantage of making searches more powerful by formulating a "natural language" question to query a data base.

For example, In Folioviews, to look for instances of drug dealing by African American gangs, one might search an info-base of transcript text for all mentions of "Gangster Disciple" or "Vicelord" and "drugs," and then look further for cases where drugs are sold and not just used, and then further where the respondent sold them, not bought them. A natural language query would simply command: "Display all mentions by respondents from Chicago African American gangs who sell illegal drugs of any type." The "natural language query" would result in more specific information, and present textual material in a more useable context.

But natural language approaches are problematic since after the conversion of the data set to a specialized text format, the "natural language" concepts need to be written. The different terms which might describe "drug dealer" or "drug deals" and which gangs are African American, would need to be entered into the program. While this is time-consuming, it may be of major advantage to remote field researchers who can discover new ideas in old data sets through the skillful formulation of natural language concepts and subsequent queries.

John Shuler of the UIC Library will supervise consultants who will weigh a commercial solution compared to designing our own software. Negotiations with software companies for the licensing of their products may result in technical cooperation and additional resources.

Like so much in this proposal, we don't know the best way to organize qualitative data sets. We intend to utilize consultants and advice from software companies, as well as solicit input from field researchers through the seminars, our web page, and conferences. We expect to solve the problem of format in the first two years and spend the next three years setting up a national archive of qualitative data bases, starting with the Chicago School documents.

2. What software programs can best integrate qualitative and quantitative data?

We are going to address this rather broad question in a narrow way. Rather than look at all kinds of quantitative and qualitative data sets and come up with a general so-

lution which is perhaps not quite suitable for anyone, we propose to focus on data which can be located in space, and thus utilize the advanced practice of GIS software.

The most exciting developments in software for spatial data analysis lie in data visualization and the use of powerful GIS software like ArcView™ and ArcInfo™. GIS techniques have been routinely used to organize survey and demographic data with visual data from locales. We intend to expand its use by adapting GIS software to the merger of qualitative and quantitative analysis. This may be a major part of the future for field research.

UIC is the ideal venue for this effort due to the existence of the Data Visualization Center (<http://www.uic.edu/cuppa/udv/>), a national leader in creating innovative applications for urban planning and policy making. The Center integrates multiple media, including Virtual Reality, GIS, and the world wide web to simulate future alterations and scenarios of cities and neighborhoods.

By superimposing layers of data on maps, neighborhoods in different cities can be easily viewed and compared with one another. By using photos and other graphical representations of key neighborhood locations and displaying them on the web, researchers, students, and stakeholders can "see" the neighborhoods being studied (<http://www.uic.edu/~kheir>). The use of online GIS systems, specifically ESRI's Internet Map Server, allows any participant access to a large collection of demographic and spatial data about a locale. In a recent project ESRI's ArcIMS were used to present real-time visualization of geo-referenced data in close relation to narratives that include published reports and project descriptions (<http://e036.cuppa.uic.edu/ims/north-lawndale/index.html>).

This technique has revolutionary implications for qualitative analysis, which are just arriving on the academic agenda. For example, if researchers would want to compare neighborhoods adjacent to economic development to more socially isolated neighborhoods, as we intend to do in this proposal (see part III below), data visualization can integrate quantitative and qualitative data to show visually and statistically how the neighborhoods compare.

GIS systems can load census and other quantitative data on maps, and displayed in various visual manners, making data more understandable. Police data can be loaded to reveal locations of drug sales and "hot spots" of criminal activity. Demographic variables, like median income, property value, percent homeowner, ethnicity, and other standard variables can be used for comparisons.

Qualitative data can also be loaded on GIS systems, and this is where it gets more interesting. Photographs of neighborhoods can be loaded to facilitate direct comparisons. In areas where photographs from the past can be retrieved, an historical photographic exhibit can parallel longitudinal demographic data. Further, links to written texts, and audio tapes about neighborhood at various times can be added to the photographs, yielding a

five dimensional description of an area: textual, visual, audio, digital, and statistical. All this, of course, can be placed on the web.

More directly, field work in a neighborhood can make use of the mapping of demographic and other spatial variables. Official data, such as locations of drug selling can be compared with information from direct observation and interviews with gang members, and the results compared by digital maps. Typing drug selling sites, and comparing such qualitative data to official quantitative data, such as location of arrests for violent crime, can contribute to understanding the adequacy (or inadequacy) of official crime reports.

In brief, we propose to begin to address the integration of quantitative and qualitative data through GIS technology. As with other aspects of this proposal, we do not have all the answers. The UIC Data Visualization Center, History Department, and the Clark Center have begun to address these issues in a preliminary manner. NSF support would vastly streamline our efforts and bring them more quickly to the attention of scholars nationally.

3. How can we use the web to increase interaction between the university and communities?

The final component of the "digital library" is its capacity to increase interaction with various publics and stakeholders, promoting social responsibility in research. There are two ways this proposal seeks to address these concerns: transforming the historic category of "personal documents" and organizing web-based feed-back to neighborhoods.

"Personal documents" is the term first formulated by Robert Park and his Chicago School colleagues to describe documents written in the voice of the research "subject." Clifford Shaw's 1930: *The Jackroller: A Delinquent Boy's Own Story* is perhaps the seminal example (and, now available to UIC for digitizing). In its original conception, the sociologist wrote down the words of the "subject" and put them down in a case study format, often with a "sociological" introduction, explaining the voice of the book. The world wide web dramatically changes the concept of personal documents, making them more potent and vastly reducing the voice of the sociologist and amplifying the voice of those being studied.

Some respondents want their unabridged words to be made public. In the written era, some research subjects had their "stories" published—but not many, heavily edited, and placed in a proper "sociological" context. The web allows for entire interviews to be transcribed and placed on the web, or respondents videotaped and their actual words archived. This has substantial confidentiality concerns, which should not be underestimated. However, confidentiality should not be used to silence the voices of those who are

not often heard in their own voice — such as gang members, the homeless, or drug dealers.

The solution may lay in two levels of data collection, one confidential, and the other made explicitly for publication, with final web-publication decision in the hands of the respondent. One example of on-going work in this area is UIC's City Design Center which has been working on a project called Chicago Imagebase that employs some of these techniques (<http://www.uic.edu/depts/ahaa/imagebase/>). The web site allows users to access, index, store, retrieve, compare, and analyze images, maps, data, literature and other geographically-based materials.

As studies are completed, this process allows for video, audio, and textual comment by those being studied before the work goes to print. Such practices would have had a substantial effect on books like Vidich and Bensman's *Small Town in Mass Society*, which caused an uproar after its release. *The web has the potential for developing a new norm for social research, of providing for comment and different voices on the research findings and a digital space where respondents can be heard and seen.*

Second, the web allows for interaction between communities and the academy. For example, the bi-directional capacity of the web permitted urban planning surveys of residents taken on line, and results compiled and fed-back to the neighborhood (Al-Kodmany 2000). In this project JavaScript was used to create the interactive web interface. A Web Server/Data Servlet and Oracle database were used to collect and sort out data, then create immediate feedback in the form of composite maps. Later, these maps were integrated into ArcView GIS for spatial analysis.

The web also can be used in various phases of research, as we have suggested above. Most importantly, the web's use in a neighborhood requires a certain level of being "wired," which is one of the greatest deficiencies in poor neighborhoods today. However, "wiring" of libraries and schools is taking place everywhere, and one task of research can be to get residents who otherwise might not use the new technology to understand its value and make use of it. It is anticipated that in study neighborhoods, substantial training in information technology will be made available to area residents and to increase investment in "unwired" neighborhoods.

In sum, we envision the digital library as a virtual archive where important qualitative data sets can be accessed, analyzed, and compared, linked to quantitative data, and used to give voice to those who are too often voiceless.

III. The Four-City Study: A Template for Field Research

The final element in the field research infrastructure is a pilot research project between cities, organized as a template for how to do comparative field research in the digital era. The four-city study will address substantial questions of the impact of the new

economy on poor communities that may be of interest in themselves. However, the underlying purpose of the pilot studies is to experiment with web-based knowledge management and organization of multiple research sites by use of the world wide web. The principal question is: *How can the digital library be used to improve the research process?*

After a year of discussion, four cities will be selected to carry out pilot field research studies on the impact of the new economy on different kinds of neighborhoods. It is expected that Chicago (UIC), Milwaukee (UWM), New York (Columbia or John Jay), and Boston (Harvard) will be the research sites, based on willingness of prominent field researchers and theoretical characteristics of the research sites.

Theoretical Basis of the Studies

The life and death of cities is an on-going historic process (Hall 1998; Jacobs 1961). The decline of the industrial world has left cities like Detroit struggling for survival (Sugrue 1996), while New York, Los Angeles, and, to a lesser extent, Chicago, are experiencing a rebirth (Abu-Lughod 1999). The ostensible signs of the replacement of the factory by the computer network (Castells 1989; 1996) however, conceals a significant expansion in various informal means of living, which are less open to quantitative description (Sassen-koob 1989).

Two polar types of informal urban economic systems apparently have formed (Sassen 2000; Portes et al 1989) which may exercise a major effect on social indicators, such as homicide and infant mortality rates (Hagedorn and Goldstein 1999). While the theory is complex, the hypothesis is that in areas mainly adjacent to the new economy, unskilled workers find construction and service jobs as well as accessible links to training in high tech skills. Most jobs created by the information economy, Sassen reminds us, are not high skill, and many are "off-the-books." In these "trickle down" areas adjacent to new wealth, service and construction jobs are created mainly in response to the needs of a booming formal economy. Drug sellers find a more well to do customer base and social control in these areas is tight, responding to the needs and fears of a professional clientele.

However, things are different in socially isolated areas more distant from the new economic developments. Here, drugs and the production of illicit goods and services are less related to the needs of the formal economy, and more central to the survival needs of the poor. Drug sales are a main employer of young men in both African American and some Hispanic communities (Hagedorn 1998a; 1998c), who see few opportunities in the formal economy. Many gangs have shed their alienated adolescent clothing, and have become economic units, dominating the drug trade in some neighborhoods (Fagan 1996; Venkatesh 1996; Schneider 1999). Violence is a necessary tool to enforce contracts

(Black 1983; Fagan and Chin 1990), and social controls from authorities are more repressive and at the same time less responsive (Kennedy 1997).

To understand the variations in the shape of the informal economy and how it may effect the behavior of young males calls for comparative field work in different types of cities and in different types of neighborhoods within cities. In order to provide baseline information and to see whether this untested and novel hypothesis has merit, a pilot study in four cities will be undertaken. The participating universities must demonstrate both prior access to suitable neighborhood research sites, as well as willingness to experiment with a web-based methodology.

A Digital Template

The digital library will be used as the organizer of the entire research process. One historic problem of field studies has been their limited comparability. The four-city study aims to overcome that limitation through the digital library, videoconferencing capacity, and the Internet2 Consortium.

To begin with, as we have done with this proposal from its inception (<http://www.uic.edu/orgs/kbc>), the project description will be posted on the web and advertised through field research networks, NSF announcements, and professional meetings. When the research teams in the four cities are selected, consultants will link the four sites by a H323 videoconferencing system to allow staff meetings to take place simultaneously across the sites. Beginning field work can be shared not only by streaming video meetings, but by the entry of baseline data on the study neighborhoods in GIS software, as we described above. Thus each neighborhood can be "seen" by researchers in other research sites without the expense of regular site visits.

The entry of photographs and various kinds of qualitative data will take place in each city and shared. As the issue of developing a common electronic interface is solved, text and other data can be shared between sites, and researchers in each city can compare their field notes and data to those of researchers in other cities through protected web sites. The possibility exists to run a joint field methods course in two or more of the cities, thus teaching the comparative method while doing it.

Public access to preliminary information and feed-back from residents in the study communities themselves will be essential components of this project. It is anticipated that public libraries and schools will become partners in organizing feed-back and input into the research process. Regular staff meetings between sites will be devoted to the practical problems of the research, plus the technical problems of taking full advantage of the web and the digital library.

The final reports of each pilot study and the entire project will of course be posted on the web. The digital library, however, will archive not only the reports, but contextual material, like photographs, interview transcripts, and field notes, ever mindful of confi-

dentiality. GIS software will be used to merge quantitative and qualitative data, as we have described above.

This four city study is an experiment in how to use the web to assist field work, and how to go beyond the case study approach. Like the rest of the proposal, we do not profess to have all the answers, but we intend to solve clearly defined problems as we go. We believe we have the scientific and technical personnel to accomplish our objectives.

Conclusion

This project intends to create a virtual and physical infrastructure for field research. The infrastructure includes participation of key social scientists at the University of Illinois-Chicago and around the country in various efforts to train and mentor graduate students and junior faculty in standard and web-based techniques. The Clark Center at UIC will become an intellectual center for debating the modernization of field research.

A "Digital Library of Field Research" will create an electronic interface to analyze qualitative documents, merge quantitative and qualitative data, and increase interaction between communities and the academy. A four-city study will be organized as a template for how to conduct comparative field research and fully utilize web technology.

We have adopted a modest stance in writing this proposal, and the reader may think this is a mistake. However, we believe our modesty is appropriate to the august task of transforming the practice and training of field research and establishing an infrastructure for it in the 21st century. Our notions of how organizations learn is drawn from the business literature (e.g. Senge 1990) and we are unapologetic about what we don't know. What we do have are Kanter's (1995) requirements for a successful, "world class" organization: in her phrase, we aspire to be "destroyers of walls and builders of bridges."

Most importantly, we have:

- key social scientists, both on-site and in already existing networks, to train and mentor others in field research;
- the technical capacity through UIC's Library and History Department to create web-based archiving systems and an electronic interface for qualitative data sets;
- an historic data set in the Chicago School documents;
- a GIS-based method already in use at UIC's Data Visualization Center which can merge quantitative and qualitative data sets;
- an exciting research question on the digital divide;
- nationally known field researchers from many disciplines who are willing to work in a web-based collaboratory to establish a template for field research in the information era; and

- knowledge of the right questions, if not all the right answers.

Best of all, the Kenneth B. Clark Center has already begun work on all of the initiatives cited in this proposal. The National Science Foundation is being asked to help us do our work in a properly funded atmosphere and in a more open, national environment.

This proposal is dedicated to the memory of

William Foote Whyte,

June 27, 1914 - July 16, 2000.