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Staff Paper

A WHITE PAPER ON THE RELEVANCE OF SOCIAL
CAPITAL FOR THE COLLEGE OF AGRICULTURE
AND NATURAL RESOURCES (CANR)

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Staff Paper No. 99-59

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ABSTRACT
(27 pages)

Social capital is about relationships that are often based on earned or inherited kernels of commonality. Social capital raises the ethical question of when relationships should be allowed to influence outcomes. The essential theory underlying the social capital paradigm is that relationships of sympathy or social capital influence almost every interpersonal transaction. Since interpersonal transactions occur in many settings, the study of social capital is multi-disciplinary and interested in such diverse topics as charitable giving, leadership development, educational achievements, migration patterns, formation of cooperatives, how people care for the environment, diffusion of technology, advertising, economic development, family integrity, flow of legal, recreational, and health services, management of organizations, community development, animal health, passage of legislation, and the creation of civil society. Social capital is relevant to the College of Agriculture and Natural Resources (CANR) because it represents an important resource that must be studied and managed to achieve CANR's mission.

Key Words: social capital, relationships, College of Agriculture and Natural Resources (CANR), kernels of commonality, ethical questions, attachment values, institutions

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Executive Summary

Social capital is about relationships. A relationship is an outcome of shared experiences. When shared experiences produce relationships of sympathy, the person or object of another person or group's sympathy has social capital. A person or group having social capital has an important resource that may provide them preferential treatment, access to information, and support from the social capital provider. Social capital providers often alter the flows of goods and services to benefit owners of social capital because relationships of sympathy internalize the consequences of their choices.

Social capital is relevant to the College of Agriculture and Natural Resources (CANR) because:

- ◆ CANR depends on its social capital with alumni, administrators, legislators, and clients for its support expressed through appropriations, donations, and recruitment of students and faculty. Because CANR is dependent on its social capital, it needs to understand how to maintain, invest, and use this important resource.
- ◆ CANR depends on social capital within and between departments for cooperative efforts, subordination of personalized agendas for the public good, sharing of information and technology, and willingness to work on committees and other assignments required to maintain the organization.

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- ◆ CANR depends on social capital in the classroom to facilitate learning, since learning is best achieved in an environment of caring and support. In addition, the classroom can be an environment in which social capital is created and attitudes formed that facilitate social capital creation in other settings.
- ◆ In some cases, social capital needs to be incorporated into the curriculum of CANR departments because their subject matter includes social capital.
- ◆ In other departments, social capital needs to be studied to understand how the research agenda is determined and how scientific approaches are approved.
- ◆ Social capital creates attachment value for objects including natural resources that may be unrelated to their economic exchange value. Attachment values have an important influence on natural resource policies. Managing our natural resources requires that we understand social capital and the creation of attachment values.
- ◆ CANR organizations and institutions (rules and values that order human relationships) reflect the kinds and distribution of social capital that created them. Changing CANR organizations and institutions often requires changes in social capital that are sometimes achieved by networking. Understanding the connection between social capital and the creation and management of organizations and institutions is essential for CANR administrators.
- ◆ Dissemination of outreach material depends on social capital to connect communication channels and share information between the research and outreach community and the networks of clients. Social capital between the research and outreach community communicates client problems to researchers and helps shape research results into useful outreach products. Social capital between outreach staff and clients creates trust and acceptance of outreach products. Finally, social capital

among networks of clients gives voice to their concerns and diffuses useful research results within the network.

- ◆ Finally, leadership is all about building and using social capital. Leadership, gaining the followership of others, can be exercised using negative rewards (the stick approach), positive rewards (the carrot approach), or through the use of social capital (the hug approach). The stick form of leadership uses fear created by threatening adverse consequences. The carrot form of leadership appeals to selfish interests by offering rewards for conformity. The hug form of leadership acquires the goodwill or social capital of those being led that motivates actions that benefit others as well as self. While all three leadership methods may sometimes be required, leadership based on social capital is to be desired because stick leadership often breeds retaliation and sabotage while carrot leadership often breeds selfish behavior that stifles cooperation. In contrast to stick and carrot leadership, leadership that relies on social capital can motivate others to pursue the good of the community.

The essential theory underlying the social capital paradigm is that relationships of sympathy or social capital influence almost every interpersonal transaction. Thus, the study of social capital is multi-disciplinary and interested in such diverse topics as educational achievements, migration patterns, formation of cooperatives, how people care for the environment, diffusion of technology, advertising, economic development, family integrity, flow of legal, recreational, and health services, management of organizations, community development, animal health, passage of legislation, and the creation of civil society. Because social capital has so many applications in so many diverse academic disciplines, it facilitates communication and cooperation among scientists from a variety of backgrounds.

The social capital paradigm raises an important ethical question: when should relationships be allowed to influence outcomes? In some cases, we make special efforts to ensure that relationships don't matter. We symbolically put a blindfold on the symbol of our court, Lady Justice. We conduct double blind reviews of articles considered for journal publication. We pass nepotism laws to discourage family relationships from influencing hiring decisions. University guidelines limit relationships between instructors and their students to help ensure that grades are based on academic performance. Anti-discrimination laws prohibit unfavorable treatment of groups based on their age, ethnicity, religious background, or gender, traits that often produce special relationships.

On the other hand, we encourage the use of relationships to alter outcomes in other settings. Our hiring decisions are often based on personal letters of recommendation. Teachers who develop social capital with their students appear to achieve better results than those who maintain arms' length relationships. Faculty and staff cooperate more and are more satisfied with their work assignments when social capital exists. Support for public goods such as education, libraries, and roads often depends on social capital among community members. Personal relationships can often be used to improve legislative support and alumni's donations. And finally, our emotional health and positive outlook require social capital.

Our view is that social capital is a resource that can produce positive and negative outcomes. Our challenge is to determine how to invest and use it in beneficial ways. Like other resources, we need to carefully examine its potential and how best to manage it.

Social capital is a valuable resource because it is essential for satisfying human needs. Social capital alters the terms of trade and level of flows of economic goods and services. But it also provides validation, experiences of caring, and facilitates the flow of information. The study of social capital is often complicated because its several service types are often combined in one service flow.

Thus, a particular transaction may create flows of economic goods and services, validation signals, expressions of caring, and privileged information.

Social capital is not a homogeneous resource. Social capital begins with shared traits that are either earned or inherited. We call these kernels of commonality. Inherited traits include one's gender, age, ethnic background, nationality, values acquired from parents, and other resources inherited as a result of the conditions of one's birth. Earned kernels include one's place of residence, membership in organizations, friends, and education, to name a few. Some earned kernels take on the permanence of inherited social capital because they are irreversible—once you acquire it, you always have it. Examples of irreversible earned kernels include war service, some diseases such as AIDS, and one's alma mater. Reversible kernels include one's current residence, one's work environment, and one's club membership. Another special class of earned kernels is the class created out of covenants that bind people together with a formal commitment. Covenant kernels include marriage contracts, religious ceremonies that create obligations, and initiation rites of orders, fraternities, and sororities.

One could easily describe examples of relationships that depend on both earned and inherited kernels. Some kernels may combine both earned and inherited traits. In addition, most relationships depend on both earned and inherited kernels.

Relationships built on inherited kernels tend to create stronger and more permanent bonds than those based on fewer permanent earned kernels because inherited kernels cannot be destroyed or easily changed. As a result, social capital based on inherited kernels tends to be used primarily for experiences of caring and insurance (you can always count on your family during hard times). On the other hand, social capital based on earned kernels leads to shared experiences, exchanges, and cooperation among individuals with greater diversity in their comparative advantages. As a result,

networks of persons with earned kernels that trade and cooperate in business are more likely to succeed than those with relationships based on inherited kernels. Earned social capital is more valuable than inherited social capital when obtaining job information, completing economic activity, and organizing resources to complete an activity requiring more resources than are available in one's immediate family. Relationships based on earned kernels are also the primary source of validation.

The distribution of social capital between earned and inherited social capital has much to do with the formation of organizations and institutions. Institutions are rules, regulations, norms, and values useful in regulating and ordering relationships. Organizations are groups of persons with well-defined membership requirements governed by institutions. Organizations and institutions reflect the social capital of those creating them. In well-developed economies, specific transactions do not depend on buyers and sellers having personalized social capital with each other. One can depend on institutional rules to minimize transaction costs and provide the necessary guarantees for action without requiring that all economic agents have social capital with each other. In less developed countries, public institutions are not well developed and almost all transactions depend on personalized social capital. As a result, significant energy is expended to develop and maintain the personalized social capital required to complete one's business. Important development work is now focused on creating the social capital necessary to sustain credible institutions.

The implications of social capital for CANR are significant. The College depends on its social capital that resides with students, faculty, staff, alumni, legislators, and university administrators. The productivity of departments also depends on its earned social capital. Within the college, unity of purpose and cooperation requires earned kernels in the form of shared vision statements, agreed on goals, opportunities for synergistic activities, validation, and accurate and timely information. In some departments, the study of social capital should be integrated directly into the curriculum. In

other departments, the influence of social capital on the research agenda should be examined. Finally, social capital should be used to facilitate learning. For example, in the Bailey Scholars program, social capital is created between faculty members and students so that the classroom experience delivers more than arms' length information.

In effect, social capital is the water in which we swim. Some say that fish were the last creatures to discover water. Perhaps there is an analogy to humans. We may often be unaware of the sea of social capital in which we swim. Nevertheless, much of what we do and the quality of our lives depends on this resource and how it is managed.

Introduction

On April 20-22, 1998, social scientists and applied problem solvers from around the world and across disciplines gathered to define, discuss measures, and suggest applications of social capital. The event bringing problem solvers and scientists together was *Social Capital: An International Conference Bridging Disciplines, Policies, and Communities* sponsored by the Social Capital Interest Group (SCIG) at Michigan State University. At the beginning of the conference, presenters were asked to respond to 12 alternative definitions of social capital proposed by social capital scholars. No one definition of social capital was generally supported.

Perhaps one reason the conference participants could not generally agree on a definition of social capital was that the definitions did not limit themselves to answering the question: what is social capital? Past definitions of social capital have included answers to questions such as: where does social capital reside? How can social capital be used? And how can social capital be changed? Once the answers to these questions were separated from the many popular definitions of social capital, what remained defined social capital as service potential derived from social relations.

Service potential is an essential quality of most forms of capital. When reference is made to a heating plant or car, the attention is usually directed to the plant's heating potential or the car's potential to provide transportation services. When attention is directed to social capital, it appears that attention is being directed to its potential to provide preferential treatment. However, as important as service potential is to capital, capital is not generally defined as service potential. Rather, capital is defined as the good that is capable of producing other goods and services. Consider a definition of capital generally accepted by economists. Capital is: “. . . a commodity itself used in the production of other goods and services. It is a human-made input, such as plants or equipment, created to permit increased production in the future.” Capital in this sense represents an accumulation of foregone consumption, an amount saved for later use. A similar definition of capital defines it as: “. . . a resource used by a firm in producing goods or services.”

In the case of social capital, the good that produces other goods is a relationship of sympathy. A sympathetic relationship exists when whatever affects one person similarly affects the other. Then, if the residence and object of social capital are included, the definition of social capital reads:

Social capital is a person's or group's sympathy or sense of obligation toward another person or group that may produce a potential benefit, advantage, and preferential treatment for others beyond that which might be expected in an exchange relationship.

Relationships Matter

Social capital is important because it can alter flows of goods and services. Suppose person i is considering an action that will affect the well-being of person j and assume that j is the object of i 's social capital. Since an improvement in j 's well-being also benefits i vicariously, j can expect i to extend favors, preferential terms of trade, and in other ways look out for j 's interest. This preferential treatment alters the flows of goods and services as long as the favors until providing preferential treatment imposes a cost on i greater than the vicarious benefits earned as j 's well-being improves.

The sympathetic relationship that provides j with potential and actual benefits is called here j 's social capital.

Social capital has caused quite a stir because in so many areas of science, outreach, and the provision of services, we want to believe that relationships don't matter. Economists, for example, often describe market activities and other exchanges as though relationships were arms' length and an impersonal market determines terms and levels of trade independent of who is buying or selling. Bankers want the public to believe that loan approvals depend on objective financial criteria and not on the relationships between the lender and the borrower. Medical care providers want to project an image of services that flow independent of relationships between medical personnel and patients. Outreach clients are assumed to be selected by an arm's length needs criteria. Employers, especially government employers, want the public to believe that employment offers depend solely on the applicant's job skills.

In some instances, we take actions to prevent the influence of relationships. The symbol of our court, Lady Justice, wears a blindfold so her decisions will be determined by the law and not by her relationships with persons before the bar. Most journals conduct blind reviews so that the reviewers will not have their decision influenced by the identity of the author(s). Nepotism laws are designed to ensure that employment offers are based on merit and not relationships. Universities impose rules regarding relationships between instructors and students so that grades will reflect mastery of the subject. Some laws prohibit discrimination in the provision of housing and other services based on ethnicity, age, and gender that create special kinds of relationships.

On the other hand, we often encourage relationships because of desirable outcomes. We prefer medical practitioners with warm and caring bedside manners. Teachers who develop relationships of openness and sympathy with their students appear to achieve better results than those who maintain arms' length relationships. The expression: "I don't care how much you know unless

I know you care” describes the importance of social capital in the learning experience. Coaches often attribute their success to good relationships among team members. Lack of social capital at the household level is highly correlated with children who do poorly in almost every category of social activity. They have lower high school graduation rates, are more likely to be involved in crime, are less likely to be in school, and suffer higher infant mortality rates. Social capital in the work place reduces enforcement costs and improves worker performance. Community investment programs often depend on social capital among community members. And finally, psychologists have long known that a person’s emotional health and positive outlook require social capital.

So when it comes to relationships, we tend to be a little schizophrenic. Sometimes we view them as harmful and other times we encourage them believing they are helpful. Most often our attitude toward relationships is that they are good when they include us and harmful when we are excluded. Thus, we often disparage groups as “good old boys (girls) clubs” because they convey privileges based on relationships that are not available to others. Still, the pervasive influence of social capital requires that we face an important ethical question: when should relationships be allowed to influence outcomes? Recognizing that relationships, like other resources, can be used for positive or negative outcomes is one of the first steps toward developing a proper approach toward its study and application.

Collecting Evidence That Relationships Matter

During the early years of our social capital research, we were frequently challenged to demonstrate that relationships altered economic outcomes. As a result, we provided evidence that social capital altered tips, the probability of loan approval, prices of used cars, and the likelihood of customer retention. More recently, we provided evidence that social capital altered terms of trade in the agricultural land markets. We have evidence that land sales favor friends and family members.

They often hear about opportunity to purchase land that is not known to others. Furthermore, they often purchase land from each other at a discount and at more favorable loan terms than those who are not family and friends. As a result, from between 60 and 70 percent of land sales are between family and friends. About 89 percent of the farmland leases in Michigan are between family and friends. On the other hand, less than 2 percent of land sales occur among persons whose relationships are unfriendly.

Anecdotal information suggests other applications of social capital. Environmental concerns appear to have a social capital face. Located just outside a small Southwestern town, the beef operation apparently did not emit unpleasant odors until the operation was sold to strangers. Relationships also find their way into medicine. We assume that malpractice medical suits are related to quality of medical services. However, many malpractice suits appear to be the result of a poor relationship between the patient and the doctor. The demand for food, we assume, depends on qualitative factors such as flavor, cleanliness, odor, and other traits. The reality is that the demand for food depends on one's relationships. Food prepared by friends tastes better. Furthermore, imperfections accepted in food prepared by friends would be unacceptable if prepared and served in a restaurant.

Now we are collecting evidence that social capital alters the level, costs, and direction of whatever flows among individuals. Regardless of what is being exchanged, education services, investments in the environment, land use policies, information, health care services, technology, economic goods and services, entertainment services, research results, or employment opportunities all provide evidence that social capital changes the level and terms of the flows.

The Creation of Social Capital

If social capital is a relationship of sympathy and sense of obligation, where does the creation of social capital begin? Relationships are the outcome of interactions among persons. Interactions are more likely to lead to relationships of sympathy if the persons interacting have something in common, a kernel of commonality. Kernels of commonality can contribute to social capital because they often provide opportunities to interact without friction and conflict. A discussion of factors influencing the importance of kernels is included in the Appendix to this paper.

Kernels of commonality that improve the likelihood that interactions may lead to relationships of sympathy may be inherited or earned. Inherited kernels include traits such as one's gender, age, genealogy, native language, nationality, and values of parents. Also inherited is one's physical appearance that reflects one's age, gender, ethnic background, and general physical well-being.

Earned kernels that might be acquired and used to create kernels of commonality include one's alma mater, friends, religious or political views, club membership, support for charities, tastes in music and art, work status, hobbies, military experience, enthusiasm for a sports team such as the Michigan State Spartan football team, educational background, and values on a range of topics including the importance of a flat tax, prayer in public schools, abortion, homosexuality, migration, and capital punishment, to name a few.

Some earned kernels are irreversible meaning that once they are acquired, they are important for life. Irreversible kernels may include an incurable disease, distinguishing service that grants one lifetime membership in groups like veterans' organizations, and conviction of a serious crime. Less permanent earned kernels are those that require regular investments to maintain. For example, membership in one's department is an earned kernel only as long as one holds the position.

Compacts or covenants create a special kind of earned kernel. These often commit participants to cooperative action in the future. Examples of relationships that may be based on

covenants include married persons, business partners, religious orders, military units, and fraternities and sororities. Many compact groups rely on implicit compacts indicated by participation in the group. In some societies, covenant relationships take on many of the intense bonding relationships associated with persons whose relationship is based on inherited kernels.

Often, it is difficult to distinguish between earned kernels and inherited kernels. For example, one might consider a degree from an exclusive law school to be an earned kernel. But, if admittance to the school is influenced by past contributions to the school by one's ancestors, then one's degree may be both inherited and earned. An interview I had with a University of Nebraska undergraduate student during a department review illustrates the point. I asked her what influenced her decision to attend the University of Nebraska? She responded that she wanted to attend Kansas State University, but when she expressed this preference to her family, her mother responded sternly, "we wear red here, not purple."

Most relationships are based on more than one kernel. As the number of shared kernels increases, the strength of the relationship increases as well. Many times, two people introduced for the first time, begin their discussion by searching for kernels on which they can build a relationship. When persons of different cultures first meet, the search for kernels may require more effort than when persons share a culture, particularly if they do not share a language. The benefit of living and studying in another country and culture is that it provides one the opportunity to discover universal kernels. This experience of building social capital across cultures is likely to pay important dividends in the future as the size of our world shrinks. Thus, the CANR's study abroad program can play an important social capital role.

Because social capital has the ability to change what flows between individuals, important signals have been developed to communicate what kind of a relationship exists. Many languages reflect the strength of relationships in verb tenses and pronouns. It is also common for titles used in

greetings to express the level of social capital in the relationship. In our culture, nicknames are used mostly among close friends. Employment titles followed by the person's last name are used to reflect either an arm's length relationship or asymmetry in the relationship. Uniforms may also communicate relationships.

Differences Between Social Capital Based on Earned Versus Inherited Kernels

One difference between earned and inherited kernels is their durability and cost of maintenance. Since inherited kernels cannot be changed, social capital based on these is likely to be more permanent than earned kernels that require continual maintenance. As a result, we often find social capital based on inherited kernels used as a form of insurance--you always have your family (tribe, ethnic group) to fall back on.

Another important difference between earned and inherited kernels is exclusivity. Since one is born with inherited kernels, membership in the group defined by the kernel is exclusive. Those who are not born with the kernel can never acquire it. Societies organized around inherited kernels tend to be rigid and inflexible and display what Mancur Olsen calls sclerosis. Societies organized around earned kernels tend to be more flexible than those organized around inherited kernels because they admit change. Finally, since inherited kernels are not obtained by choice or exertion, there is likely less competition within networks defined by inherited kernels than among networks of earned kernels.

Each society may have a different distribution of social capital focused on earned, inherited, or combinations of earned and inherited kernels. Having just returned from Nicaragua, our interviews there suggested the following. The upper, middle, and lower classes all have inherited social capital based on family ties. Unfortunately, social capital based on inherited kernels is less strong among the lower class because of higher unwed birth rates, few synergistic interactions, and lack of resources to maintain family structures. The upper class appears to have more inherited social capital and also

to have acquired earned kernels based on their relative income status that connects them across families. From what we could determine, earned kernels such as membership in organizations like Rotary and Lions clubs was strictly an upper class phenomenon. This distribution of social capital we found in Nicaragua has obvious implications. First, it suggests benefits bestowed through the offices controlled by members of the upper class will most likely provide significant benefits for the members of this same class unless earned social capital is acquired to bridge across class structure.

We did observe one important display of earned social capital among the lowest economic class. It occurs when there is a death. It appears that when a death occurs to a member of the lower or lower middle class, neighbors contribute to pay for the burial.

In a classic article, Granovetter wrote about the strength of weak ties. In a study of how individuals secure jobs, he discovered that their weak ties were more valuable than their strong ties. (We would translate this to say that their social capital based on earned traits was more valuable than their social capital based on inherited ties in securing employment.) The reason was that homogeneity appears to be a characteristic of strong ties. So, among relationships based on strong ties, they all have access to the same information.

The strength of weak ties appears in many other applications. In less developed countries, social capital is most often focused in one's family, extended family, or ethnic group. This group, however, is often homogeneous and possesses similar resources. Lacking access to information and support from those with different resources often limits social and economic progress. One of the reasons the educational experience is such a valuable resource is that it provides the opportunity to build relationships based on earned rather than inherited kernels.

Investing in Social Capital

A concept familiar to economists is that of equilibrium. An equilibrium system is one in balance, unlikely to be changed unless acted on by additional forces. Among equals, equilibrium levels of social capital tend to be symmetric; person *i* likes person *j* about the same as *j* likes *i*. Part of the explanation for symmetry in relationships among equals is that asymmetric relationships allow one person to exploit the other until symmetry in the relationship is reestablished. In relationships of unequal power, the relationship may not be symmetric, such as might be the case as between a parent and a child or a boss and a worker; however, the benefits from the relationships must be perceived as fair by persons in the relationship. The study of social capital recognizes the rich combination of exchanges that individuals conduct. For example, one person may provide a gift endowed with a message of caring. In return, the giver of the gift may receive signals of validation and an increase in his/her social capital. Only when an economic good is exchanged without flows of validation signals, expressions of caring, and privileged information is the terms of the trade likely to reflect the good's economic exchange value.

Social capital is increased when persons in an exchange relationship receive benefits that exceed their perceived costs. When parties to an exchange perceive they received more than they paid, the previous equilibrium in the relationship is disturbed and a new relationship is formed with increased sympathy and sense of obligation. Fortunately, surpluses in exchange may often be created and lead to investments in social capital because they do not require the expenditure of economic goods and services. For example, information may be shared, validation provided, and caring expressed with little economic cost. This point is illustrated by the pleased faculty member who received a meritorious service award that was valued more than her pay increase. Opportunities for creating surpluses in exchange activities abound. They exist in the classroom, in the work place, in communities, and in our homes. These surpluses can be created through exchanges of economic

goods and services, validation, expressions of caring, or information. The challenge for CANR is to conduct its affairs to maintain and increase its social capital investments. This may be a particular challenge when resources are limited and access to these is often through competitive means.

Social Capital and Institutions

Institutions refer to property rights, values, norms, agreed on rules for resolving conflicts and establishing rights, accepted methods for expressing validation and caring, and exchange of information. Institutions in effect provide order to relationships and organizations. Informal institutions are sometimes called cultural capital and constitute an important resource in and of themselves.

In contrast to institutions, organizations are groups or networks of persons with well-defined membership requirements. These membership requirements allow others to identify members from nonmembers. Membership requirements and activities and practices of organizations are institutions.

There is an important connection between social capital and institutions. The connection is that institutions reflect the distribution and kinds of social capital that exist among those who created and maintain them. In addition, institutions may influence future relationships. Thus, social capital and institutions are interdependent, two blades of the scissors. Some examples of institutions include: driving on the right-hand side of the road, the custom of wearing ties, shaking hands, waiting in lines, and the constitution. Institutions and social capital often substitute for each other. For example, the institution of standardized currency allows one to make purchases without having social capital with the seller. Also helpful in this regard are legal institutions that help enforce contracts. USDA inspection rules and procedures are also institutions that allow persons to buy meat without knowing the farmer that raised the meat.

When institutions do not exist, we resort to personalized social capital to complete exchanges. When you cannot trust your institutions to enforce contracts, you limit your trades to those you trust. This dependence on social capital instead of formal institutions is believed to characterize many less developed countries. Having to depend on social capital to complete trades increases the cost of trades and reduces trading opportunities to those you trust.

The World Bank and others often say that the key to economic progress is the development of impersonal institutions. Unfortunately, what is often ignored is that institutions are created out of and sustained by social capital. How to develop and maintain the right kinds of social capital is the real challenge. The other challenge is to agree on those areas of our lives that we want directed by institutions and those we want influenced by social capital.

Summary and Implications of Social Capital for CANR

The theory of social capital developed at Michigan State has a micro foundation based on human needs for resources including economic goods, validation (meaningful assignments), experiences of caring (friends), and information including information that connects consequences to choices. Social capital is interested in how these resources are accessed and used. Furthermore, the paradigm suggests that we simultaneously seek to satisfy these interdependent needs.

Because all flows among individuals have the potential to provide economic services, validation, experiences of caring, and information, the study of social capital cannot be restricted to a single discipline. Any discipline that includes interpersonal flows in its domain is a proper target for the study and the application of social capital.

In CANR, one can easily find opportunities to study and apply the social capital paradigm. CANR requires the services and support of its students, alumni, extension clientele, legislators, university administrators, faculty, and staff. It is well recognized that many goods and services are

paid for (the carrot approach). In some rare cases, the College must resort to threats (the stick approach) to achieve its goals. However, for the majority of the goods and services it receives, it depends on goodwill–social capital. Thus, activities of the College should be examined for their social capital implications as well as for their economic outcomes.

Social capital in some departments needs to be integrated directly into the curriculum. For example, in agricultural economics, social capital alters the terms and levels of exchanges of goods and services. Excluding social capital flows in economic activities will undoubtedly produce biased predictions and prescriptions. But, the flow of services from parks, forests, fisheries, and other public resources also includes social capital services as well as economic services. Indeed, one's social capital is often required to obtain access to recreational and hunting areas, especially when these are privately owned. Moreover, when people express their preferences for the use and maintenance of these resources, they are recognizing them for their value as providers of social capital services as well as economic and recreation services.

Department-based outreach is focused on the supply of education services. But the direction and terms of these flows, like other interpersonal flows, depend on social capital. Social capital among researchers, extension personnel, and clients facilitates the transfer of technology. The Bailey Scholars program is an interesting experiment that is explicitly attempting to provide social capital services as well as information. Emphasizing the collaborative nature of the experience in the Bailey program reduces the arm's length relationship that exists in most educational settings.

The School of Packaging is another program with a strong need to focus on social capital. Why do we give gift certificates instead of cash, in effect changing the package of our gift? Because the latter package endows the gift with signals of validation and caring that increases the value of the gift. Thus, we may design packages to protect the economic value of products in shipping and storage, but there will always be a need to design packages to convey a social capital message.

But, what about other departments whose discipline is not focused on human interactions such as those that study crops, insects, fruit trees, and engineered structures? Not even these can escape the domain of the social capital paradigm because the questions they are asked to answer and the approaches they follow are social capital determined. For example, animal welfare concerns direct the way we do our animal science research. Public response to animal waste odors has changed the focus of some of our science. As the relationships among persons change and as our economic needs have changed, so have our attitudes toward animals. Now animals provide some of the social capital services obtained in earlier times from human interactions. As a result of these changed relationships, how animals can be studied and used in the production of economic goods and services is more different now than in the past.

Another change that has occurred is that of the social capital between the public and university and corporate researchers. In important ways, the public trust in science and those that do science has eroded. Nuclear power, drugs, herbicides, and pesticides have all proven to have negative as well as positive possibilities. As the public has learned that their safety is not always protected by science, their acceptance and support of the work of science have changed. We now question the safety of our food and bottled water now sells for as much as soft drinks. Radiated foods are accepted in many parts of the world, but social capital in the U.S. has kept most radiated foods off our shelves.

Then, there is the world of socio-biology. We have just begun to explore the similarities in the world of biology and the world of social systems. Perhaps if there were a closer coordination of efforts, we might learn much from each other's science. While mathematical formulae and chemical reactions are independent of relationships and may well be outside of the realm of social capital, the practice of the science still falls well inside the realm of social capital. Thus, educational achievements and the successful transfer of information all depend on social capital. The demands on engineers will be driven by social capital manifest through funding sources, regulations, and local

ordinances. They will be faced by conflicting aesthetic demands of the public and technical demands of architects.

The productivity of departments depends on social capital. If faculty and staff receive not only their salary but also validation, expressions of caring, and receive accurate and timely information, they will be more productive and loyal and less time will be required to monitor effort and enforce norms. When social capital exists in departments and in the College, individuals are willing to serve on committees and perform other duties with significant externalities for their colleagues. However, this macro kind of social capital requires investments in a shared vision and commitment that requires leadership. Where social capital is absent, behavior becomes more self-serving and motivated by expectations of personal rewards.

Leadership development in the College is also an interesting application of social capital. Leadership is about securing the follower-ship of those being led. Historically, attempts to secure follower-ship have included sticks (threats, withdrawal of privileges, etc.), carrots (salary payments, bribes, promise of other advantages), and hugs (goodwill based on one's social capital). Recognizing the different ways to lead is an important study for leaders in CANR.

Migrant and seasonal farm workers represent an important clientele for CANR. This group has traditionally emphasized social capital based on inherited kernels but whose well-being increasingly depends on earned social capital. Their well-being in the areas of education, health care, housing, and access to community resources will require an awareness of social capital.

The access to privately owned land or land controlled by Native Americans for recreational uses including fishing, hunting, snowmobiling, hiking, and others often depends on social capital. Increasing demands on these resources will require an examination of how social capital will affect recreational activities in the state.

Social capital is relevant to the formation of policies affecting the use and maintenance of our natural resources. These often acquire attachment values that are created out of social capital. Perhaps an example will explain the connection. On my desk is a picture of my family taken several years ago. The picture has a value to me independent of the economic value associated with the paper on which the picture was developed and the frame which holds the picture. The framed picture has value because of its association with people that I care about or who are the objects of my social capital. But, what is true of the picture on my desk can also be true of forests, rivers, lakes, animals, home towns, universities, and pets. Public policy that recognizes the difference between economic values and attachment values will be much preferred to those that fail to recognize the important differences.

Social capital has relevance for CANR's curriculum. Many CANR departments study the flows of goods and services between persons and social capital needs to be part of the curriculum that examines how social capital alters the flows. For departments that study elements unrelated to interpersonal flows, social capital has to do with what questions they answer and how they do their science. Do faculty members cooperate, share information, participate socially, review each other's work, or provide validation of efforts? These applications of social capital are universal regardless of the setting. The productivity of any department like the productivity of an athletic team will be influenced by the social cohesiveness and sense of belonging that is often sustained by social capital.

In effect, social capital is the water in which we swim. Some say that fish were the last creatures to discover water. Perhaps there is an analogy to humans. We may often be unaware of the sea of social capital in which we swim and how much of what we do depends on this resource. Nevertheless, becoming more aware of the potential uses and importance of social capital will improve our lives and our work.

The Social Capital Interest Group (*SCIG*) hopes to help the University community discover its shared social capital paradigm. In so many ways, we appear to study and apply social capital, unaware that it is also being studied and applied in sister departments and that we could learn from each other. So, *SCIG* is organizing a conference, *Social Capital: Bridging Across Disciplines*, for the year 2000. We intend to commission papers from scientists representing a variety of disciplines to discuss the applications and importance of social capital in their disciplines. Finally, this conference is planned to prepare the way for a specialization in social capital to be available in the university.

Appendix

The Importance of Kernels

Not all kernels lead to relationships of sympathy. For example, drivers on East Lansing's main road at 5:15 p.m. share a kernel of commonality, but it is not likely to produce a relationship of sympathy. On the other hand, some individuals regularly attend church services together and develop relationships of sympathy. Why do some kernels produce relationships of sympathy and others have little influence on the relationship? The relative importance of kernels likely depends on the following:

1. Opportunities for Synergistic Outcomes. If a group sharing a kernel faces opportunities where the likelihood of success is improved through cooperation, the shared kernel will likely be important in creating shared experiences that produce social capital. Team spirit and spirit de corp are expressions sometimes used to characterize the social capital shared by those striving for a common goal. In contrast, when a shared kernel defines those who compete for a limited resource in a zero or negative sum game, then the shared experience that results will more likely be associated with relationships of antipathy than sympathy and social capital.
2. The Number of Persons Sharing the Kernel. Very large numbers of persons sharing the same kernel may provide little differentiation from other groups and therefore not important for building relationships. For example, one kernel is U.S. citizenship. The group of persons holding U.S. citizenship is so large that very little social capital is organized around this kernel. On the other hand, I once found myself living in a suburb of Lima, Peru and on the Fourth of July a group of persons holding U.S. citizenship got together and celebrated Independence Day and we had a good time even though we were for the most part strangers. What occurred was

that our kernel was narrowed from those holding U.S. citizenship to those holding U.S. citizenship and living in a suburb of Lima, Peru during July of a certain year.

3. The Emotional Distance Between Kernels. During the Viet Nam war, two kernels of commonality were support for and opposition to the war. What made these two kernels important was the emotional distance between those holding one kernel and those holding the alternative kernel. In contrast, I may belong to a group that enjoys listening to and identifying the calls of birds. This kernel does not generate much notice among those who are not interested in birds and thus is less likely to be a strong kernel than if it generated opposition.
4. Approval From Significant Others. Veterans at the end of World War II were received with appreciation and parades. Thus, the kernel of service in World War II was an important kernel and useful in many circumstances. Special educational opportunities and employment were made available to veterans of World War II. Because the kernel of World War II service generated such high levels of approval, it became an important kernel.
5. Longevity of the Trait. Durability is an important quality of capital. Capital's value increases as the length of time over which it can produce valued services increases. If social capital depends on traits or kernels, then these kernels increase in importance as their longevity increases.
6. Maintenance Cost of the Kernel. I have many friends from earlier associations in high school, college, mission, neighbors from earlier residences, and work mates. Unfortunately, I only maintain regular contact with a few of these former friends. Or, in other words, in only a few cases do I continue to invest in shared experiences required to maintain social capital. One reason is that our separation through time and distance makes social capital investments with my old classmates more costly than investments with current neighbors, church members, and work mates. In addition, there are fewer opportunities to receive benefits from distant social capital

investments. So having limited resources, we invest in our social capital with those most likely to provide benefits and with whom investments can be made with less expense, meaning our kernels are often local.

7. Shared Threats. There is nothing like a shared threat to build social capital. When real or imagined threats are made to one's safety, economic survival, or social acceptance, the formation of social capital among the threatened is guaranteed. Regardless of the threat, social capital almost always follows. Political despots use this knowledge of how to create social capital for their regimes by creating threats. Hitler blamed Germany's economic problems on the Jews. Rulers in Iran claim the U.S. is a threat to their way of life. Yugoslavians claimed to be threatened by the Albanians and the list goes on.

Relationships sometimes develop when the kernel is a shared threat or common enemy. Sympathy of this kind is referred to as a cheap form of social capital because it requires so little to create. On the other hand, its survival depends on maintaining the image of a threat or antipathy for the enemy. Remove the threat and often the social capital also disappears, unless other earned kernels have grown up to replace the kernel based on threats.

8. Meeting Needs and Creating Surplus. Relationships and organizations exist to meet needs. We classify needs into the following categories: economic needs, validation needs, expressions of caring, and information. Kernels that lead to relationships or networks that meet one or more of the needs described above will be important. In addition, some kernels are more efficient in meeting needs than others, in that the benefit of the social capital is greater than the obligations or cost of the kernel. Kernels that are useful in meeting needs and do so efficiently will be valued. The concept of efficiency has to do with surplus. If I go to the store and buy an item and pay exactly what I believe the item to be worth based on its economic properties, then no surplus is created and my relationship to the vender has not changed. But, on the other hand,

if the sales person recognizes me by name, compliments my well-behaved children, and approves my choice of attire, then I have received the economic good and paid its price and also received validation services that have value. In effect, I leave the transaction having received more than I paid and the beginning of a sympathetic relationship has been formed.

What makes social capital such an important resource is that a surplus can be created with goods other than economic goods. Thus, stores offering friendly service, car dealers promising to treat us as cherished friends, and some places of business that claim to remember your name in effect are promising you social capital services of caring and validation in addition to their economic goods and services.